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W76
20, n.d.

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REFERENCE



Steam Specialties

Wright-Austin Company

Office of Eastern Division

30 Church Street
NEW YORK, N. Y.

TELEPHONE CORTLANDT 5907

Home Office and Factory
Detroit, Mich.

STEAM SPECIALTIES

C621,085
W76
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*Catalog
Number*

20

WRIGHT-AUSTIN CO.

W
Succeeding

Wright Manufacturing Company
Austin Separator Company
Murray Specialty Manufacturing Company

FOREWORD

AFTER twenty-five years of producing the highest grade steam specialties in close association, the Wright Manufacturing Company, the Austin Separator Company, and the Murray Specialty Mfg. Co. have combined their interests under the name of the Wright-Austin Company.

¶ The high standards of manufacture and service which have been jealously guarded by the older concerns for over a quarter of a century will be maintained, justifying the continued confidence of the customers of all three companies.

¶ The manufacture of the regular specialties will be continued as usual. They will continue to be known as the Wright Steam Traps, Wright Safety Alarm Columns, Wright Air Traps, Wright Exhaust Heads, Wright Strainers, Wright Trimmings, Austin Steam Separators, Austin Oil Separators, Austin Vacuum Oil Separators, and also the well-known Murray Boiler Feed Regulators and Pump Governors.

¶ Not only will the Wright-Austin Company supply every specialty that has been catalogued formerly, but will also be able to duplicate any special separators and water columns which have been made from time to time.

¶ The concentration of effort resulting from the combination of these organizations will result in a service for quality of material, and promptness in the shipment of orders unequalled by any other similar organization.

WRIGHT SAFETY ALARM WATER COLUMNS

SAFETY, ECONOMICAL AND EFFICIENCY VALUES SAFEGUARDS LIFE AND PROPERTY

THE first and most important object of a safety water column is to give warning to those in charge of a boiler in case the water varies above or below the proper level. When this happens the whistle sounds an alarm, continuing to blow until the feed water supply has been regulated. In the event of low water, this warning may be the means of averting a boiler disaster.

ITS ECONOMIC VALUE

The protection afforded is in itself sufficient reason for equipping every boiler with this device. But in addition there are several economic advantages to be gained from its use, all of which are the natural result of keeping the water steady, at the proper level.

A SAVING IN FUEL

When the water level is constantly changing there is bound to be a great loss of heat and fuel. If the water is too high an unnecessary amount of heat is required, involving wasteful consumption of fuel. If it is too low it necessitates the sudden forcing in of a large quantity of water at a lower temperature, which absorbs the heat and reduces the steam pressure; another waste of fuel, heat, and money.

DRY STEAM

High water in the boiler not only causes wet steam, but makes possible the drawing over of "slugs" or large quantities of water from boilers to the cylinders. A blown out cylinder head, or the complete wrecking of the engine may follow. The gain in engine efficiency resulting from steady steam pressure and the use of dry, elastic steam, is well-known and appreciated by all competent engineers.

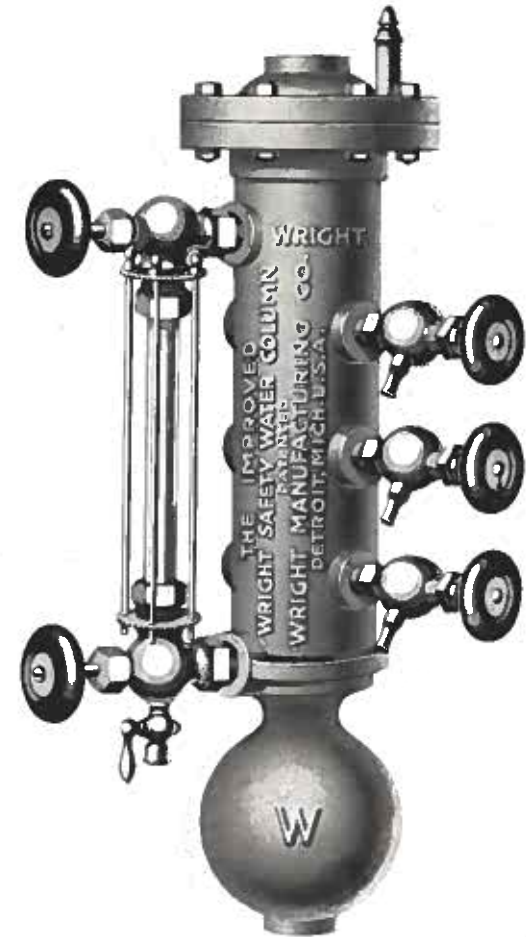
INCREASED DURABILITY OF BOILERS

Another effect of unsteady water is fluctuation of temperature and pressure, which in turn results in constant expansion and contraction of the boiler. This racking and straining is destructive to the life of the boiler and the source of frequent repair bills as well.

MAKES THE ATTENDANT WATCHFUL

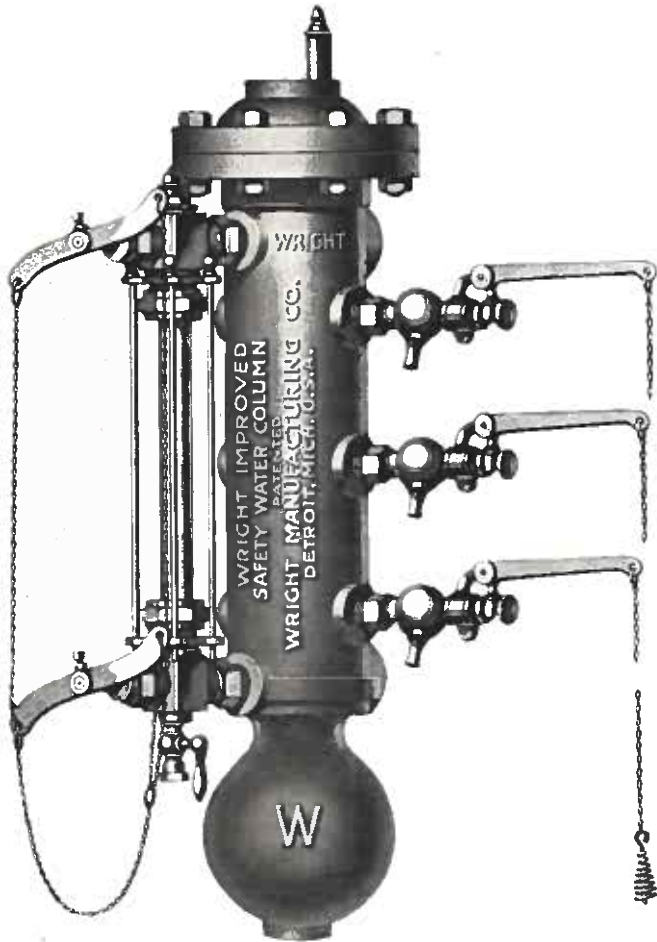
All the advantages stated are insured through installation of the Wright Improved Safety Alarm Water Column, due to the fact that it guarantees constant watchfulness and care upon the part of the attendants—the only way the whistle can be kept quiet. It is continually on guard in the interest of the proprietor, the superintendent and the engineer, attracting their attention in any emergency.

The Wright Improved Safety Alarm Water Column



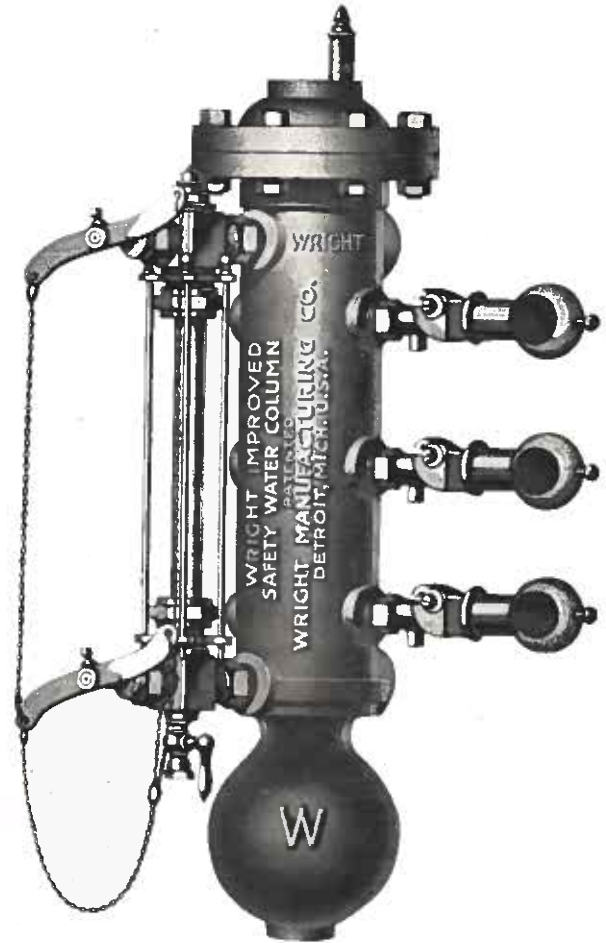
Showing Our "Regular" Compression Gauge Cocks
and Self Cleaning Water Gauge

The Wright Improved Safety Alarm
Water Column



With "Wright" Pattern Chain Lever, Quick-Closing Water Gauge and Gauge Cocks

The Wright Improved Safety Alarm
Water Column



Showing the "Wright" Pattern Chain Lever, Quick-Closing Water Gauge and Weighted, Regrinding Gauge Cocks. No Spring, No Washers.

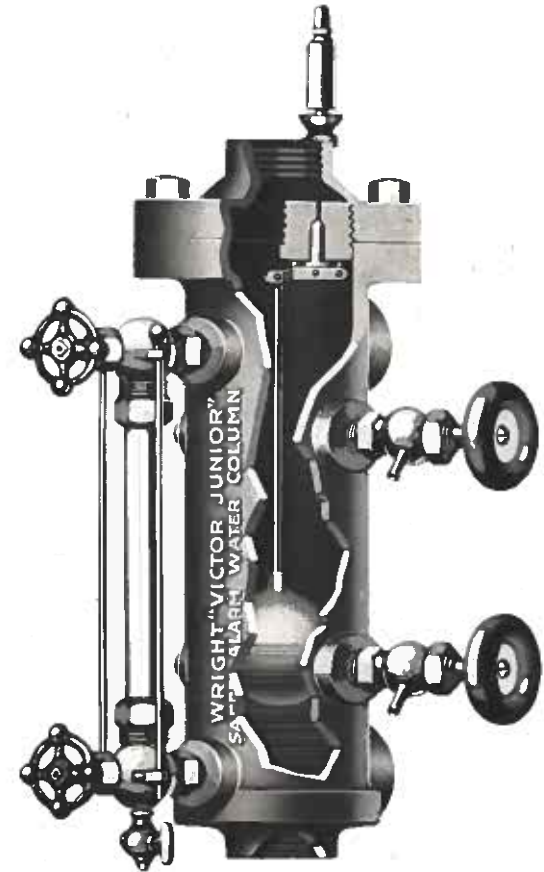
The Wright "Victor" Safety Alarm
Water Column



The above Column is a duplicate of the Wright Improved Column without sediment chamber—see dimensions "H" page 13.

This Column is adapted to use where sediment chamber on Wright Improved interferes with pipe connections.

The Wright "Victor Jr." Safety Alarm
Water Column



Made in one size with Low Water Alarm only—No Sediment Chamber
—Provision made for Water Gauge and two Gauge Cocks

Prices quoted on application

See bottom of page 13 for Victor Jr. dimensions, etc.

For High and Low Pressure Boilers—including all small Vertical, Stationary and Portable Boilers.

Price List of The Wright Improved Safety Alarm Water Columns

(Subject to Discount)

Combined High and Low Water Alarms

Size of Column	Kind and Size of Boiler	Variation Between Alarms	List Price of Columns Without Water Gauge and Gauge Cocks
1	36" to 54" Water Tube Others determined by natural variation of water in boiler See Note	6"	\$28.00
5		8"	30.00
7		12"	35.00
9		18"	40.00
11		24"	42.50
13		30"	45.00
15	36"	50.00	

Low Water Alarms

2	36" to 54" Water Tube	\$25.00
6		28.00
8		35.00

Prices on Water Gauges and Gauge Cocks, as shown, will be furnished upon application.

General Dimensions in Inches

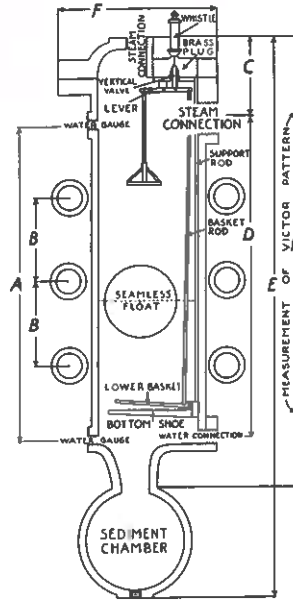
Size of Column	Steam and Water Connections	Blow-off	Water Gauge	Gauge Glass	Gauge Cocks Center	Gauge Cocks Size	Center of Water Connection to Top of Column	Diameter of Column	Length Over All
1	1	3/4	1/2 x 14	5/8 x 12	3	1/2	18 1/2	4 1/2	26
5	1 1/4	3/4	3/4 x 18	3/4 x 16	4	3/4	21 1/2	5	30 3/4
7	1 1/2	3/4	3/4 x 21	3/4 x 19	6	3/4	26	5	34 1/4
9	1 1/2	3/4	3/4 x 24	3/4 x 22	9	3/4	30	5	39
11	1 1/2	3/4	3/4 x 30	3/4 x 28	12	3/4	36	5	45
13	1 1/2	3/4	3/4 x 36	*3/4 x 34	10	3/4	42	5	51
15	1 1/2	3/4	3/4 x 42	*3/4 x 40	12	3/4	49	5	57
2	1	3/4	1/2 x 14	5/8 x 12	3	1/2	18 1/2	4 1/2	26
6	1 1/4	3/4	3/4 x 16	3/4 x 14	4	3/4	20	5	29
8	1 1/2	3/4	3/4 x 21	3/4 x 19	6	3/4	26	5	34 1/4

*Two Glasses joined at center with Stuffing Box. Four Gauge Cocks.

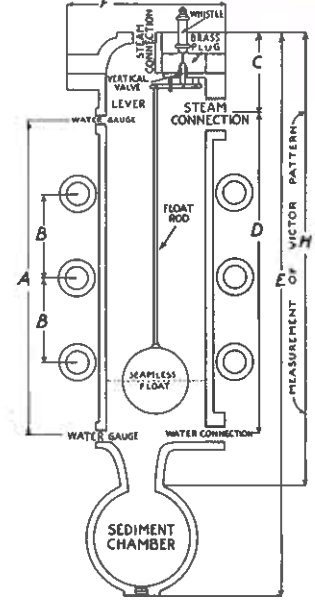
NOTE—The size of the Column is in all cases determined by the natural variation of the water in the boiler on which it is to be used. No mistake will be made ordinarily by selecting one of our Columns having the extreme gauge cocks the same distance apart as on the plain Column furnished with boiler.

A complete set of interior attachments, including VALVE RODS and FLOAT for either LOW WATER ALARM only or COMBINED HIGH and LOW may be ordered by designating the kind and size of Column and "ONE SET OF ATTACHMENTS COMPLETE."

IMPORTANT—To avoid mistakes, when ordering, note that combined High and Low Water Alarms are designated by ODD numbers and Low Water Alarms by EVEN numbers.



Combined High and Low Alarm



Low Water Alarm Only

Detailed Dimensions in Inches—High and Low Water Alarms

Size of Column	A Water Gauge Centers	B Gauge Cocks Centers	C Steam Connection to Top of Column	D Distance of Centers, Water to Steam Connection	E Length Over All	F Diameter of Flanges	Thickness of Flanges	Number and Size of Bolts	Water Gauge and Gauge Cocks Tapped, Standard	Size of Water and Steam Connections	Sediment Chamber Tapped	H Victor Column Length Over All (Has No Sediment Chamber)
1	14	3	4 1/2	14	26	8	3/4	6-1/2	1/2	1	3/4	20 1/4
5	18	4	6 1/2	15	30 3/4	8	1	6-1/2	3/4	1 1/4	3/4	23 3/4
7	21	6	6 1/2	15	34 1/4	8	1	6-1/2	3/4	1 1/2	3/4	27 1/4
9	24	9	See Note	15	39	9	1 1/8	6-3/4	3/4	1 1/2	3/4	32 1/4
11	30	12	Foot Note	15	45	9	1 1/8	6-3/4	3/4	1 1/2	3/4	38 1/4
13	36	10	Note	15	51	9	1 1/8	6-3/4	3/4	1 1/2	3/4	44 1/4
15	42	12	Note	15	57	9	1 1/8	6-3/4	3/4	1 1/2	3/4	50 1/4

Low Water Alarms only

2	14	3	4 1/2	14	26	8	3/4	6-1/2	1/2	1	3/4	20 1/4
6	16	4	6	14	29	8	1	6-1/2	3/4	1 1/4	3/4	22
8	21	6	6	14	34 1/4	8	1	6-1/2	3/4	1 1/2	3/4	27 1/4

"Victor Jr." No. "0" Low Water Alarm

7 1/2	4	7 1/2	14	4 7/8	3/4	3/8	1					
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These Columns are 25% heavier than other safety water columns, and are designed to meet the requirements of high-pressure practice.

They will work at any pressure.

NOTE—But one steam connection—located in center of cover at top—is provided on Nos. 7, 8 and larger sizes.

Superiorities of the Wright Safety Alarm Water Columns

ONLY ONE FLOAT

—made of the best copper we can buy, is contained in Wright Alarm Water Columns. Round and seamless, it offers the greatest possible resistance to steam pressure, a distinct advantage over types of columns operating two oblong floats with seams.

ONE VERTICAL VALVE

—affording a straightaway passage of steam to the whistle is another distinct feature in Wright Columns, a marked advantage over types containing two horizontal valves.

