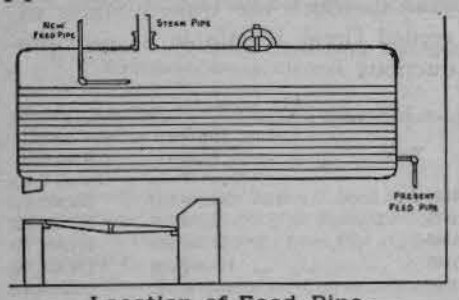
# LETTERS

Correspondence from practical men upon topics of interest relating to power is especially solicited for these columns. The editors, however, do not hold themselves responsible in any way for opinions that may be expressed.

## Location of Feed-Pipe.

In the boiler I have charge of the feed-pipe enters the bottom of the boiler at




Location of Feed-Pipe.

the rear in the combustion chamber. I have constant trouble with the connections inside the brick-work and am anxious to change it.

I enclose a rough sketch showing where I propose to introduce it into the top of the boiler. What is the opinion of your readers as regards the advisability of this location? Do they think it would have a tendency to make the steam wet, having the feed discharge so near the steam outlet? The design of the boiler renders it impossible to run the feed-pipe through the front head.

If anyone can advise any better location, I should greatly appreciate it. If I should extend the pipe towards the rear of the boiler, would it do any harm to let it rest on the tops of the tubes?

R. J. COURTMANCHE.

## Pump Valve Trouble.

In my plant we have a duplex compound elevator pump. It was running along one day, smoothly, as usual, when suddenly it commenced to pound quite badly. Upon opening up the water end, one of the rubber suction valves was found to have a hole clear through it.

Can anyone give the cause? What would have happened had the valve been on the discharge side? The pump had plenty of water. H. O. ALTICK.

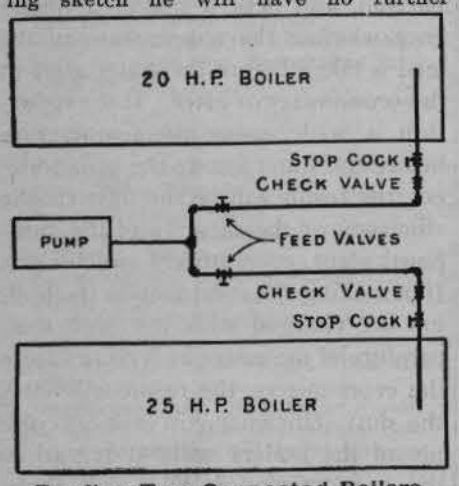
## Selling Exhaust Steam.

Noting your request in the February issue regarding the sale of exhaust steam I wish to state that the Cleveland Electric Railway Co., Cleveland, Ohio, have during the past year been delivering exhaust steam to an adjoining salt works for evaporating purposes with very satisfactory results. The steam is carried through a large conduit about 1,000 feet in length from nine 30 × 48 single Corliss engines and one 40 × 68 × 60 cross-compound engine. The plant is to be increased with one more engine, 36 × 60 × 60 cross-compound, to be connected the same way.

ROBERT M. HUGHES.

## Feeding Two Connected Boilers—Piping a Globe Valve.

If "California Reader" will connect up his feed lines according to the accompanying sketch he will have no further




Feeding Two Connected Boilers.

trouble. It is not practical to feed two or more boilers without a separate feed valve on each, and he must regulate his valves according to the amount of water evaporated in each, it being a well-known fact that the boiler with the low fire will get the water, even though the steam pipes are connected. One pump will feed any number of boilers, within its capacity, if connected up in this manner.

In regard to "Piping a Globe Valve," Joseph McDonald is right. J. W. E.

## Central Station Heating Plants.

In the February issue you ask for information as to where exhaust steam is used for heating buildings at a distance. I have had occasion to investigate the matter rather closely, and give a list of such plants in the Northwest that I know of, and the system used, as far as I know. Of course this list is in no way complete:

| | |
|---|---|
| Mason City, Iowa | Yaryan hot water system (heated by exhaust steam). |
| Perry, Iowa | " " " " |
| Missouri Valley, Iowa | " " " " |
| Iowa Falls, " | Evans-Almirall hot water system. |
| Red Oak, " | American District Steam Co. (Exhaust steam.) |
| Burlington, " | " " " " " " |
| Davenport, " | " " " " " " |
| Ottumwa, " | " " " " " " |
| Boone, " | " " " " " " |
| Grinnell, " | Exhaust steam used direct. (Home made.) |
| Parkersburg, " | " " " " " " |
| Eagle Grove, " | " " " " " " |
| Ackley, " | " " " " " " |
| Spencer " | Yaryan hot water. |
| La Crosse, Wis | " " " |
| Kenosha, " | American District Steam Co. |
| Springfield, Ill | " " " " |
| Danville, " | " " " " |
| Taylorville, " | Yaryan hot water. |
| Mattoon, " | American District Steam Co. |
| Grand Rapids, Mich | " " " " |
| Terre Haute, Ind | Yaryan hot water. |
| La Porte, " | American District Steam Co. |
| St. Joseph, Mo | " " " " |
| Topeka, Kans | |

All these are what are called central station heating plants, using exhaust steam from electric plants.