MECHANISM ATTACHED TO COVER

Removing the bolts from flanges and lifting the cap to which working parts are attached facilitates quick inspection.

CAN BE TESTED INSTANTLY

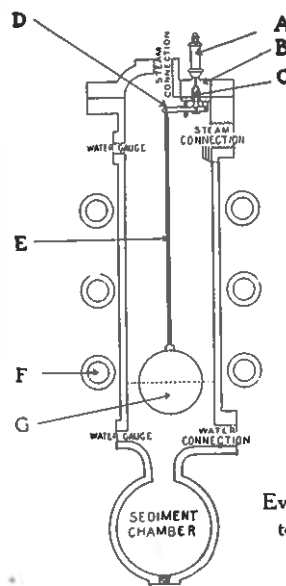
Wright Columns can be quickly tested by simply opening the blow-off valve, which lets the water out, lowers the float and causes the whistle to blow as though low water actually existed in the boilers. This operation also serves to thoroughly cleanse the working parts in the Column.

GAUGE COCKS ON EITHER SIDE

Provision for Gauge Cocks on either side of all Wright Columns adapts them to right or left hand connection.

HIGH OR LOW PRESSURE

All Wright Safety Alarm Columns may be used for either high or low pressure boilers.



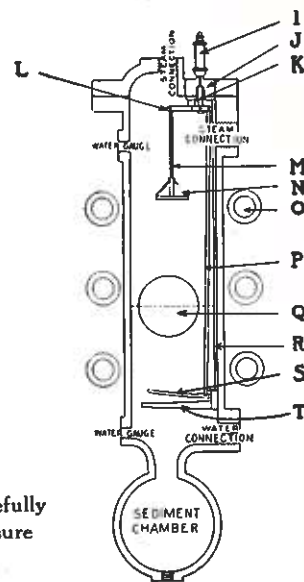
“WRIGHT”

Low Water Alarm Only

The Float The Vertical Valve The Whistle

SIMPLE
DEPENDABLE
ECONOMICAL

Every “Wright” Column is carefully tested under high steam pressure before shipping



“WRIGHT”

Combined High and Low

LIST OF PARTS

“WRIGHT” Low Water Alarm Column

- A — Whistle
- B — Brass Plug
- C — Vertical Valve
- D — Lever
- E — Float Rod
- F — Gauge Cock
- G — Seamless Float

“WRIGHT” Combined High and Low Column

- I — Whistle
- J — Brass Plug
- K — Vertical Valve
- L — Lever
- M — Top Basket Rod
- N — Upper Basket
- O — Gauge Cock
- P — Lower Basket Rod
- Q — Seamless Float
- R — Support Rod
- S — Lower Basket
- T — Bottom Shoe

NOTE—A complete set of interior attachments, including VALVE RODS and FLOAT for either LOW WATER ALARM only or COMBINED HIGH and LOW may be ordered by designating the kind and size of Column and “ONE SET OF ATTACHMENTS COMPLETE”

The Wright Alarm Water Columns

Importance of Proper Installation

STATISTICS prove that every fourth or fifth boiler explosion is the result of defective boiler fittings; hence, the importance of the correct installation of a dependable Alarm Water Column.

Connection to and from the Column should be as short and great in area as possible, and by means of plugged crosses rather than tees or elbows. This plan facilitates easy and frequent cleaning of pipes.

Fig. 1 illustrates an excellent installation. The top connection includes an angle-valve that can be opened and closed readily. The drip pipe is nearly full size down to the sewer. When blowing into the sewer the lower drip valve should be opened and the upper angle valve connection closed, thus causing the water to flow out of the boiler through the pipes and the Column at full speed, carrying with it any possible sediment or accumulation.

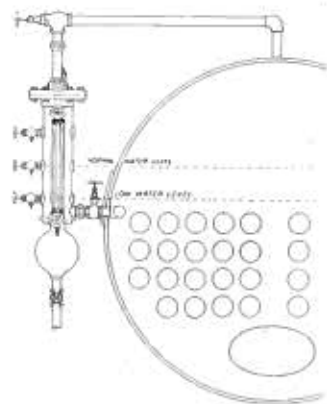


Fig. 2

Fig. 2 illustrates a very simple but practical and universally approved method of connection. The dotted lines indicate the normal and low water level. Our suggestions show but two of a variety of possible installations. Our Engineering Department will be pleased to offer its assistance in any plans for efficient installation of Wright Columns whenever requested.

Fig. 1

Wright Automatic Continuous Flow Steam Traps

Some Every-Day Condensation Troubles Easily Overcome Through Their Installation

THE inside surface of a steam pipe, due to its lower temperature, acts more or less as a condensing agent for steam passing through. This is a common trouble under ordinary conditions, and unless the water of condensation is automatically drained as it accumulates, the steam is diluted or weakened in proportion to the quantity of water held in the pipes.

Headers from steam boilers, coils of pipe used in laundry dry rooms, mangles, steam kettles, dry kilns in brick and lumber plants, mine steam systems, drain pipes from steam separators, steam heating plants, super heaters, steam systems in paper mills, and a hundred similar conditions can all be made to produce the well-known high efficiency insured by a constant flow of Dry Steam if Wright Steam Traps are installed.

Wright Steam Traps, for high or low pressure service, are designed, constructed and guaranteed to drain automatically and continuously all accumulated condensation from steam pipes, regardless of small flows or floods of water without steam waste in the operation.

DRAINING STEAM SEPARATORS WITH THE WRIGHT EMERGENCY STEAM TRAP

The Receiver of a steam separator is that section of the appliance designed for the reception of water eliminated from the separator as the live steam passes through the device to the engine cylinders.

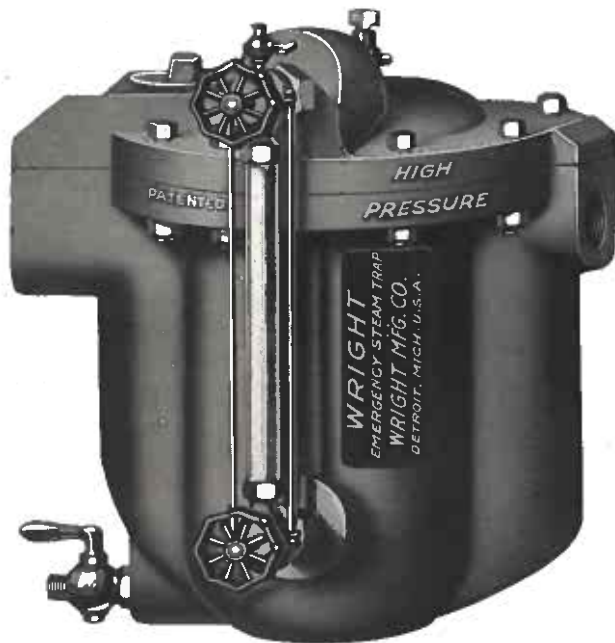
A steam separator is too important a piece of apparatus to risk any possibility of its usefulness being counteracted by inattention or forgetfulness—we refer to the opening and closing occasionally by hand of a valve on the drain pipe for disposing of the accumulated water in the "receiver" portion of the separator.

If this "valve" is not opened at regular intervals, there is danger of the accumulation of water in the separator becoming so great that the separator will "overflow," the water being "carried over" by the steam current, with results that cannot be appreciated by any except those who have had experience with engine wrecks. A simple prevention against this possibility is secured by the use of the Wright Automatic Continuous Flow Steam Trap.

Large numbers of these Traps have been installed in connection with steam separators, and their unfailing action in disposing of volumes of condensation on the instant, in emergencies, makes them unexcelled for separator use.

Absolute reliance may be placed, too, upon the statement that "no waste of steam is possible under any condition in the use of this Trap." Its value for use in connection with a separator, considering the comparatively slight expense involved, makes its adoption desirable, even if its cost is viewed simply in the light of an insurance upon the safety of your engine.

The Wright "Emergency" 3-Valve High-Pressure
Automatic Continuous Flow Steam Trap



STEAM PRESSURES

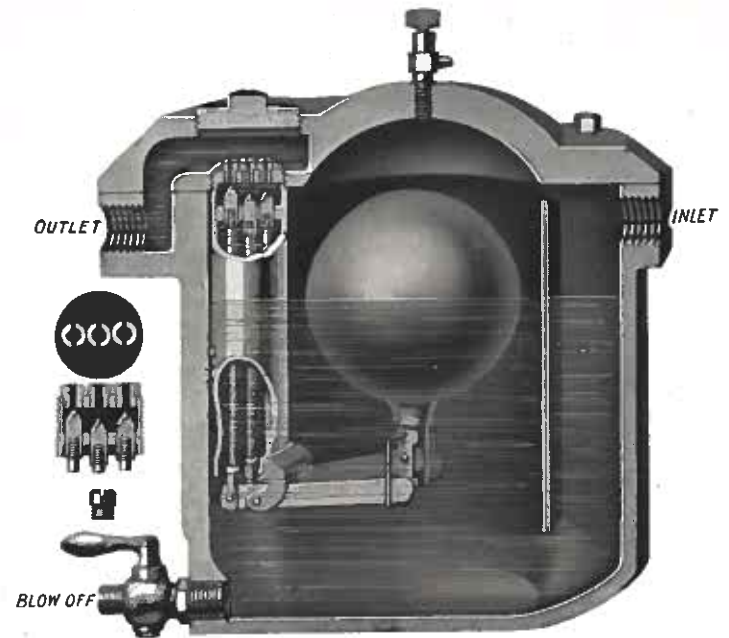
Emergency "regular" patterns are intended for pressures up to 200 pounds. We make a "special" Emergency Trap guaranteed to operate under pressures up to 300 pounds.

IN A CLASS BY ITSELF

The Wright "Emergency" Steam Trap has gained an enviable reputation for efficiency and general excellence, and will be found today in a majority of the steam plants in which thoroughly modern equipment is made a feature. No effort has been spared to make this Trap perfect in every detail.

BUILT ON NEW LINES

As a radical departure from the old Steam Traps, both in principle and design, it has merited the quick appreciation of engineers and steam users generally, but the principle involved is so simple that no one with practical ideas will question its success for a moment.



GUARANTEED THROUGHOUT

Wright "Emergency" Steam Traps are guaranteed to operate successfully where specification of size, etc., is correct. No special adjustments or changes of valves are required to suit different steam pressures. Material and workmanship are strictly high-grade in every particular.

VALVES ON TOP

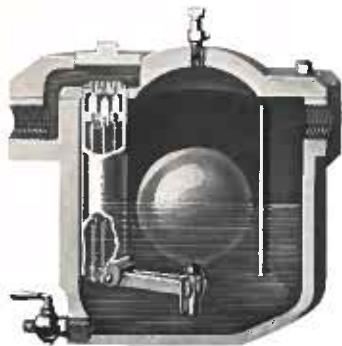
Three steam-tight valves are located at the highest point of the Trap, where they are entirely removed from accumulations of grit, scale, sediment, etc., and therefore can hardly become inoperative from the causes named.

IN EMERGENCIES

The action of this Trap in emergencies is instantaneous, a feature which renders it invaluable for many uses. The discharge from each of the valves being continuous, is very great—much greater than is possible with an intermittent Trap. See table on page 21 for maximum discharge in pounds.

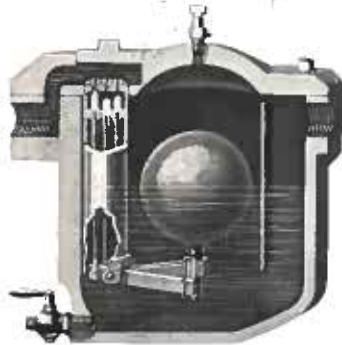
OPERATION

The condensation enters the Trap, filling it to about the center and forming a seal of from four to six inches of water at both inlet and outlet, which prevents any possible escape and waste of steam.



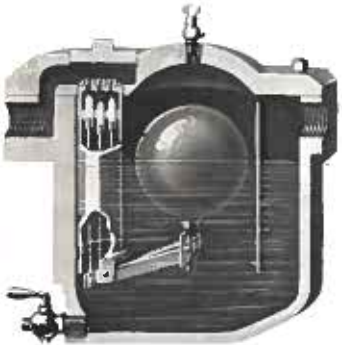
Showing No. 1 or Service Position of Discharge Valve

No. 1 Valve takes care of the flow under ordinary conditions



Showing No. 2 or Semi-Emergency Position of Discharge Valve

No. 2 Valve opens when the flow exceeds capacity of No. 1 Valve



Showing No. 3 or Emergency Position of Discharge Valve

No. 3 Valve opens under flood conditions, giving full capacity of inlet pipe

WHEN thus filled, the float rises and opens the center valve (indicated as valve No. 1 in the enlarged view of valve arrangement, shown on this page) slightly, if there is but little water coming in, but widely in the event of a sudden inflow. This one valve is equal to the task of taking care of the flow under ordinary conditions, but if the water comes into the Trap faster than one valve can discharge it, the water rises in the Trap, carrying the float with it and opening valve No. 2 sufficiently to discharge the surplus water, or wide open if necessary. Valve No. 3 is opened in the same manner, providing for the full capacity of the inlet pipe, but it rarely happens that the volume of condensation coming into the Trap is sufficient to tax the combined capacity of all three valves. Ordinarily, one valve alone is able to do all the work, leaving two valves in reserve for emergencies.

ALL WORKING PARTS

are attached to the cover and are accessible without disturbing the piping in the least.

VALVES AND VALVE SEATS

These are clearly shown in the cut on this page. Both valves and valve seats are made of the best MONEL METAL, and the seats may be renewed, if necessary, without removing the cover from the Trap, by unscrewing the iron plug over the tube, when the valve seats may be easily taken out with a screw-driver.

ATTENTION IS CALLED

to the bar extending across the interior of tube at top. This serves to center the valves into the valve seats—an illustration of the care which has been expended upon the smallest details in the making of the Trap, with the idea of insuring faultless operation and avoiding many small sources of annoyance.

NO STEAM CAN ESCAPE

The water seal at "inlet" and "outlet," referred to in last paragraph on page 19, makes steam waste absolutely impossible.

THE FLOAT

The copper floats used in our Traps are of our own special construction. They are seamless and round—the strongest possible form for a float, and are reinforced at the most essential point by an extra thickness of metal. Severe tests under extremely high steam pressures, as well as perfect results obtained in extensive practical use, have demonstrated that this is the strongest, most durable float yet devised.

A WATER GAUGE

and gauge glass are provided, through which the operation of the Trap is always visible. The Trap must be vented by means of the air valve attached to cover.

INLET AND OUTLET

—are on the same line—a very important consideration in some cases, and never a disadvantage.

A BLOW-OFF

is provided and the Trap may be blown free from sediment as often as necessary. This is an important advantage possessed by very few Traps.

MATERIALS AND WORKMANSHIP

are strictly first-class. Wide and thick flanges, proper gaskets and plenty of bolts are used.

COST

The "Emergency" does not cost any more than many inferior Traps of less capacity, and the guarantee removes all risk.



WRIGHT "EMERGENCY" ONE-TWO-THREE VALVE

Price List, Sizes and Dimensions of the

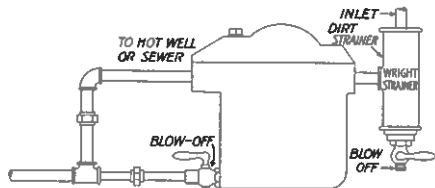
Wright "Emergency" Steam Trap

Size No. of Trap	1	2	3	4	5	6	7	8
Size of Inlet and Outlet	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Distance through Inlet and Outlet	11 1/4"	12"	12 3/4"	13 3/4"	15 1/4"	16 1/2"	18"	19 1/2"
Maximum Discharge in Pounds per hour for one valve	1000	1260	1550	2625	4200	6700	9740	14000
Intended for sq. ft. of Radiating Surface	3000	3700	4600	7800	12600	20100	29000	42000
Intended for lineal ft. of 1" Pipe	9000	11100	13800	23400	37800	60300	87000	126000
Shipping Weight, lbs.	70	100	120	140	160	220	260	320
List Price	\$26.50	\$28.50	\$36.00	\$43.00	\$60.00	\$82.00	\$132.00	\$150.00

NOTE—Every Trap carefully tested before leaving factory. Results guaranteed. Liberal Discount given from above prices.

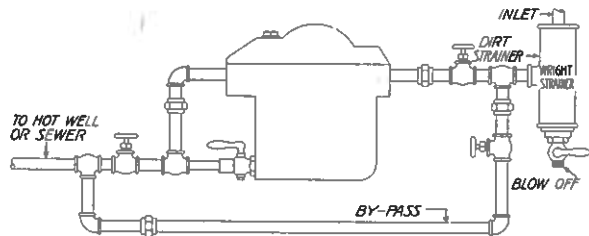
Directions for Installing and Operating the Wright "Emergency" Steam Trap

(For Varying Pressures up to 200 Pounds)



Installation 1

Installation No. 1 provides for inspection, etc., by simply shutting off at inlet.



Installation 2

Installation No. 2 provides a bypass for uninterrupted passage of steam when Trap is removed from pipe line. Close valve in "inlet" and "discharge" pipe, unscrew the unions and lift out Trap.

THE above illustration shows clearly the proper pipe arrangement at "inlet" and "outlet" end of Trap. If our instructions are adhered to when "setting up," the Trap will take care of itself thereafter.

Always locate the "Emergency" Trap below the lowest point to be drained.

In making pipe connection, see that the diameter of pipe corresponds with opening at "inlet" and "outlet" of Trap.

Turn on the steam, leaving the "Blow-Off" open long enough to cleanse the Trap and pipe line. This also serves to heat the Trap, a necessary condition to successful operation.

Leave the air valve on top of cover slightly open at all times in order to vent the Trap of air.

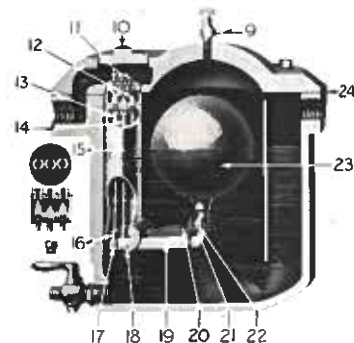
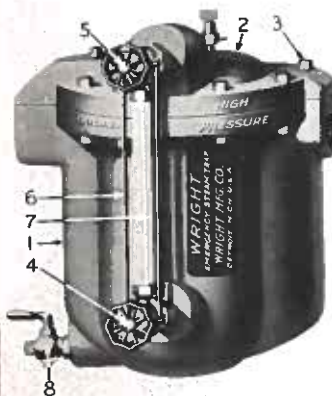
When the "Blow-Off" is closed the Trap will fill to about one-half, as indicated by gauge glass, thus forming a perfect "water seal," which prevents the passage of steam through the Trap.

The discharge is automatic and continuous—not intermittent. The operation will be found perfect, regardless of small flow or floods, if the size specified is correct and the Trap is properly installed.

The Trap must be "Blown-Off" frequently, in order to keep it free from sediment.

LIST OF PARTS

Wright "Emergency" High Pressure Continual Flow Steam Trap

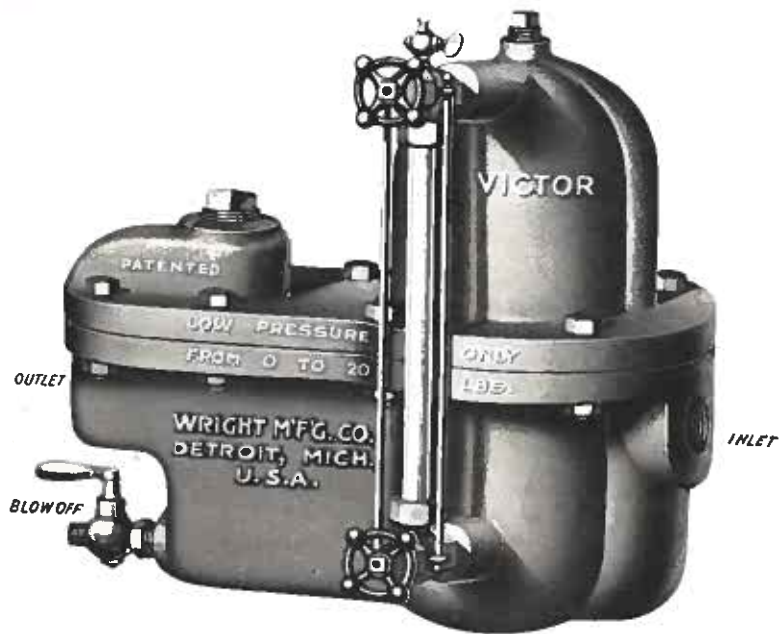


- No.
- 1—Trap Body
 - 2—Cover
 - 3—Cover Bolts
 - 4—Bottom Gauge Fitting
 - 5—Top Gauge Fitting
 - 6—Gauge Guards
 - 7—Gauge Glass
 - 8—Blow-off Cock
 - 9—Air Vent Cock
 - 10—Cover Plug
 - 11—Valve Seats
 - 12—Valves

- No.
- 13—Outside Valve Stems
 - 14—Center Valve Stem
 - 15—Tube
 - 16—Valve Stem Clevis
 - 17—Valve Stem Rivets
 - 18—Fulcrum Pin
 - 19—Float Levers (Outside)
 - 20—Center Float Lever
 - 21—Swivel
 - 22—Swivel Rivet
 - 23—Float
 - 24—Gasket

In ordering please give NAME of part desired as well as NUMBER of same

The Wright "Victor" Low-Pressure Automatic Continuous Flow Steam Trap



FOR PRESSURES 0 TO 20 POUNDS

EXTREMELY LARGE VALVE

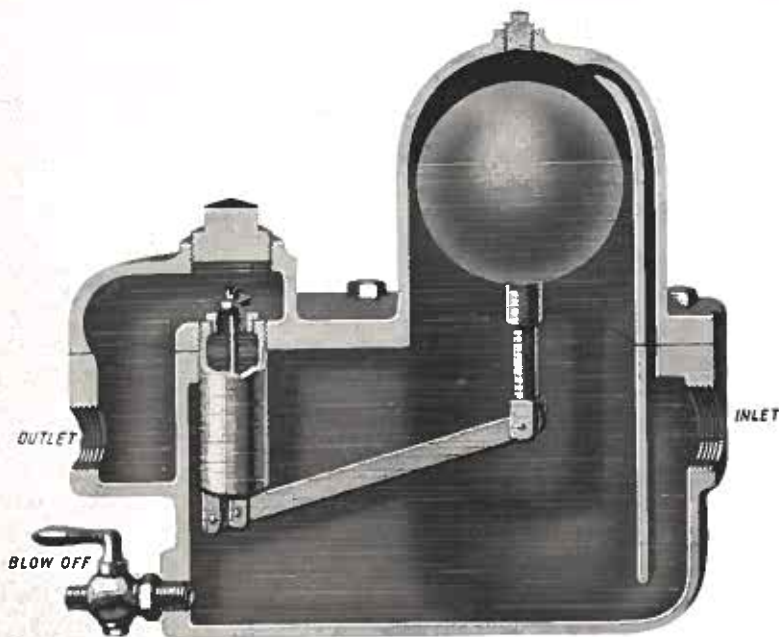
The valve opening in the "Victor" Trap is as large proportionately as the pipe connections at "inlet" and "outlet." A mechanical valve of proven worth.

ITS GREAT CAPACITY

Through use of a valve of large area the "Victor" is able to handle an immense amount of condensation; as much, in fact, as the inlet pipe can bring to it. It will not waste steam under any condition. The maximum discharge of each size of Trap is noted in pounds in the table on page 22.

THE VITAL POINT

The "Victor" Trap possesses a marked advantage in ability to discharge through one large valve, small or large quantities of condensation under absolutely no steam pressure, (incoming condensation alone being sufficient to lift the valve) and up to twenty pounds.



OPERATION

The water enters the trap, filling it to the level of the valve and raising the float. At the same time the valve is lifted from its seat. Discharge then takes place, continuing until the inflow ceases, when the valve closes as the float descends.

A PERFECT WATER SEAL

The deep water seal, covering both inlet and outlet of Trap, makes it impossible for steam to escape. This seal is maintained steadily, as discharge does not take place until the water reaches the level of the valve.

WATER GAUGE

A Water Gauge and Gauge Glass are provided through which the operation of the Trap is always visible. The Trap must be vented by means of Air Valve attached to upper fitting of water gauge.

BLOW-OFF

This provides for the removal of all foreign matter, sediment, etc., an important feature.

RESULTS GUARANTEED

The "Victor" Low-Pressure Steam Trap is guaranteed to operate successfully under all low pressure conditions of service, provided specification of size, etc., is correct.

VALVE AND VALVE SEATS

These are constructed of the best steam jet metal and may be easily removed, if necessary, by means of a screw driver and a wrench. They are located in the top of the Trap, where sediment does not reach them. The absence of any intricate parts is also an important consideration.

ROUND SEAMLESS FLOAT

The float is one which long experience in steam trap making has proven to be the strongest, most durable and most satisfactory in every way.

CONSTRUCTION

The working parts are attached to the cover, and can be removed without disturbing the piping. Inlet and outlet are on the same line which in some cases is a decided advantage. All material is first-class and the workmanship of the highest character.

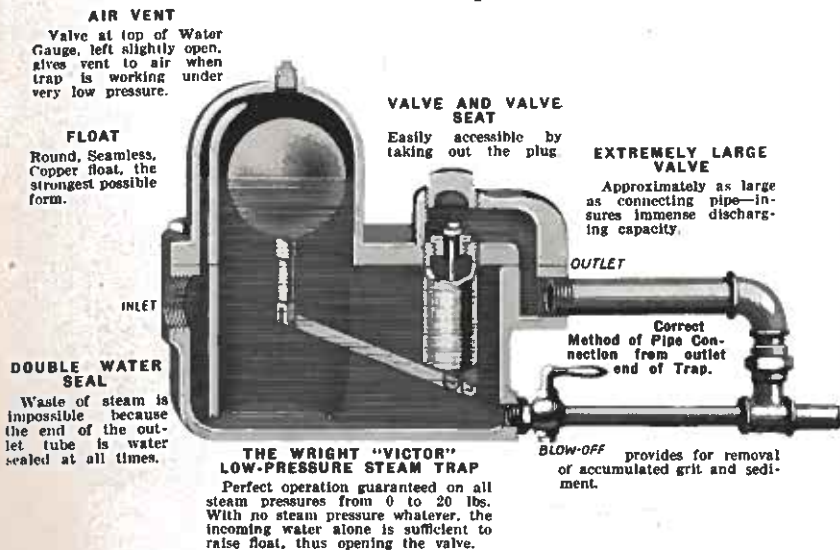
Sizes, Dimensions, Capacities of

The Wright "Victor" Low-Pressure Steam Trap

Number of Trap	Size Inlet and Outlet	Distance Inlet to Outlet	Height of Trap Over All	Pounds Discharge Per Hour, 5 lbs. Pressure	Intended for Square Feet of Radiating Surface	Lineal Feet 1-inch Pipe	Lineal Feet of 1-inch Pipe For Lumber Kilns, Green Houses, etc.	Lineal Feet of 1-inch Pipe for Laundries, Brick Dryers, Brew Kettles, etc.	Weights	List Price
0	1/2"	9 1/4"	9 1/4"	1726	1432	4300	2200	860	45	\$ 22.00
1	3/4"	12 3/4"	11 1/4"	3746	3107	9300	4650	1860	70	26.50
2	1"	14"	12 1/2"	6552	5438	16300	8200	3260	80	28.50
3	1 1/4"	15 1/2"	14 1/2"	9988	8290	24870	12450	5000	100	36.00
4	1 1/2"	18"	15 1/4"	18000	14940	44820	22500	9000	120	43.00
5	2"	19 1/2"	17 1/2"	24000	19920	59760	29800	12000	160	60.00
6	2 1/2"	22"	20"	30000	24900	74700	37000	15000	200	82.00
7	3"	23"	21"	48250	40000	120000	60000	24000	255	132.00
8	3 1/2"	24"	22"	63918	53050	159000	80000	32000	260	150.00

NOTE—Every Trap carefully tested before leaving factory. Results Guaranteed.

Directions for Installing and Operating the Wright "Victor" Continuous Flow Steam Trap



THE WRIGHT "VICTOR" LOW-PRESSURE STEAM TRAP
Perfect operation guaranteed on all steam pressures from 0 to 20 lbs. With no steam pressure whatever, the incoming water alone is sufficient to raise float, thus opening the valve.

(For Low Pressure, 0 to 20 Pounds)

See page 22 showing Emergency Trap installations for suggestions of pipe connections, etc.

ALWAYS locate the "Victor" Trap below the lowest point to be drained.

In making pipe connections, see that the diameter of pipe corresponds with opening at "inlet" and "outlet" of Trap.

Turn on the steam, leaving the "blow-off" open long enough to cleanse the Trap and Pipe Line. This also serves to heat the Trap, a condition necessary to successful operation.

Leave the "Air Valve" on top of water gauge fitting slightly open at all times—just enough to prevent "air pockets."

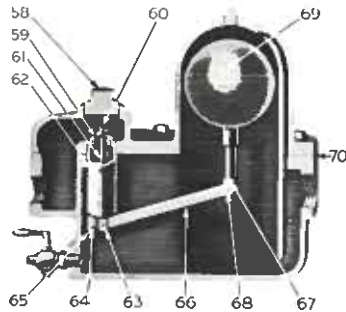
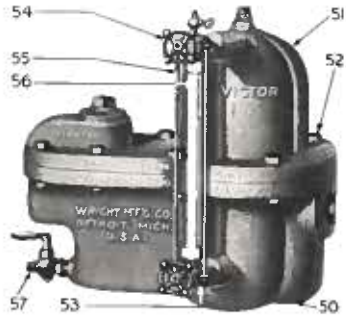
When the "Blow-Off" is closed, the Trap will fill to about two-thirds, as indicated by the gauge glass, thus forming a "water seal" at both "inlet" and "outlet."

If the proper size is specified, and the Trap is correctly installed, the operation will be perfect at all times, regardless of small flow or floods of condensation.

The Trap must be "blown off" frequently to keep it free from sediment.

LIST OF PARTS

Wright "Victor" Low-Pressure Automatic Continuous Flow Steam Trap

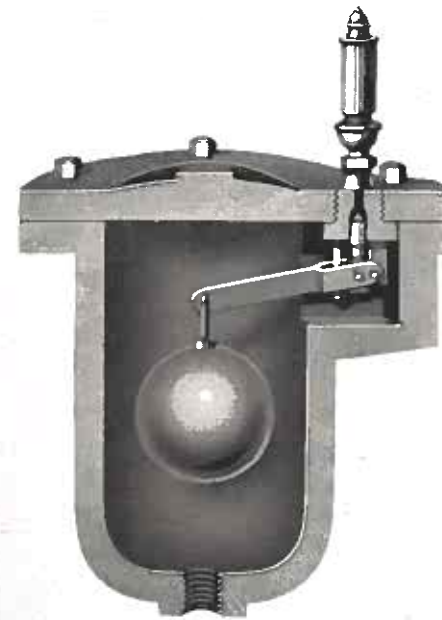


- No.
 50—Trap Body
 51—Trap Cover
 52—Cover Bolts
 53—Bottom Gauge Fitting
 54—Top Gauge Fitting
 55—Gauge Guards
 56—Gauge Glass
 57—Blow-off Cock
 58—Cover Plug
 59—Valve Seat
 60—Valve

- No.
 61—Valve Stem
 62—Tube
 63—Valve Stem Clevis
 64—Valve Stem Rivet
 65—Fulcrum Pin
 66—Float Lever
 67—Swivel
 68—Swivel Rivet
 69—Float
 70—Gasket

In Ordering, Please Give Name of Part, Number of Same, and Size of Trap.

The Wright Air Trap



Removes Air from Water Under Pressure

This Trap is designed for removing air from water under pressure, for which purpose it is without an equal. It has large capacity, is positive in action and simple in construction. The float is round and seamless. When used in hot water heating systems, the Trap is placed at the highest points. It can be placed in street manholes, requiring no attention whatever.

Other purposes of this Trap are for removing the air from closed water receivers, and for sounding an alarm when the water in closed tanks reaches a lower point than is desired. For the latter service the Trap is equipped with a whistle.

Among a variety of services to which it is adapted is the discharge of air from closed water receivers.

Size of Trap, 6 x 7; inlet, $\frac{3}{4}$ in.

Price quoted on application.

The Wright "Cyclone" Exhaust Head



WASTE

HOW IT OPERATES

The exhaust steam after leaving the exhaust pipe is impinged against the inverted cone. It is then deflected outward against the sides of the inner shell, where the oil and condensation adhere and drip into the gutter, to be carried below the flow of steam by means of drip pipes.

PERFECT SEPARATION

The steam, after being deflected by the cone, passes up between the outer and inner shells (follow the course of the arrows shown in "Sectional View") and is again impinged against another inverted cone which forms the top. The steam then turns and passes down between the inner shell and the outlet pipe, the remaining condensation being removed from the steam by its contact with the under side of the top cone and the outlet pipe.

PREVENTS DAMAGE

THE old adage "penny wise and pound foolish," might apply to the man who owns or rents a building for which he is responsible, and who permits the oil and water with exhaust steam to freely spray its injurious effect upon the roofs, walls, etc., because of the cost (practically nominal) of a good Exhaust Head as a preventive.

ELIMINATES TROUBLE

A dripping exhaust pipe is an expensive nuisance in many ways than one: it causes roofs to rot; disfigures the walls—your own and perhaps your neighbors; in cold weather, wet and icy sidewalks; injury to clothing of persons passing by, etc. All of these annoyances and losses may be prevented simply through the installation of a Wright "CYCLONE" Exhaust Head, in addition to muffling the noise of exhaust steam.

AN IMPORTANT FEATURE

THE condensation is collected by means of the gutter which surrounds the outlet pipe. The gutter is covered by "letters patent" and is used solely in connection with the Wright "CYCLONE" Exhaust Head. The drip pipes, five in number, lead all condensation below the flow of steam to the waste pipe.

OTHER SUPERIOR FEATURES

The great amount of condensing surface contained in the Wright "CYCLONE" Exhaust Head is a distinct advantage. This is also true of the large passages which permit increased expansion of steam, and of the free outlet, which makes this "head" especially adaptable for high-speed engines. All "back pressure" is avoided.

CONSTRUCTION DETAILS

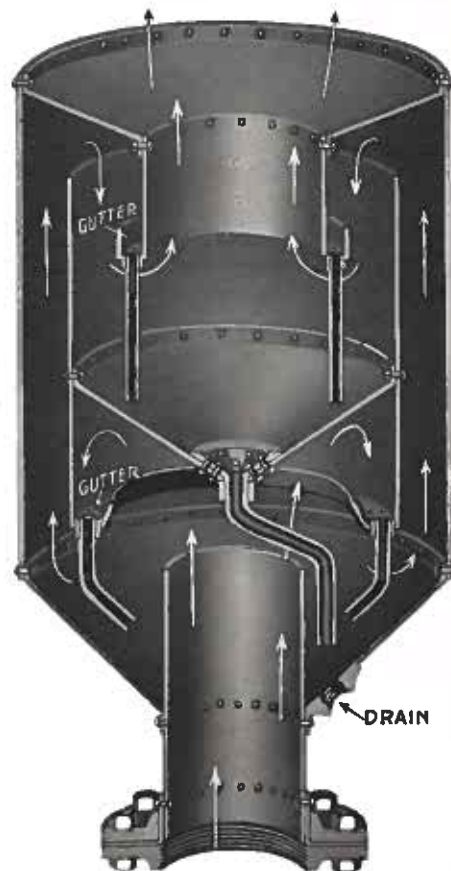
The Wright "CYCLONE" Exhaust Head is built for long service. It is practically indestructible, being made throughout of extra heavy galvanized steel plate, riveted, soldered and thoroughly braced. The outer shell is heavily coated with a rust resisting paint. **THE DRIP PIPES FROM GUTTERS AND CONE ARE OF COPPER.**

OUR AIM

We have not attempted to make a cheap exhaust head, but one constructed on scientific principles, at as reasonable a price as possible, consistent with first-class workmanship and material.