C. C. HAMMOND.

We note your request to hear from central stations who are disposing of their exhaust steam for heating purposes, and send you some information about our plant at Red Oak, Iowa.

The system we use is the Evans exhaust hot water heating system, installed under the direction of Evans, Almirall & Co. The steam after being used in the engine cylinder, is exhausted through a feed water heater, and from the heater is conducted to another heater similar to a surface condenser; the steam is here partially condensed and gives up its heat to the water which is circulated through the system by centrifugal pumps. The balance of the exhaust goes free. It has been found in zero weather that the water returning to the station is only 9 degrees cooler than that leaving.

The pipes are laid 3 feet under the surface and surrounded with an insulation of wood and corrugated paper.

RED OAK ELECTRIC CO.

In your issue of February the question was asked, where is exhaust steam used for commercial heating purposes? In reply will say that our company has built these plants in about 150 of the principal cities of the United States, and many of the smaller towns, and could furnish a list to those interested in the subject.

We are in receipt of a letter from the Erie, Pa., company, from which we quote as follows:

"Steam has been a great success again this winter. As the natural gas gave out during the cold weather, it has been a great boon for us, and there is lots of additional business in sight for the coming year. Our men are out now soliciting for customers along the prospective extensions of over a mile, and we think we will be ready to place orders for these extensions before the end of next week."

The above is illustrative of one of the advantages of district steam heating over heating by natural gas.

AMERICAN DISTRICT STEAM CO.

## Piping a Globe Valve.

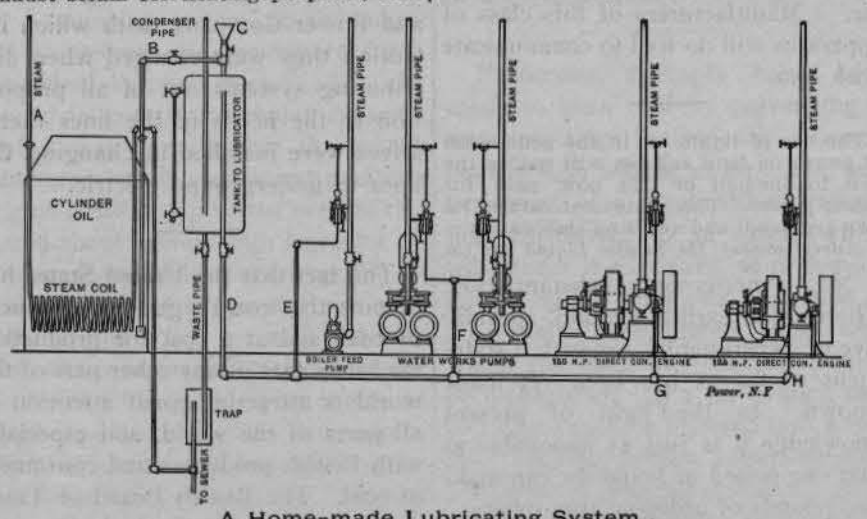
It is the general practice to place the valve so that the pressure comes under the seat, so that packing may be put in around the stem without shutting off your steam line between the boiler and valve. I think Joseph McDonald is right.

C. B. RISLEY.

## A Home-made Lubricating System.

The accompanying sketch shows the method of lubricating the engines and pumps arranged by myself at the Edinburg Water & Light Plant, Edinburg, Ind. An oil tank is used, which is kept warm by means of a steam coil, *A*. Alongside of this tank, but slightly elevated, is an oil reservoir connected to the oil tank by means of the pipe *B*. At the bottom of the reservoir is a drain pipe connected to a trap to prevent air sucking in. This forms a siphon and by closing all the connections to the oil tank and the lubricator and opening the valves in the waste pipe and suction, the oil is siphoned into the reservoir as the condensed water passes out, the relative heights being indicated by the glass gage at the side. The funnel at *C* may also be used for filling by hand if desired. *D* is the oil feed pipe which has a connection at *E* for the boiler feed pump and at *F* for the water works pumps and *G* and *H* for the direct connected engines. These branch pipes connect to Detroit sight feed lubricators, which are located on the steam pipes, as shown. The condensing pipe on each lubricator is not used when the system is in operation, but I have the condensing pipes connected, and by shutting off the tank connection the lubricators may be worked independently in case of obstruction in the passages from the tank system. This has been in use for some time, and is a perfect success and no oil is wasted. Of course, the pipes are always kept full of oil from the main reservoir.