OUR GUARANTEE

We guarantee the Wright "CYCLONE" Exhaust Head to be larger, made of heavier material, and to be more efficient than any "head" on the market. If they are not as we represent them, and entirely satisfactory to the purchaser, we extend full privilege of return at our expense.



General Internal Area—No Back Pressure

Dimensions of the Wright "Cyclone" Exhaust Head

Size of Exhaust Pipe, Inches	Height Inches	Diameter Inches	Size of Drip Pipe, Inches	Shipping Weight Pounds
1 or 1½	18½	10	½	30
2 or 2½	21	12	¾	32
3 or 3½	23¾	14	1	60
4 or 4½	27	16	1	72
5	30½	18	1¼	98
6	37	21	1¼	130
7	41½	24	1¼	178
8	44½	27	1½	208
9	46¾	30	1½	250
10	52	33	1½	319
12	57½	37	2	425
14	60½	42	2½	550
16	72	46	2½	700
18	83	54	3	925
20	91	63	3	1120

Write for prices.

Small sizes up to 2½ inches are fitted with standard threaded nipples. Sizes from 3 inches to 12 inches are fitted with flange unions. In large sizes the flange on exhaust head is made to conform in diameter and drilling with flange on the exhaust pipe.

In the manufacture of large sizes, the weight of the steel plate used is increased in proportion to the size specified. We take extra precaution to properly stay and brace all "Cyclone" Exhaust Heads, particularly those intended for unusual strain, such as steel plants, rolling mills, etc., where the force of the exhaust is great. In this connection attention is directed to the great internal area of "Cyclone" Exhaust Heads, there being no possibility of any "back pressure" whatever.

We carry in stock, for immediate shipment, all sizes up to 20 inches

Special Wright "Cyclone" Exhaust Heads



SOME idea of the facilities of this company for the manufacture of Exhaust Heads, regardless of size or special requirements, can be obtained from the above illustration showing a pair of forty inch Wright "Cyclone" Exhaust Heads furnished on order received from a prominent street railway company.

We have furnished heads as large as fifty-four inches which would just pass through the tunnels and bridges of the railroad on which they were shipped. Large exhaust heads of this type may be used as atmospheric condensers, exhaust mufflers, etc.

We would be pleased to have our customers call on us at any time to assist them in solving their exhaust head problems.

The Wright Strainer

For Use on Steam or Water Systems

Prevents Sand, Scale and Vegetable Substances from Entering
Steam Traps, Water Pipes, Boilers, Meters, Etc.



A Special Strainer for a Special Purpose

Very effective where the source of boiler feed is from rivers, pond lakes, etc., a condition subjecting the boilers to impurities, resulting scale, etc.

Installed in pipe lines leading to Steam Traps (see illustrations of installations on page 22) its use eliminates the possibility of foreign matter obstructing the valves, and in consequence, interfering with satisfactory operation of traps.

Reference to sectional drawing herewith will demonstrate the simple, yet positive action of this Strainer as applied to a hundred or more varying conditions.

The Strainer tube is of brass, and many times larger in area than "inlet."

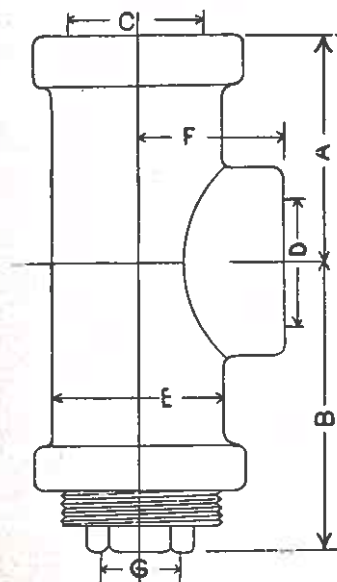
A simple blow-off valve screwed into the opening in plug and opened occasionally will serve to keep the Strainer free from accumulated matter.

Strainer tube is easily removed by unscrewing plug to which the tube is attached.

We guarantee satisfactory operation.

Dimensions and Price List

Wright Strainer



Adaptable for all pressures up to 250 pounds

Size No.	A	B	C	D	E	F	G	Price
000	3	3 ³ / ₄	1/2	1/2	2 ⁵ / ₈	2 ¹ / ₁₆	1/2	\$2.00
00	3	3 ³ / ₄	3/4	3/4	2 ⁵ / ₈	2 ¹ / ₁₆	1/2	2.00
0	3	3 ³ / ₄	1	1	2 ⁵ / ₈	2 ¹ / ₁₆	1/2	2.00
1	3	3 ³ / ₄	1 ¹ / ₄	1 ¹ / ₄	2 ⁵ / ₈	2 ¹ / ₁₆	1/2	2.50
2	3 ¹ / ₂	4 ¹ / ₄	1 ¹ / ₂	1 ¹ / ₂	2 ⁵ / ₈	2 ¹ / ₁₆	1/2	3.00
3	4 ³ / ₈	5 ¹ / ₄	2	2	4 ³ / ₁₆	2 ³ / ₁₆	3/4	5.00
4	5	6 ¹ / ₄	2 ¹ / ₂	2 ¹ / ₂	4 ¹ / ₁₆	3 ¹ / ₁₆	3/4	7.00
5	6	7 ¹ / ₂	3	3	6	3 ⁵ / ₈	3/4	9.00

Austin Steam and Oil Separators

OUR ENGINEERING DEPARTMENT

The specification of a Steam or Oil Separator adapted to unusual conditions is a matter best determined by expert mechanical advice.

Regardless of theory and construction, Steam and Oil Separators cannot reasonably be expected to perform satisfactory service unless fitted in every respect to the conditions to be overcome.

Realizing this fact we have for years maintained an expert engineering department thoroughly experienced in the designing and construction of Steam and Oil Separators to operate under all conditions and whose advice and assistance is always at the disposal of our friends and patrons.

IMPORTANT

When you write or wire for prices, information, etc., be sure to state figure number given in catalog.

GUARANTEE

Every Austin Separator is sold subject to trial and return at our expense of transportation both ways if when properly specified, installed and operated it fails to develop the efficiency claimed.

We carry in stock for immediate delivery all regular sizes of our standard pattern Separators and are well equipped for prompt execution of orders for special types.

Descriptions, tables and illustrations following are so complete and comprehensive that a little time and care in their reading will enable you to select a Separator exactly suited to your requirements.

The reasons of economy and increased efficiency attending the use of the Austin Separators are best considered under general headings covering the forms of service for which they are intended.

LIVE STEAM SEPARATORS

ADVANTAGES OF LIVE STEAM—Even under the best conditions all live steam when leaving the boilers contains more or less entrainment, some of it being lifted out directly with the steam, but most of it being carried along in suspension in the steam current.

Water in live steam mains, due to either of these causes, together with that resulting from condensation, becomes an agency of destruction when introduced into the engine cylinder in larger quantities than the clearance will provide for. It is a well-known fact that water is practically incompressible, so that when it enters a cylinder of small clearance a wrecked engine is often the result.

Among other causes which give rise to accidents of this kind, besides those already stated, may be mentioned, first, priming of boilers due to impurities in the feed-water supply; the forcing of boilers beyond their normal capacity; and, conversely, sudden demands of the engine for more steam, occasioned by temporary increases of load. A contingency of this kind gives abundant opportunity for water to be lifted out of the boilers and so drawn along with the steam, under great velocity and in considerable quantity, with disastrous results to the engine.

Sudden rushes of water of this kind, or "slugs" as they are familiarly termed by engineers, are sometimes, also, the result of accumulations of water in pockets in the pipe-line.

LARGE RECEIVER SEPARATORS A SAFEGUARD—In cases where boilers are operated at nearly full capacity, or where there is danger of water being carried over into the engine in considerable quantities for any of the other reasons above stated, the use of an efficient Live Steam Separator is imperative. Such conditions call for larger receiver capacity than is provided by separators intended for ordinary service.

A large Receiver Separator is absolute in the protection it affords the engine, providing a proper means is furnished for removing the water of condensation through the drain pipe of separator. All makes of Live Steam Separators should have installed on the drain pipe a first-class steam trap, which removes automatically all drainage. Removing the water by hand valve, as is often done, should not be permitted or encouraged, as one instance of neglect or forgetfulness in opening the valve, may result in an expensive cylinder accident.

INCREASED EFFICIENCY OF THE ENGINE—A maximum of power with a minimum consumption of fuel is the aim of engineering science. One of the foremost economic advantages gained in the use of a first-class Live Steam Separator is that it lessens in great degree the tremendous loss of heat from the steam through the capacity of water for absorbing heat. As all engineers know, steam

Figure "A"

Standard Pattern

Austin Live Steam Vertical Iron Separator

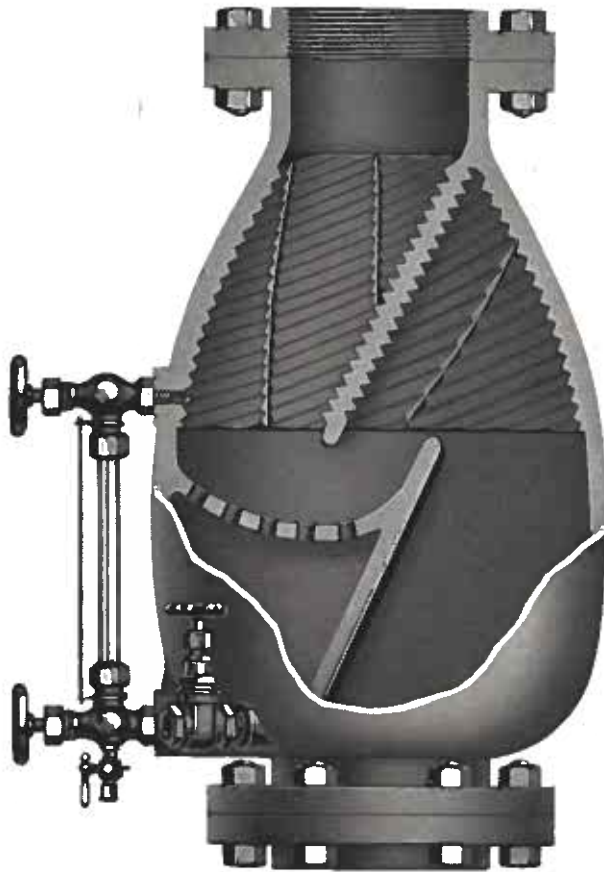


Figure "A"

Standard Pattern

Austin Live Steam Vertical Iron Separator

THE Figure "A" is, without question, one of the most perfect eliminators ever devised for taking water out of live steam. Since first introduced there has been no material modification in the design of this machine, which in itself proves the correctness of the principles upon which it is constructed. Its effectiveness in separating liquids or solids from steam currents passing through it, with either upward or downward flow, will be understood from a glance at the opposite cut, making description almost unnecessary. The inner walls and baffle are fully corrugated, all lines of corrugation leading to one point, the receiver portion of the machine.



SIZES AND DIMENSIONS IN INCHES

Sizes	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12
A	S.E.	S.E.	7	7½	8½	9	9¼	10	11	12½	13½	16	19
B	11	11	13	15¾	16¾	18	20	22¼	25¼	27½	31½	37	40¼
C	7	7	8	9	10	11	12	13	15	17	19	23	25½
Weights	50	50	95	125	135	160	215	245	315	440	575	910	1000
Drains	½	½	¾	¾	¾	¾	¾	1	1	1¼	1¼	1½	1½

Prices Quoted on Application

Results Guaranteed

For Extra Heavy Flange dimensions

Figure "B"

Standard Pattern

Austin Live Steam Horizontal Iron Separator



Can be connected either right or left hand.

Prices Quoted on Application

Results Guaranteed

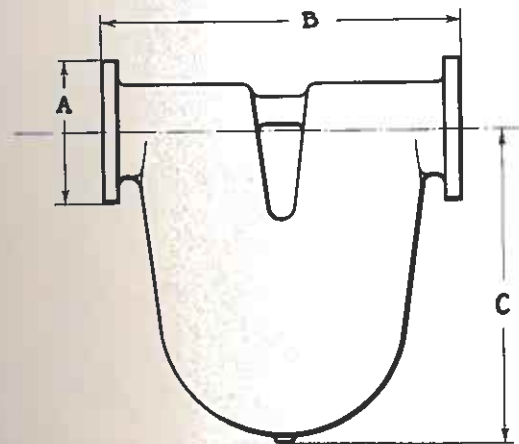
Figure "B"

Standard Pattern

Austin Live Steam Horizontal Iron Separator

THE principle upon which the Austin Fig. "B" Separator is designed is known as an undershot construction. The main feature contributing to the successful operation of this form of separator is that the baffle plate is not set at right angles to the entering steam current, but is set at an angle so that when the steam is impinged against it, the particles of water rebound at an opposite angle. This sets up a rotating motion in the steam, bringing the latter in contact with the inside walls of the separator. These walls are heavily corrugated, as is also the surface of the baffle plate, and all corrugations are designed so as to carry the drainage out of and away from the course of the steam.

Any moisture not caught by the upper baffle plate and by the inner walls, is finally separated by means of additional baffle plates located in the well or receiver portion of the separator, one of these plates being shown in the illustration.



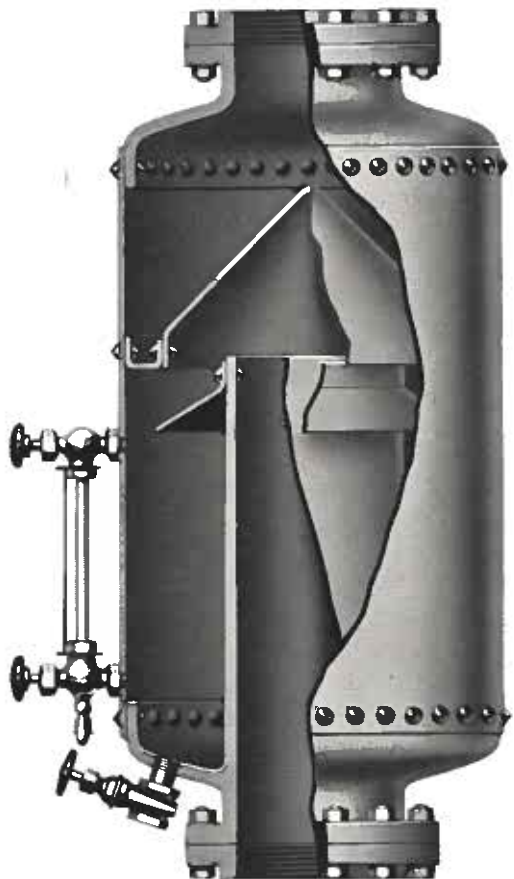
SIZES AND DIMENSIONS IN INCHES

Sizes	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12	14
A	S. E.	S. E.	7	7½	8½	9	9¾	10	11	12½	13½	16	19	21
B	9	9	13¼	15¼	16	18¼	19¾	20¾	24¼	27¼	30¾	31	36	39
C	9	9	12	13	14	15	17	20¾	22	25	29	36	40	42
Weights	45	45	115	125	165	215	265	285	435	600	835	1135	1545	1625
Drains	½	½	¾	¾	¾	¾	¾	1	1	1¼	1¼	1½	1½	2

For Extra Heavy Flange dimensions

Figure "C"

Austin Live Steam Vertical Steel Receiver Separator



Prices Quoted on Application

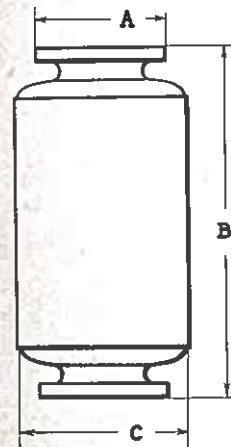
Results Guaranteed

Figure "C"

Austin Live Steam Vertical Steel Receiver Separator

THIS type is constructed and adapted for piping in sizes from 6 inches up to the largest used for live steam, and to withstand any working pressure. This machine can be installed if desired with its lower flange to match the flange on the throttle of the engine. In length and diameter it is manufactured to suit different conditions, the principal one being that of the cubical contents desired, which in general practice is three times the cubic capacity of the engine cylinder.

The operation is easily described. A cone placed directly below the inlet pipe forms a baffle, and upon striking this the steam and water are thrown downward against the sides of the separator, thence past the guard attached to inlet pipe and into the well. This construction enforces a thorough separation of moisture from the steam, the guard preventing the ascent of water along with the upward flow of steam.



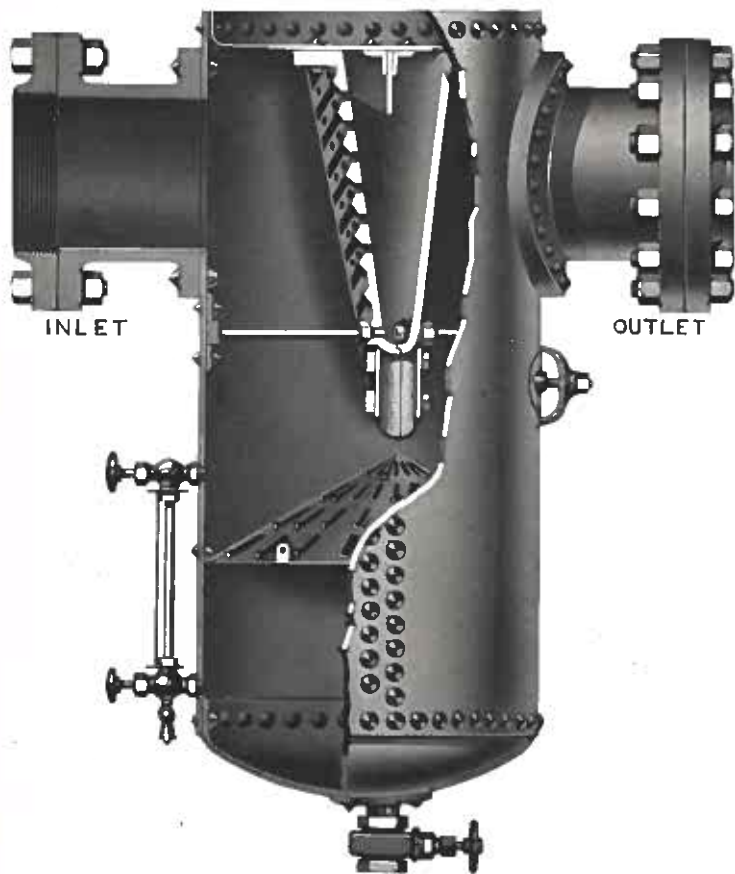
SIZES AND DIMENSIONS IN INCHES

Figure "C"

Sizes	6	7	8	10	12	14	16	18	20
A	12½	14	15	17½	20½	23	25½	28	30½
B	46	48	48	50	56	62	68	74	80
C	22	24	24	26	30	34	38	42	46
Weight	700	800	800	900	1100	2080	2500	2900	3500
Drain	1	1¼	1¼	1½	2	2	2	2½	2½

Figure "D"

Austin Live Steam Horizontal Steel Separator



Prices Quoted on Application

Results Guaranteed

Figure "D"

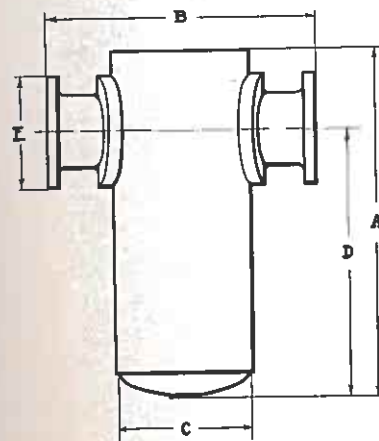
Austin Live Steam Horizontal Steel Separator

THE Austin Fig. "D" separator, shown on opposite page, can be used to great advantage where pipe lines run close to the ceiling, lack of head room making the selection of an overshot or side relief machine unadvisable.

Or, where it is desired to have a separator with two, or even three, outlets to supply as many engines, this form of separator lends itself readily to such construction, by a special arrangement of baffles.

The baffle plate is peculiar to itself. A perfect drainage system of grooves leads to the sides, and in addition, much of the water in the steam is driven through the perforations in the baffle, the lower part of which forms a trough, also draining to the sides.

The cone in the lower part of the separator effects still further separation and at the same time preventing the steam from agitating the water and carrying the latter to the outlet, should there be any in the receiver.

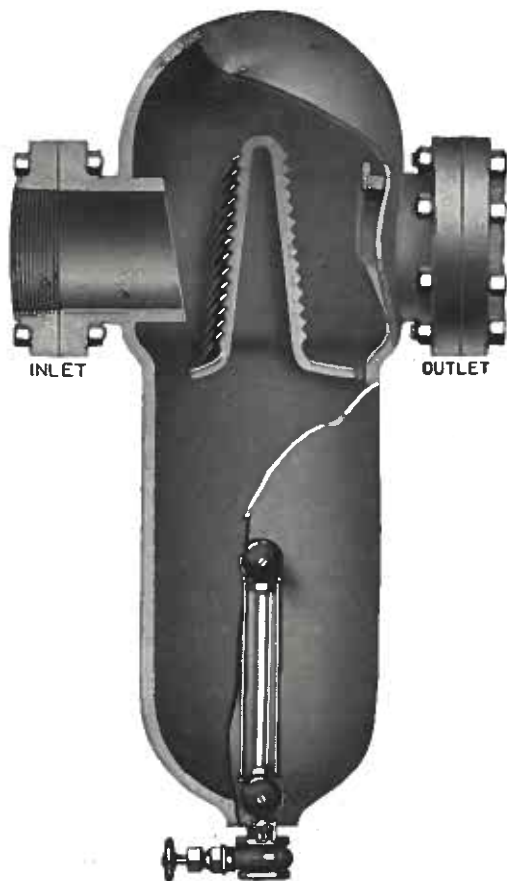


SIZES AND DIMENSIONS IN INCHES
Figure "D"

Sizes	8	10	12	14	16	18	20
A	50	55	63½	72½	74½	81	87
B	34	40½	44	47	50	53	56½
C	18	22	24	26	28	30	32
D	39½	44	50	56	59	62	68
E	15	17½	20½	23	25½	28	30½
Weights	700	1050	1300	2000	2200	2500	2900
Drains	1¼	1½	2	2	2	2½	2½

Figure "E"

Austin Live Steam Horizontal Iron Receiver Separator



Prices Quoted on Application

Results Guaranteed

Figure "E"

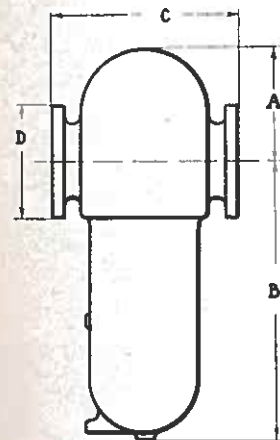
Austin Live Steam Horizontal Iron Receiver Separator

THE Fig. "E" separator has the angle baffle plate and specially extended inlet, designed to force the steam, after striking the baffle, to take an angle that causes it to be thrown from baffle to the inner shell and vice versa, imparting a perfect centrifugal motion.

An overshot baffle plate affords the most easy and natural course possible for the steam, air or gas, fulfilling the natural law that such currents ascend and that the separated particles fall by gravity.

This separator will eliminate water from gas to perfection, and is so used in many large gas plants. Also eliminates water from air compressors in mines, etc.

The Figure "E" Separator is provided with a flanged ring around the inside of the outlet nozzle to catch all condensation that passes the baffle plates, and drain it through the small hole provided for that purpose into the water well of the separator.

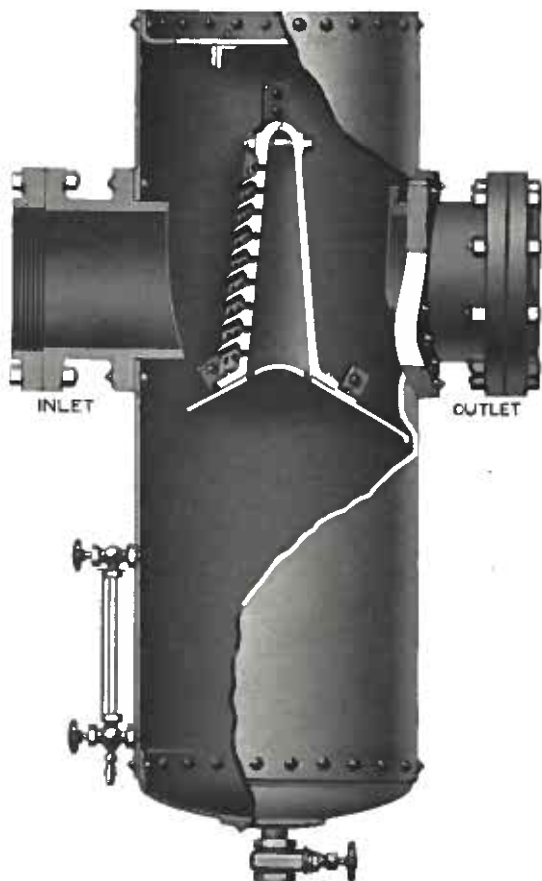


SIZES AND DIMENSIONS IN INCHES

Size*	2	2½	3	3½	4	4½	5	6	7	8	10	12	14
A	5	6	6½	7½	9	10	11	12	13¾	16	20	23	26
B	10	12	13	15	17	20	23	26	29	32	38	41	44
C	9	11	12¼	13¾	14¾	16¾	19	21	22¾	24	30	34	39¾
D	6½	7½	8¼	9	10	10½	11	12½	14	15	17½	20½	23
Weight	35	125	155	170	230	310	470	565	715	880	1670	1945	3055
Drains	½	¾	¾	¾	¾	¾	1	1	1¼	1¼	1½	1½	2

Figure "G"

Austin Live Steam Horizontal Steel Receiver Separator



Prices Quoted on Application

Results Guaranteed

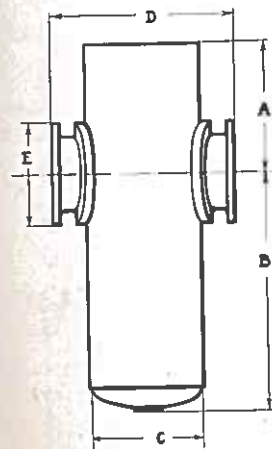
Figure "G"

Austin Live Steam Horizontal Steel Receiver Separator

GREAT receiver capacity, utmost strength of construction, and perfection in economic results are the three chief requirements upon which the construction of this separator is based.

This necessitated the designing of a steel machine, with the baffle so constructed that it would resist the force of large inflows of water entering under high pressures, as oftentimes occurs when there is an excessive demand for steam by the engine.

Incorporated in this machine will be found some of the special features already described in other of our patterns, for example the extension form of inlet pipe designed to impart a rotary motion to the steam in rebounding from the angular baffle plate. The latter, also, is similar to the baffle employed in Fig. "D", only that the Fig. "D" is an undershot machine, while in type "G" we have an overshot pattern. A ring flange is used at outlet, the advantages of which have been previously noted.



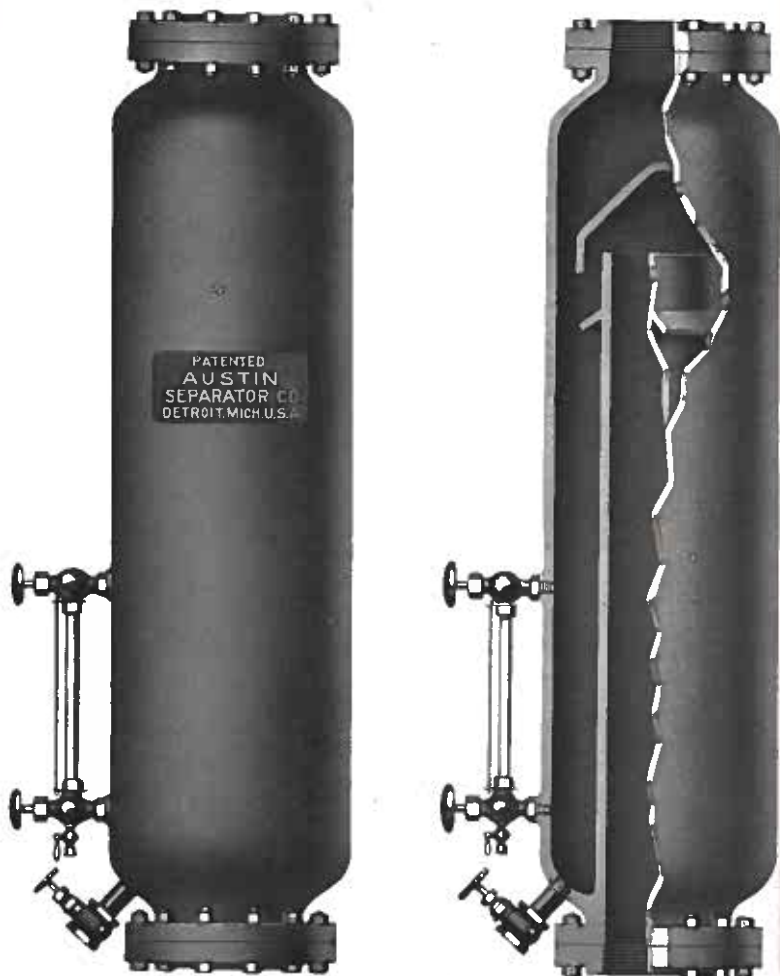
SIZES AND DIMENSIONS IN INCHES

Figure "G"

Sizes	10	12	14	16	18	20	22	24	26
A	21	24	28	32	36	38	40	44	48
B	40	48	54	60	64	68	72	76	80
C	22	24	26	28	30	32	34	36	38
D	40½	44	47	50	53	56½	59½	63	66½
E	17½	20½	23	25½	28	30½	33	36	38½
Weights	1350	1600	2250	2850	3200	3640	4180	4720	5200
Drains	1½	2	2	2	2½	2½	3	3	3

Figure "H"

Austin Live Steam Vertical Iron Receiver Separator



Prices Quoted on Application

Figure "H"

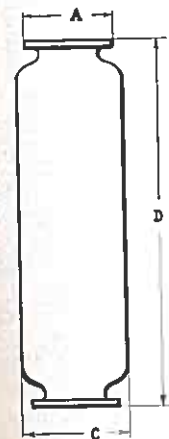
Austin Live Steam Vertical Iron Receiver Separator

FOR installation directly above the throttle valve of the engine, a better choice cannot be made than our Fig. "H" Vertical iron receiver type. First, no separator gives higher efficiency in delivering dry steam to the engine cylinder.

Second, it affords the advantages of a perfect steam accumulator or receiver. Third, it is very artistic in design, the casting being smooth and cylindrical. The lower flange can be made to conform in size and drilling to match that of the throttle.

In operation, the Fig. "H" separator follows much the same principle as the Fig. "C". With a downward flow of steam, the condensation is impinged upon the cone, by which it is deflected against the inner walls or shell of the separator, thence draining into the well or receiver. A guard projecting from and encircling the inner tube obviates any possibility of separated moisture being carried up the sides of this tube, over the top and then down into the cylinder along with the steam.

This separator is exceptionally strong in design and construction and will withstand the highest steam pressures.



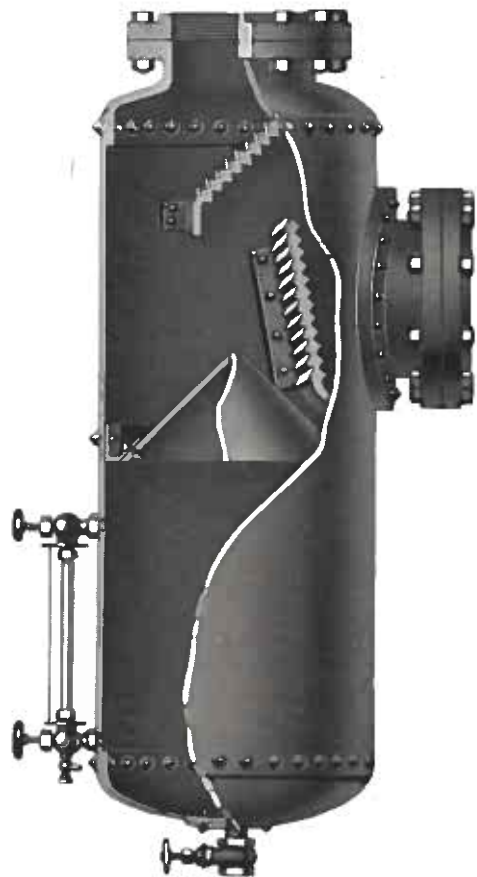
SIZES AND DIMENSIONS IN INCHES
Figure "H"

Sizes	3	3½	4	4½	5	6	7	8	10
A	8¼	9	10	10½	11	12½	14	15	17½
C	9½	10½	11¾	11¾	14¼	16¾	18¾	20½	22¼
D	44¼	48¾	52¼	56¾	60¼	64	68¼	72¼	76
Weight	240	300	400	500	600	800	900	1200	1950
Drain	¾	¾	¾	¾	1	1	1¼	1¼	1½

Results Guaranteed

Figure "I"

Austin Live Steam Angle Steel Receiver
Separator



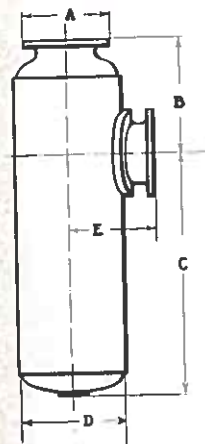
Prices Quoted on Application

Results Guaranteed

Figure "I"
Austin Live Steam Angle Steel Receiver
Separator

THIS separator is designed to meet requirements where conditions of location or piping do not permit of installing a vertical or horizontal pattern. If required, this type of machine can be made with one inlet at top, and either one, two, three or four outlets on side, a proper arrangement of baffle plates being made to secure perfect separation.

Separators of this type have many strong features to commend them, one especially being their very large capacity for storing steam, so that when the engine is overloaded, the cylinder is readily supplied with steam without causing high velocities in the steam line. By this means, the engine runs smooth and develops a maximum of power, due to the use of dry steam. There is no drop in pressure between outlet of separator, or pipe line, and the boilers.



SIZES AND DIMENSIONS IN INCHES

Figure "I"

Sizes	6	8	10	12	14	16	18	20
A	12½	15	17½	20½	23	25½	28	30½
B	18	21	25	29	33	38	41	44
C	25½	32	40	48	56	60	64	68
D	16	18	22	24	26	20	32	36
E	15	17	21	22	24	25	28	31
Weights	495	780	1085	1585	1610	2275	2350	2600
Drains	1	1¼	1½	2	2	2	2½	2½

Figure "M"

Austin Live Steam Vertical Iron Receiver Separator



Figure "M"

Austin Live Steam Vertical Iron Receiver Separator

THIS machine is recommended where larger receiver capacity is desired in vertical separators. The arrangement of baffle plates secures perfect results in the elimination of water from steam. Separation is positive and no opportunity is given by which separated particles may fall into the steam cut-off again and be carried through the outlet.

Our Figure "M" is one of the most popular types in the entire Austin line. It comes nearer adapting itself to the average vertical installation where a high efficiency must be maintained than perhaps any other make of separator the market affords.

Symmetrical in appearance, perfect in principle, carefully made and finished, it goes to the purchaser with a full confidence on our part in its ability to maintain a constant supply of dry steam right at the throttle with a reserve supply for emergencies.