C. B. RISLEY.

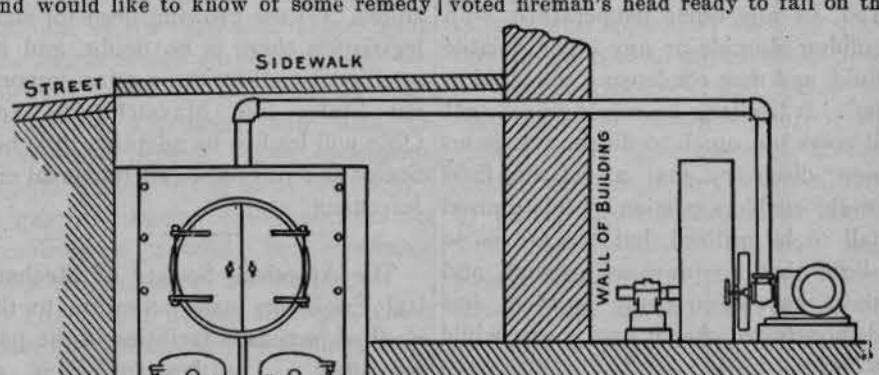



A Home-made Lubricating System.

## Vibrating Boiler.

I am troubled with a vibrating boiler and would like to know of some remedy for same. The boiler is 66 inches diameter, 16 feet in length. Engine is a Buckeye 10×14 high speed; the steam pipe is perfectly stationary, but the boiler vibrates very seriously, so much that the brick setting is opening up. There is no apparent reason for this, as the boiler is well set and everything is new, having been in operation but one year. It is not pushed for steam. It is set between two walls in which there is no vibration. Sketch shows general arrangement of boiler and engine.

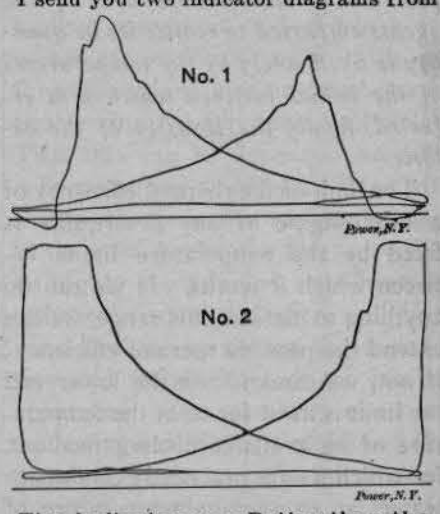
EDWARD D. BEISER.




Vibrating Boiler.

## The Indicator was Better than the Expert.

I send you two indicator diagrams from




The Indicator was Better than the Expert.

a 10 × 30 Corliss engine, running 100 revolutions.

The engine had been running over, and an expert was called in to reverse the motion so it would run under. He set the valves by marks, etc., and pronounced it all right. The owners could not understand why they had to carry 100 pounds of steam to do so little work. An indicator was procured and the diagram No. 1 was the result. The valves were then properly set as per diagram No. 2. The engine now runs easily on 60 pounds of steam. E. T. ABBOTT.

## Overhanging and Flush Boiler Fronts.

Mr. W. H. Wakeman inquires in the February issue as to what advantage the overhanging boiler has over the flush fronts. I should say it had none. In fact Mr. Wakeman has not mentioned all the evils of such a class of boiler. Some will say, of course, that there is no arch to keep up in them and are better on that account, but with a good casting to put the bricks on, the danger of the arch falling down in the flush fronts is reduced to a minimum. I saw one case where perhaps the overhanging boiler was an advantage to somebody. It was in a sawmill and the tubes leaked so badly that the fireman could not put any fuel in the furnace without getting the hot water all over him and they just had to get the boiler repaired where, if it had been a flush front, they would never have done so. With the overhanging boiler the air gets between the shell and brickwork in spite of all, the front end of tubes must be cooler than if they were further back like in the flush front, and this must be a loss. You cannot keep any firebrick over top of doors as there is not sufficient width, and if the doors happen to be shut a little hard, down they come. In moving these boilers the smoke box is a continuation of the shell and you just have to handle that front end with care or you bend the smoke box, thus straining the joint where the flue sheet is riveted to shell. Last, but by no means least, is the ponderous door which on these boilers has to be lifted up and propped with a stick or pulled up with a block and tackle and on, say a 72-inch boiler, there is a nice little door suspended over the devoted fireman's head ready to fall on the least provocation, thus making it absolutely dangerous. However, these boilers are very seldom put in now, all being flush fronts, a fact that speaks for itself, and is not in favor of the overhanging front. W. A. MATTHEWS.