SIZES AND DIMENSIONS IN INCHES

Figure "M"

Sizes	1½	2	2½	3	3½	4	4½	5	6	7	8	10	12	14
A	S. E.	S. E.	7½	8¼	9	10	10½	11	12½	14	15	17½	20½	23
B	16	16	18	19¾	22½	26¾	30½	34	37¼	42¼	48¼	58	64	70
C	5½	5¾	7¾	8	8¾	10½	12	13¼	16	18¾	20	27	31	35
Weights	35	35	115	145	175	240	315	375	515	665	930	1615	2400	3155
Drains	½	½	¾	¾	¾	¾	¾	1	1	1¼	1¼	1½	1½	2

Prices Quoted on Application

Results Guaranteed

Figure "N"

Austin Live Steam Angle Iron Receiver
Separator



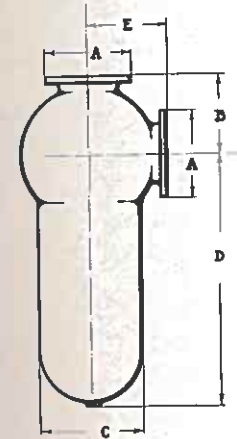
Figure "N"

Austin Live Steam Angle Iron Receiver
Separator

THIS separator is made in sizes from 2½ in. up to 14 in. inclusive. It is constructed of the best grade of iron and is cylindrical in form, making a separator which is at once attractive in appearance, and at the same time allows ample capacity to properly install the different baffle plates necessary for the thorough elimination of water from the steam.

Certain conditions demand angle separators, and the saving in piping, elbows and fittings which they make possible is an important consideration. Withal, the steam is given an easy, natural course, the same as in any other of our separators, so that there is no loss by friction.

It is only necessary to study the design of this machine to understand its efficiency in eliminating water from live steam. Aside from the initial separation that results from the impinging of steam against the baffles, there is, in addition, separation as a result of centrifugal action, by which entrainment is thrown to the side walls of separator and thence drained into the receiver.



SIZES AND DIMENSIONS IN INCHES

Figure "N"

Sizes	2½	3	3½	4	4½	5	6	7	8	10	12	14
A	7½	8¾	9	10	10½	11	12½	14	15	17½	20½	23
B	4¾	5	5½	6½	7	8¼	9	11	11½	15	17	19
C	5¾	6¾	7¾	8¾	10¾	11	13	15	17	21	25½	29½
D	8¼	12	12	16½	20	23	25	28	33½	40	43	46
E	4¾	5	5½	6½	7	8	9	11	11½	15	17	19
Weights	115	145	175	240	315	375	515	665	930	1615	2400	3155
Drains	¾	¾	¾	¾	¾	1	1	1¼	1¼	1½	1½	2

Prices Quoted on Application

Results Guaranteed

Figure "O"

Austin Live Steam Angle Elbow Iron Receiver Separator

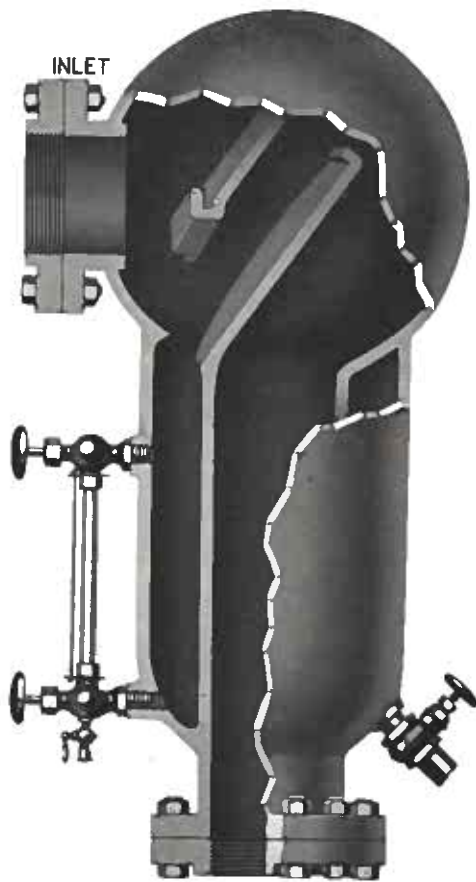
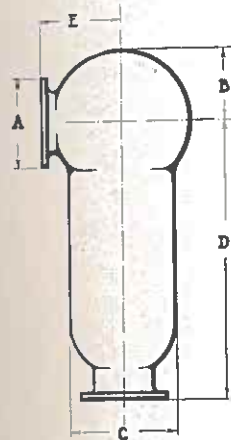


Figure "O"

Austin Live Steam Angle Elbow Iron Receiver Separator

ANGLE separators are used mostly, though not entirely, in engine rooms having low ceilings, in basements, for example, of business buildings erected some years ago which were originally intended for storage purposes. Later on many firms occupying such buildings found it profitable to operate their own electric light plants, and for lack of other space, the engines and dynamos were put into the low basement. In such cases the pipe line is generally only a short distance from the throttle, and as high-speed engines are used, with small clearance in cylinder, it is found essential to install a separator in order to give the engine the dry steam.

To meet such requirements heretofore it has often been necessary to have special separators built to order, and to avoid this necessity the Fig. "O" Austin separator was designed. When installed it takes the place of an elbow so that the benefits of a separator may be had without sacrifice of space and without extra expense for piping.



SIZES AND DIMENSIONS IN INCHES

Figure "O"

Sizes	2½	3	3½	4	4½	5	6	7	8	10	12	14
A	7½	8¼	9	10	10½	11	12½	14	15	17½	20½	23
B	3¼	4	4½	5½	6	6¾	7¾	9¾	10¼	13½	15	17¾
C	5¾	6¾	7¾	8¾	10¾	11	13	15	17	21	25½	29½
D	13¾	14¾	18	19½	23	26	28	31	36½	43	47	49½
E	4¼	5	5½	6½	7	8	9	11	11½	15	17	19
Weights	115	145	175	240	315	375	515	665	930	1615	2400	3155
Drains	¾	¾	¾	¾	¾	1	1	1¼	1¼	1½	1½	2

Prices Quoted on Application

Results Guaranteed

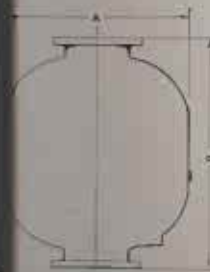
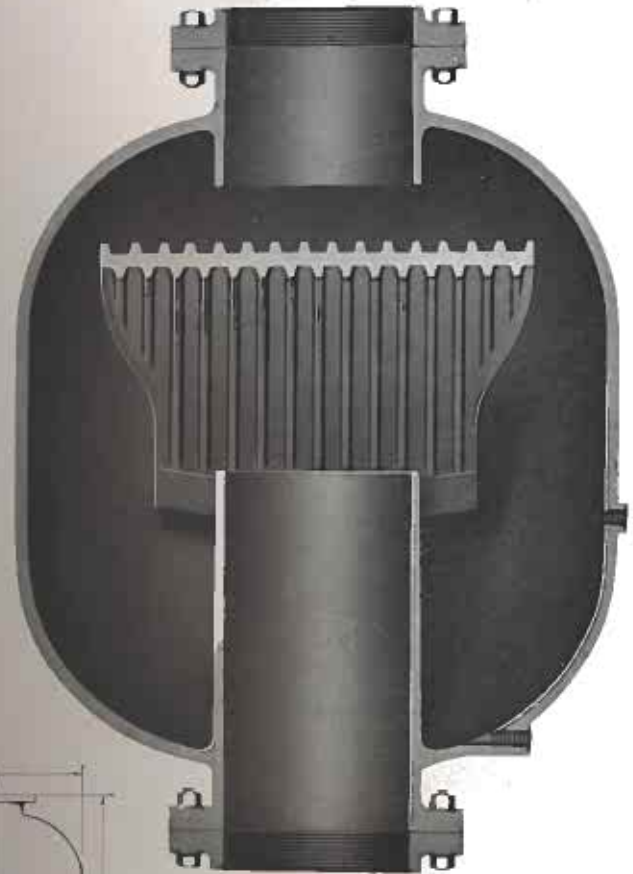
Figure "R"

Austin Vertical Special Oil Separator



Figure "R"

Austin Vertical Special Oil Separator



Embodying all of the essentials for perfect oil separation—large clearance areas, large baffles, proper angles, etc.—the Austin Figure "R" Vertical Oil Separator has, after several years of successful operation in various parts of the country, and under different operating conditions, earned its place beside the well known Fig. "S" Horizontal Oil Separator which has given perfect satisfaction in service since oil separators have been used by the engineering profession.

Sizes	4	5	6	7	8	10
Flange	9	10	11	12½	13½	16
A	15	17	18	24¾	25½	32¾
B	20¾	24¾	28¾	33¾	37⅞	41¾
Drains	1	1¼	1½	1½	1½	1½

Figure "S"

Austin Horizontal Special Oil Separator

SELF CLEANING



Eye bolts are furnished on Fig. "S" Separators in sizes 12" upwards.

All Fig. "S" Separators of sizes 12" and upward are built with close flanges, and stud bolts and nuts are furnished.

Figure "S"

Austin Horizontal Special Oil Separator

SELF CLEANING



A Definite Guarantee.

We guarantee absolutely perfect efficiency in this machine, the latest and most improved oil separator manufactured for the special conditions noted. See page 39.

This guarantee provides for the thorough elimination of oil, grease and impurities from exhaust steam, to such extent that the steam, when condensed, is entirely suitable for boiler use, ice making, the steam laundry, heating systems, or any other purpose for which exhaust steam is employed.

Figure "S"

Austin Horizontal Special Oil Separator

THIS separator fills a need for a machine to be used in connection with engines that are overloaded, where the inadequate capacity of the exhaust pipe for the extra service imposed upon it, results in giving the exhaust steam too high a velocity and makes perfect separation of oil difficult by ordinary oil separators.

In the peculiar flat and oval design of this separator, extremely large internal area is obtained in order to reduce the velocity of steam.

It is found that a large percentage of the oil in exhaust steam gathers upon the lower inner side of the pipe along which it flows under pressure of the steam. Acting upon this fact, we have constructed just inside of the inlet a flanged gutter which catches this oil and permits it to drain down into the receiver. The remaining oil and water held in suspension by the steam, is impinged against the baffle plate which is deeply corrugated with circular grooves as shown in the illustration, all leading to the receiver part of the separator. The outer edge of the baffle is provided with a high flange edge to prevent water from rebounding over the side.

In size the baffle is designed to meet different conditions and to reduce the velocity to a given point necessary for a thorough elimination of the oil. It is so located as to afford all forms of relief for steam passing around it, viz., overshot, undershot and side relief combined.

IN ORDERING, STATE SIZE OF PIPE AND IF POSSIBLE POUNDS OF STEAM USED.

Figure "S"

Austin Horizontal Special Oil Separator

1 1/2" to 48" Inclusive.

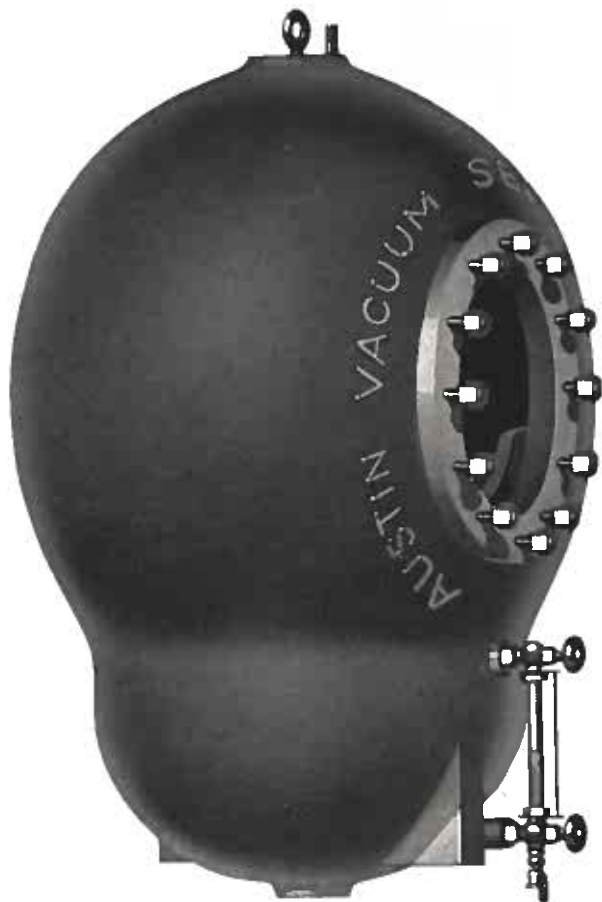
SIZES AND DIMENSIONS IN INCHES

Size Pipe	Diameter Flange	Bolt Circle	No. of Bolts	Face to Face of Flange	Wide	High	Center of Pipe to Top	Size Drip	Weight Lbs.
1 1/2	Serd.			9 7/8	12	15 1/2	6 1/8	3/4	60
2	Serd.			10	12 1/8	15 1/2	6 3/8	3/4	60
2 1/2	7	5 1/2	4 - 5/8	10 1/4	14 1/2	17 3/8	7 1/8	1	150
3	7 1/2	6	4 - 5/8	10 1/2	15	18	7 1/2	1	165
3 1/2	8 1/2	7	4 - 5/8	11	17	20	8 3/8	1	190
4	9	7 1/2	8 - 5/8	12	19	23	9 1/2	1	235
4 1/2	9 1/4	7 3/4	8 - 3/4	13	21	25	10 1/2	1 1/4	290
5	10	8 1/2	8 - 3/4	15	23	27	11 1/2	1 1/4	370
6	11	9 1/2	8 - 3/4	17	25	30	12 1/2	1 1/2	475
7	12 1/2	10 3/4	8 - 3/4	17 1/2	27	33	13 1/2	1 1/2	545
8	13 1/2	11 3/4	8 - 3/4	18	29	36	14 1/2	1 1/2	650
10	16	14 1/4	12 - 7/8	19	32	40	16 1/2	1 1/2	855
12	19	17	12 - 7/8	20	34	42	17 1/2	1 1/2	905
14	21	18 3/4	12 - 1	20	36	43	18 1/2	1 1/2	1050
16	23 1/2	21 1/4	16 - 1	22	40	44	20 1/2	1 1/2	1150
18	25	22 3/4	16 - 1 1/8	24	42	46	21 1/2	1 1/2	1375
20	27 1/2	25	20 - 1 1/8	26	44	49	22 1/2	1 1/2	1475
22	29 1/2	27 1/4	20 - 1 1/4	30	48	55	24 1/2	2	2075
24	32	29 1/2	20 - 1 1/4	33	54	62	27 1/2	2	2500
26	34 1/4	31 3/4	24 - 1 1/4	36	58	68	29 1/2	2	3050
28	36 1/2	34	28 - 1 1/4	38	64	74	32 1/2	2 1/2	4400
30	38 3/4	36	28 - 1 3/8	40	69	80	34 1/2	2 1/2	5650
32	41 3/4	38 1/2	28 - 1 1/2	42	74	86	37 1/2	2 1/2	6150
34	43 3/4	40 1/2	32 - 1 1/2	44	80	93	40 1/2	3	6500
36	48 1/4	45 1/4	32 - 1 5/8	44	90	105	45 1/2	3	7550
40	53	49 1/2	36 - 1 5/8	48	100	116	50 1/2	3	8400
42	57 1/4	53 3/4	40 - 1 5/8	48	106	120	53 1/2	3	9350
48	59 1/2	56	44 - 1 5/8	48	112	129	56 1/2	3	10000

Sizes 12" to 48" are built with close flanges and furnished with stud bolts.

Eye bolts placed on all sizes above 12" inclusive.

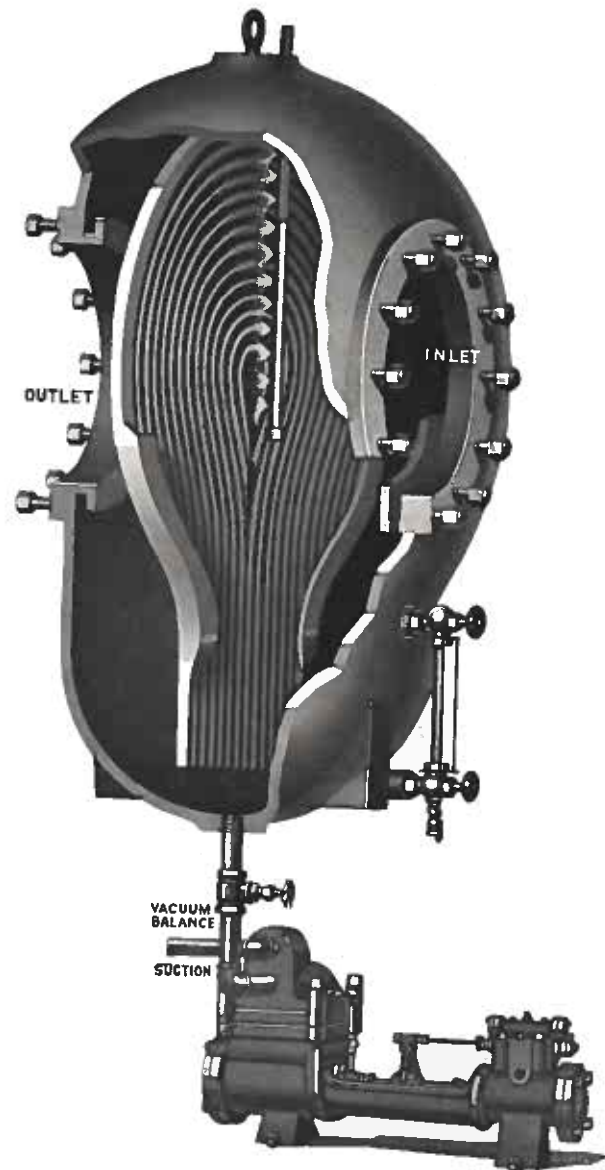
The Austin Figure "V" Horizontal
Vacuum Oil Separator



In writing for prices, intending purchasers are requested to state fully the particulars covering the conditions under which the separator is to be operated, as follows:

SIZE OF EXHAUST PIPE.
INCHES OF VACUUM CARRIED.
POUNDS OF STEAM PER HOUR.

The Austin Figure "V" Horizontal
Vacuum Oil Separator



With Austin Vacuum Pump Connected

We guarantee that the Austin Vacuum Oil Separator will extract the oil from exhaust steam, operating under a vacuum, to such an extent that this steam, when condensed, will be entirely suitable for boiler feed or any purpose for which exhaust steam is used.

Figure "V"

Austin Horizontal Vacuum Oil Separator

SEPARATING oil from exhaust steam operating under a vacuum presents one of the most difficult problems with which designers of separators have had to deal, and as a matter of fact many mechanical engineers are still skeptical regarding the results obtainable from separators intended for this service.

If oil can be entirely extracted from exhaust steam, without impairing the vacuum, they concede the following advantages:

1. A SAVING IN WATER, because the same feed water may be used continuously, with the addition of fresh water to replace loss by leakage, evaporation, etc. This is a saving of great importance in plants whose water supply must be purchased.

2. A SAVING IN FUEL. The water of condensation delivered to the hot well contains a large number of heat units, all of which are saved in returning this water to the boilers.

3. A SAVING IN BOILER REPAIRS, ETC. As before stated, practically pure distilled water is obtained for boiler feed purposes. Being absolutely free from oil and other impurities, this water cannot occasion any boiler troubles due to scale, foaming, leaky tubes, bulged plates or burnt shells, and for like reasons the necessity for frequently cleaning the boilers is also largely avoided.

A Separator That Makes These Advantages Possible

We assert that the principles embodied in the AUSTIN VACUUM OIL SEPARATOR accomplish the results above noted, by insuring absolute separation of oil from exhaust steam, regardless of the quantity of steam per hour passing through separator or the vacuum carried.

This leads to the question of velocity. One of the principle reasons for the imperfect results obtained from oil separators heretofore designed for vacuum service is that no provision has been made in their design for reducing the velocity of the steam current, and without reducing high velocities to a given point, it is utterly impossible to accomplish anything like perfect separation of the oil.

Note the extremely large internal areas in our machine as shown by the view presented on page 71. By this construction we obtain sufficient reduction of velocity in the steam to insure perfect efficiency in separation, by the means described below.

The vacuum remains practically the same at outlet as at inlet of separator.

OPERATION.

A large amount of oil in exhaust steam gathers in the lower inner contour of the pipe, along which it flows under pressure of the steam. This oil is caught by a flange gutter at inlet to separator, but there still remains other oil held in suspension by the steam; and to separate this oil, much of which is in the form of extremely fine particles, a corrugated baffle plate is interposed in the path of the current.

Large area is an important feature in the design of the baffle plate. All of the steam is impinged against it in its course through the separator, the minute drops of oil being held by it until by the addition of other drops they increase in size and are carried around the circular grooves by gravity and the action of the steam, down into the receiver chamber.

These grooves are of ample depth to hold all of the oil, and lead to a common center at the base, preventing any of the oil from being carried over with the steam to the condenser. A high outside projection around the baffle keeps water and oil from being thrown over its edge, and so on out of the separator with the steam.

We have secured in combination with the general design of this separator and the form of the baffle plate, all the good features of overshot, undershot and side relief ports for the steam.

SPRAYING DEVICE

Where very high vacuum is carried we provide this separator with our Patented Spraying Device. By careful experiments we have discovered that the successful operation of an oil separator operating under a vacuum depends upon the capacity of the steam for wetting the baffle plate and inside walls of the separating device. So long as these remain dry, the lubricant is not precipitated thereon, but seems to be repelled. The fine particles of oil striking the dry surfaces rebound and their specific gravity being very little greater than that

of the steam, inertia of mass which is depended upon to eliminate water from steam is too feeble to effect their separation. They are carried along with the current to the condenser, and thence with the feed water enter the boiler; but if the inside of the separating chamber be wet the oily particles adhere, and, by a natural law of diffusion, spread over the inner surface, until the accumulation is drawn by the action of gravity to the bottom of the chamber, whence it is carried out by the drain pipe.

In condensing engines the final pressure of steam in the cylinder is usually considerably greater than it is in the condenser, so that when the exhaust valve opens there is a sudden drop in pressure, the steam expanding into the exhaust pipe and condenser.

Now it is a well established principle in physical science that when steam expands without doing work it becomes superheated. In other words, the temperature of saturation under the condition of pressure in the cylinder, is so much higher than the temperature of saturation under the condition of vacuum in the condenser, that however wet the steam may be in the cylinder the water is at once evaporated by the fall in pressure and the exhaust steam passes to the condenser dry. Hence the failure of the ordinary separator to work when applied to the exhaust pipe of a condensing engine. The cause of the difficulty having been discovered, the remedy is obvious.

The exhaust steam must be changed from its superheated dry condition to a supersaturated or wet condition. To bring about the required change the exhaust steam may be cooled below the temperature of saturation, or sufficient cold water may be added to absorb the excess heat. The quantity of cooling water required will be comparatively small.

Our device is the only one that sprays water directly on the face of the plate, keeping it at all times thoroughly wet, and is more effective than any system of cooling the plate. It provides the only plate that will successfully retain the oil and deliver it to the receiver.

This method of spraying the baffle plate and separating chamber of separators operating under vacuum was first used by us and is fully covered by letters patent. We will not hesitate to prosecute any parties who infringe upon our patent rights in the above device, either by manufacture or use of the same without our authority.

NO GASKETS.

Separator is made all in one casting, avoiding the annoyance and expense which attend the use of large gaskets for joining the parts where separators are made in two halves.

SIZES.

Austin Vacuum Oil Separators are manufactured for use in connection with all sizes of piping and for regular or special service.

VACUUM PUMP.

We recommend the Austin vacuum pump for removing the oil and condensation from vacuum separators because of its special design and adaptation to this service. The pump is constructed under specifications of our own, and so arranged that it can be operated continuously, when the plant is running, without "racing" and regardless of whether or not oil or condensation is flowing into it.

The suction chamber of the Austin pump provides for a balanced vacuum. Condensation, etc., leads to the pump by gravity; the suction valves being inverted and opening downward are sealed by the condensation, etc., the pump therefore being compelled to pull the water and oil away before pumping air does not require as great a vacuum as the main exhaust in order to discharge.

We guarantee this pump to remove successfully all oil and condensation without in the least impairing the vacuum.

SURFACE CONDENSERS.

An Austin Vacuum Oil Separator can be installed in connection with a surface condenser, wherever a limited water supply makes the latter necessary, and the condensed exhaust is used in the boiler.

JET CONDENSERS.

Installed in advance of a jet condenser, the Austin Vacuum Oil Separator extracts the oil so perfectly that the condensed water is entirely suitable for dyeing or other industrial purposes, or it may be discharged into the river or pond from which it was taken, without occasioning complaints in regard to oil contamination.

The Austin
Horizontal Vacuum Oil Separator

SIZES AND DIMENSIONS IN INCHES

Pipe	Diam. of Flanges	Bolt Circle	Stud Bolts	Flange to Flange	Wide	High	Center Pipe to Top	Drip	Weight
8	13½	11¾	8—¾	20	34	42	17½	1½	800
10	16	14¾	12—¾	20	36	43	18½	1½	925
12	19	17	12—¾	22	40	44	20½	1½	1125
14	21	18¾	12—1	24	42	46	21½	1½	1375
16	23½	21¾	16—1	26	44	49	22½	1½	1475
18	25	22¾	16—1½	30	48	55	24½	2	2075
20	27½	25	20—1½	33	54	62	27½	2	2500
22	29½	27¼	20—1¾	36	58	68	29½	2	3050
24	32	29½	20—1¾	38	64	74	32½	2½	4000
26	34¼	31¾	24—1¾	40	72	80	34½	2½	5650
28	36½	34	28—1¾	42	74	86	37½	2½	6000
30	38¾	36	28—1¾	44	80	93	40½	3	6500
34	43¾	40½	32—1½	44	90	105	45½	3	7500
38	48¾	45¼	32—1½	48	100	116	50½	3	8300
40	50¾	47¼	36—1½	48	106	120	53½	3	9500
42	53	49½	36—1½	48	112	129	56½	3	10500

Standard Flanges

American Standard, effective Jan. 1, 1914

Size Pipe	Diameter of Flanges	Thickness of Flanges	Diameter of Bolt Circle	No. Bolts	Size Bolts
2"	6"	5/8"	4¾"	4	5/8"
2½"	7"	11/16"	5½"	4	5/8"
3"	7½"	3/4"	6"	4	5/8"
3½"	8½"	13/16"	7"	4	5/8"
4"	9"	15/16"	7½"	8	5/8"
4½"	9¼"	15/16"	7¾"	8	¾"
5"	10"	15/16"	8½"	8	¾"
6"	11"	1"	9½"	8	¾"
7"	12½"	1 1/16"	10¾"	8	¾"
8"	13½"	1 1/8"	11¾"	8	¾"
9"	15"	1 1/8"	13¼"	12	¾"
10"	16"	1 1/8"	14¼"	12	¾"
12"	19"	1 1/4"	17"	12	7/8"
14"	21"	1 3/8"	18¾"	12	1"

Extra Heavy Duty Flanges

Effective Jan. 1, 1914

Size Pipe	Diameter of Flanges	Thickness of Flanges	Diameter of Bolt Circle	No. Bolts	Size Bolts
2"	6½"	7/8"	5"	4	5/8"
2½"	7½"	1"	5¾"	4	¾"
3"	8¾"	1 1/8"	6½"	8	¾"
3½"	9"	1 1/8"	7¼"	8	¾"
4"	10"	1 1/4"	7¾"	8	¾"
4½"	10½"	1 1/8"	8½"	8	¾"
5"	11"	1 3/8"	9¼"	8	¾"
6"	12½"	1 7/8"	10½"	12	¾"
7"	14"	1 1/2"	11¾"	12	¾"
8"	15"	1 5/8"	13"	12	7/8"
9"	16¼"	1 3/4"	14"	12	7/8"
10"	17½"	1 7/8"	15¼"	16	1"
12"	20½"	2"	17¾"	16	1"
14"	23"	2 1/8"	20¼"	20	1 1/8"
15"	24½"	2 1/8"	21½"	20	1 1/8"
16"	25½"	2 1/4"	22½"	20	1 1/4"
18"	28"	2 3/8"	24¾"	24	1 1/4"
20"	30½"	2 1/2"	27"	24	1 1/2"
22"	33"	2 5/8"	29¼"	24	1 3/8"
24"	36"	2 3/4"	32"	24	1 5/8"

**SPECIAL
SEPARATORS**

On this page are shown a few special designs out of the many that have been built by the Wright - Austin Company extending over a quarter century.



Boiler Feed Regulators

Sizes of
"Murray" Boiler Feed Regulators

The diameter of your feed line to boiler governs the size of regulator. "Murray" Regulators are made in the following sizes:

- $\frac{3}{4}$ " , 1" , $1\frac{1}{4}$ " , $1\frac{1}{2}$ " , 2" , $2\frac{1}{2}$ " and 3"
- with screwed ends
- and in
- 2" , $2\frac{1}{2}$ " and 3"
- with flanged ends

Auxiliary Columns

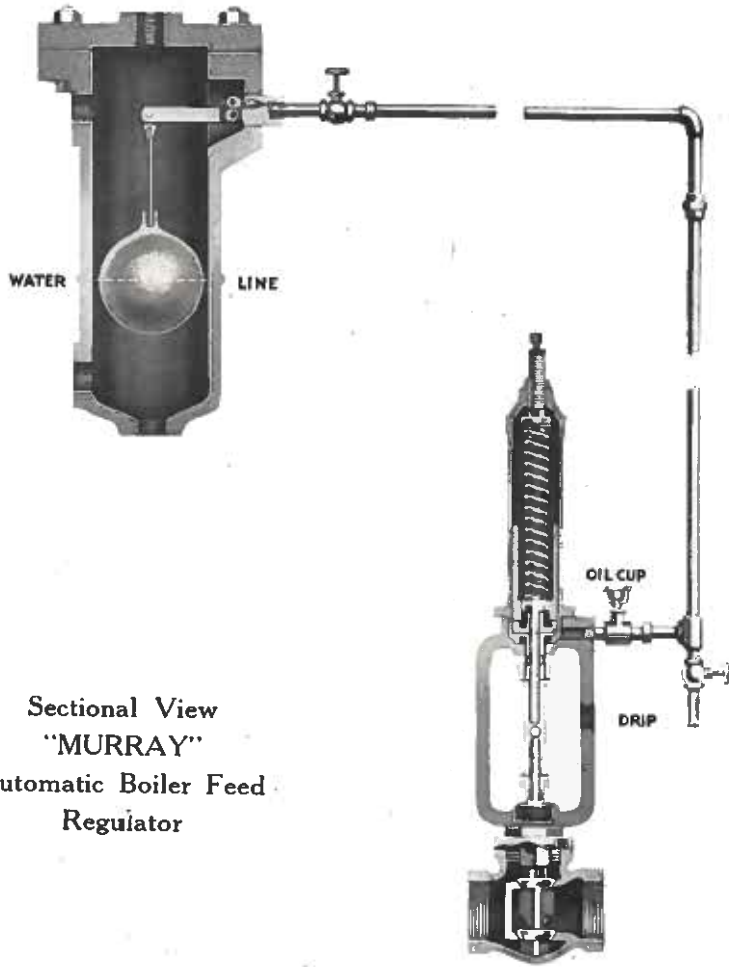
Sizes Furnished with
"Murray" Boiler Feed Regulators

No. 9—9" between steam and water connections on side.

No. 14—Ordinarily the No. 9 column is adapted to any conditions. However, as a matter of convenience in making pipe connections we furnish the No. 14 column when the distance between water and steam connections of main water column is 18 inches or over.

Connections can be made to either top and bottom, or side openings.

Boiler Feed Regulators



Sectional View
"MURRAY"
Automatic Boiler Feed
Regulator

Five Different Types of Valve Bodies for "Murray" Regulators



Flanged Body Plain



Flanged Body with Monel
Metal Seats



Plain Screwed Body



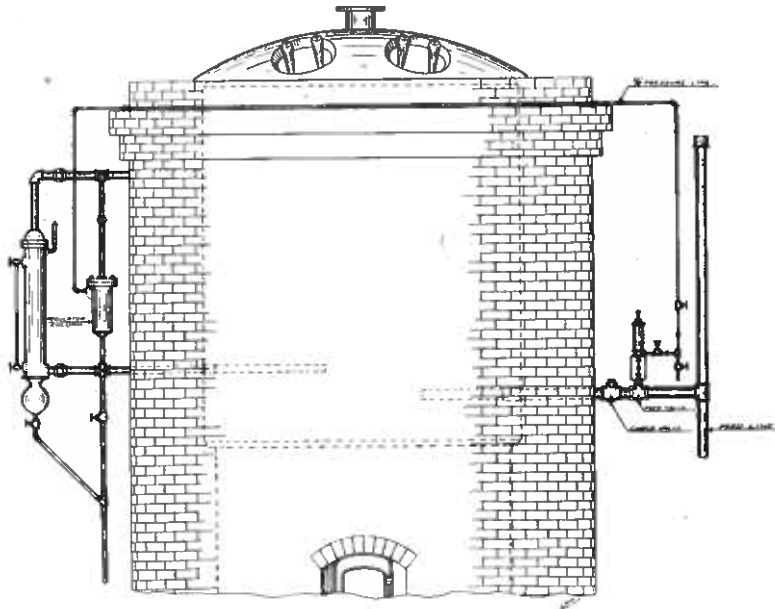
Screwed Body with By-Pass
Attached



Screwed Body with By-Pass At-
tachment and Renewable
Monel Metal Seats

Regulating valves can be furnished in any of the above types of bodies. When writing for prices, specify the type of body wanted, otherwise quotations will cover body with By-Pass attachment.

Boiler Feed Regulators



“MURRAY”

AUTOMATIC BOILER FEED REGULATOR

Applied to a
WICKES VERTICAL BOILER

THE REASON WHY

—in Condensed Form—

THE FIXED LEVEL IS A CORRECT THEORY

SAFETY and economy in the feeding of boilers requires that the water level be maintained at or near center gauge.

In order to insure safe operation of the boiler, firemen and water tenders alike fill the boilers too full, as a protection against explosion from low water. The temperature is lowered and a corresponding decrease in boiler efficiency results. Thus safety is obtained at the expense of economy.

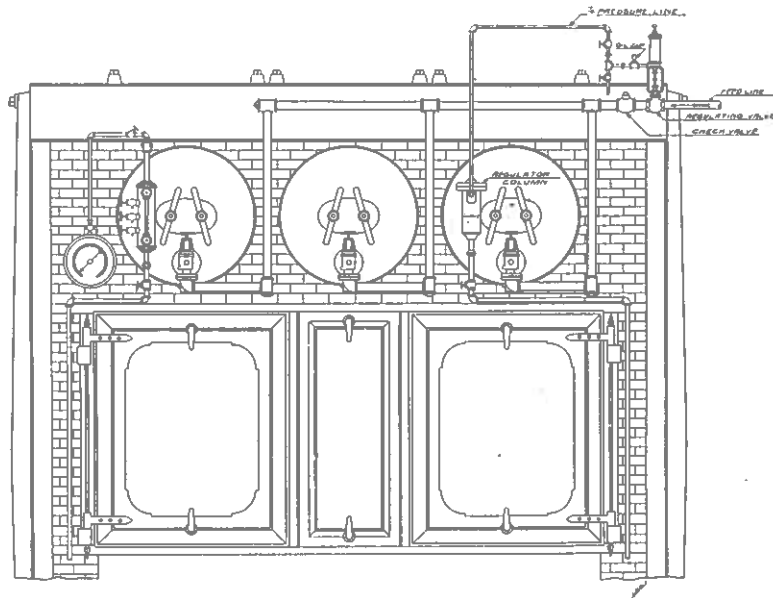
True economy is obtained only under conditions of AUTOMATIC regulation of the feed water maintaining a uniform water level.

It is obvious that the condition of maximum disengaging surface occurs only when the water line is held at middle gauge, for at this point we have both MAXIMUM HEATING SURFACE and STEAM SPACE.

Automatic Regulation of feed water is rapidly superseding the wasteful and antiquated method of Hand Regulation. In all lines of industry mechanical forces are replacing human efforts wherever possible inasmuch as the former has proven to be far more certain and reliable than the latter.

Automatic Regulation shows a saving of fuel over hand regulation of from 5 to 15% depending on type and form of boiler, amount of evaporation per square foot of heating surface and general local conditions.

Boiler Feed Regulators



"MURRAY"

AUTOMATIC BOILER FEED REGULATOR

Applied to

BABCOCK AND WILCOX BOILER

Installation and Operation
"MURRAY"
Automatic Boiler Feed Regulator

INSTALLATION

In the installation of "Murray" Automatic Boiler Feed Regulators the regulator valve is placed in feed water line to boiler and outside of check valve with the arrow on outside of body of valve pointing in direction of flow of water to boiler. The auxiliary column is connected to steam and water connections of the main water column and is regulated as to height by the cast iron ring around the column which indicates the water level at which point the valve is just about to open. This ring should be placed on a level with the middle gauge cock or normal water level as the regulator will start to take power immediately the water falls below this level and will again close off when reaching this point.

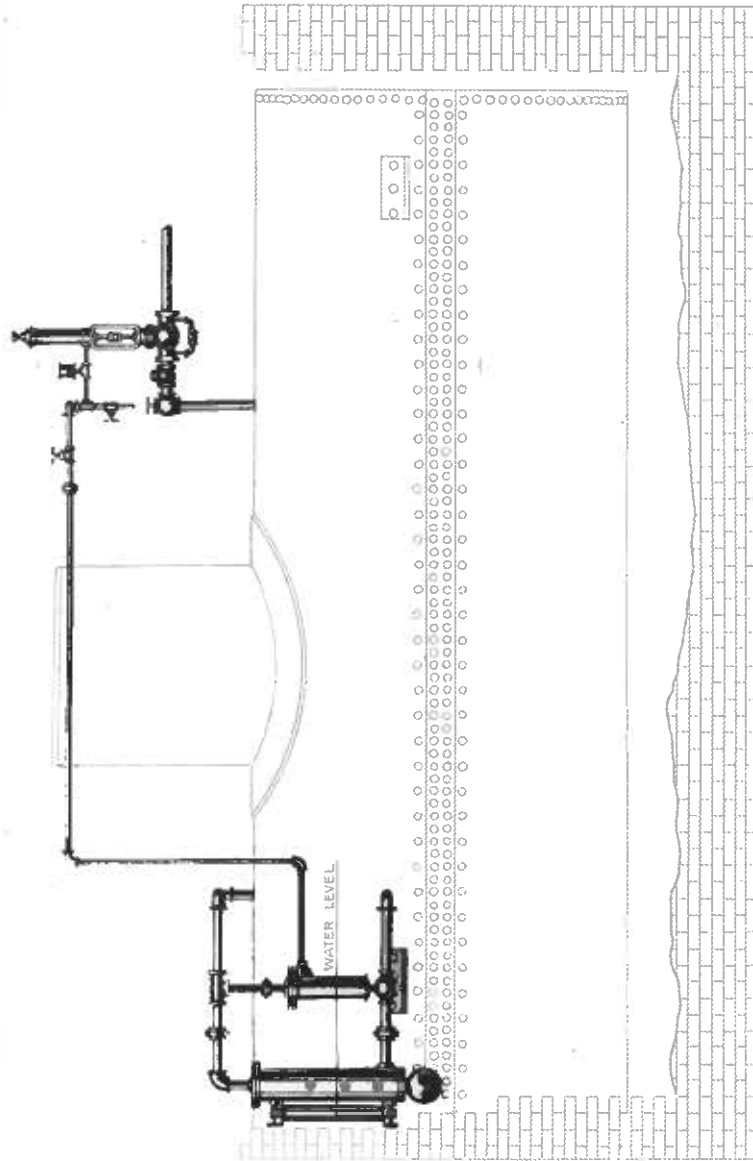
The Regulating Valve is connected to needle valve in column by a $\frac{1}{4}$ inch pipe through which steam is transmitted to cylinder of regulating valve. Extreme care should be taken in connecting up the pipe to see that all dirt and pipe chips are blown out before permitting steam to enter cylinder. As this cylinder and plunger are very accurately ground to a fit, dirt may cut them very quickly. A few drops of oil should be admitted each morning, or on the beginning of each turn to keep cylinder properly lubricated.

OPERATION

In operation, whenever the water in the boiler falls below its normal level, the float in the column opens the needle valve and admits steam through the $\frac{1}{4}$ inch pipe into the lower end of the cylinder, forcing in the piston against the tension of the spring and through the piston rod, opening the regulating valve.

This action admits the water through the feed pipe into the boiler until the normal level is restored, when the needle valve will again close by the rising of the float, shutting off the steam from the $\frac{1}{4}$ inch pipe thus releasing the spring which closes the regulating valve.

Care should be taken not to draw stuffing box too tight in top of valves or bottom of cylinder. As these stuffing boxes are made large and deep it is better to supply them with fresh packing than to attempt to jamb the nuts too tight which would prevent easy operation of stems and this makes the valve sluggish or locks it entirely.



“Murray” Automatic Boiler Feed Regulator Applied to a
Return Tubular Boiler

BOILER FEED

HOW TO REGULATE IT

AUTOMATIC or self operating equipment as far as modern facilities permit, is essential to the safe, economical and efficient operation of the power plant.

The manufacturer who knows costs never hesitates at a reasonable initial expense if convinced that the installation of a claimed “cost reducing device” will prove its merits in his plant.

Automatically controlled Boiler Feed IS ESSENTIAL to the safe and efficient operation of a modern boiler.

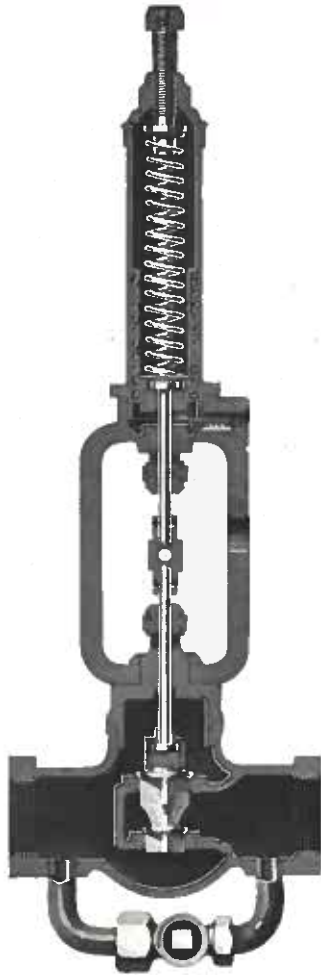
Simplicity is a desirable feature in any mechanical device—The Power Plant Specialty with few working parts appeals to the engineer—It costs little to maintain.

Feeding water to a boiler is pretty serious business. You can't afford to take chances. A large majority of boiler accidents are due to some defect in feeding.

Uniform water level is, in the opinion of a large majority of mechanical and practical engineers, a vital essential to the principles of boiler operation.

Safety is the first insurance you want in a boiler. High or low water in a boiler is an impossibility when a correctly designed and manufactured Fixed Level Boiler Feed Regulator is constantly on guard. Varying water levels with the load required is a dangerous practice. Too much water means wet steam with its accompanying risk of cylinder explosions. For well known reasons too little water is even worse.

Economy in boiler operation is just as essential to low cost of manufacture of your product as judgment in the purchase of raw material. You can't generate steam quickly and with a minimum of fuel if you are going to permit too much boiler feed. Wet steam in an engine is like diluted stimulant in a weak body. You've got to give your engine “full strength” steam if you want the best service it is capable of rendering. Boiler and engine repairs are reduced to a minimum when uniform boiler feed is practiced.



"MURRAY"

AUTOMATIC BOILER FEED REGULATING VALVE

With By-Pass and Renewable Seats

BOILER FEED

HOW TO REGULATE IT

(Continued)

SAFETY and economy spells efficiency; confidence in the security of a boiler coupled with a knowledge that—given proper fuel, you're generating the highest quality steam at the lowest possible cost with maximum efficiency.

The substitution of "Automatic" for "Hand" feed is almost accomplished, at least in all plants where competition necessitates rock bottom costs. Automatic feed is being substituted in all plants where there is a full realization of the danger of hand feed.

The "Murray" Automatic Boiler Feed Regulator is the simplest, most efficient means of safe and dependable boiler feed you can enjoy according to the testimony of many leading engineers who know from actual experience with it.

The "Murray" is a "uniform level" regulator. Its use insures the operation of your boilers and engines at full capacity with the least expense and the reduction to a minimum of all possibility of accident and disability.

The middle gauge is the desirable point of water level in a boiler. The "Murray" Regulator keeps it there regardless of how hard or easy your boiler operates.

The "Murray" Regulator feeds just enough water to keep the level uniform; fast when you "crowd her," slowly when you run light. There is no straining in your boilers with a "Murray" in control of your feed water.

The fact that a "Murray" Regulator will effect a saving of 5 to 15% in fuel alone is proof of a high uniform temperature as compared with the irregularity of hand feeding.

A "Murray" Regulator insures you against the ill effects of priming. It guarantees dry steam regardless of how hard you force the boiler and that means no cylinder head blow outs.

"MURRAY"

AUTOMATIC BOILER FEED REGULATOR

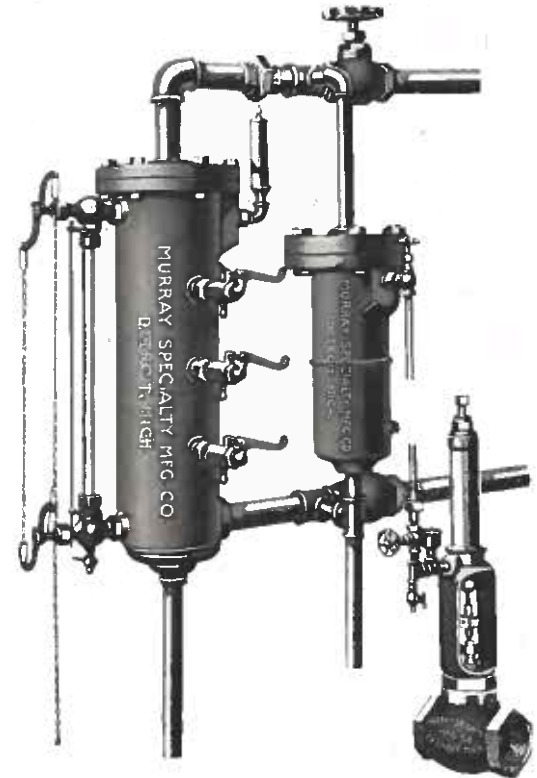
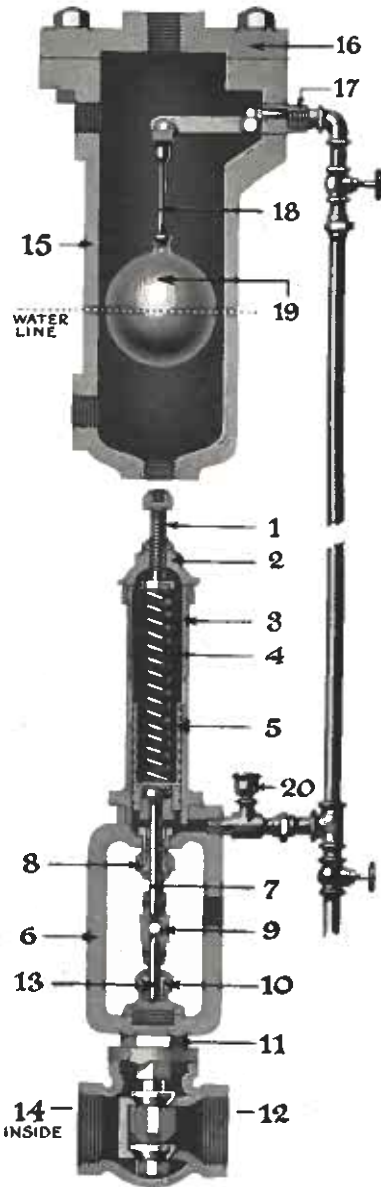
List of Parts

PARTS ON REGULATOR

- | | |
|-----|-----------------------------|
| No. | |
| 1 | Spring Bolt |
| 2 | Cylinder Cap |
| 3 | Cylinder |
| 4 | Spring |
| 5 | Plunger |
| 6 | Yoke |
| 7 | Plunger Stem |
| 8 | Upper Packing Nut and Gland |
| 9 | Center Piece |
| 10 | Lower Packing Nut and Gland |
| 11 | Valve Top |
| 12 | Valve Body |
| 13 | Disc Stem |
| 14 | Disc Inside of Body |
| 20 | Oil Cup |

PARTS ON REGULATOR COLUMN

- | | |
|----|------------------------|
| 15 | Column |
| 16 | Cover |
| 17 | Needle Valve and Lever |
| 18 | Float Rod |
| 19 | Float |

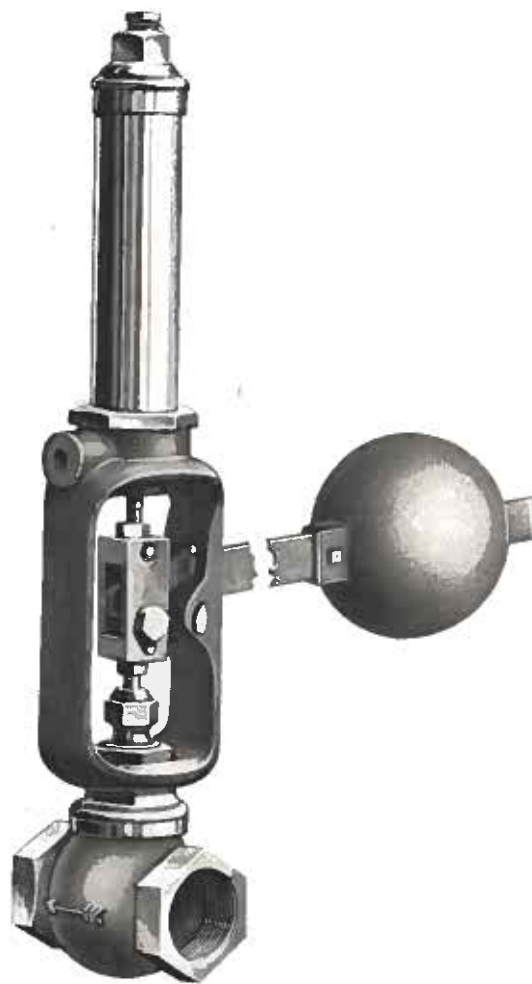


"MURRAY"

AUTOMATIC BOILER FEED REGULATOR

Complete with

ALARM WATER COLUMN

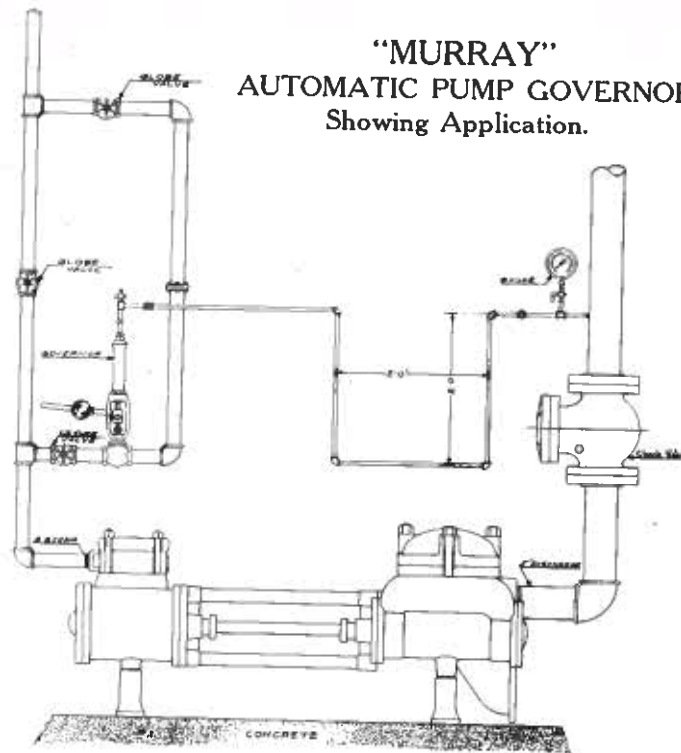


"MURRAY"
AUTOMATIC PUMP GOVERNOR

With Weight Arm

Furnished in Angle Type Valve Bodies in Flanged and Screwed Patterns

"MURRAY"
AUTOMATIC PUMP GOVERNOR
Showing Application.



WHEN using an Automatic Boiler Feed Regulator, a uniform pressure of water in feed line to boiler is absolutely necessary. The "Murray" Automatic Pump Governor will never fail to maintain uniform pressure.

The "Murray" Governor is simplicity itself. There is nothing about it to get out of order, and it can be used on water works, air, fire, boiler feed or elevator pumps.

The governor is placed in the steam supply pipe to the pump and connected by a 1/4-inch pipe to the discharge system, thereby regulating the exact amount of steam to the requirements of the pump.

Adjustment is made by moving the ball on the lever. Any pressure may be maintained. 10 lbs. excess in the feed line over that of steam pressure is considered necessary for proper operation.

SIZES AND PRICE LIST OF "MURRAY" PUMP GOVERNORS

3/4"	\$27.00	1 1/2"	\$41.00
1 "	29.00	2 "	48.00
1 1/4"	33.00	2 1/2"	56.00
3 "			\$66.00

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