

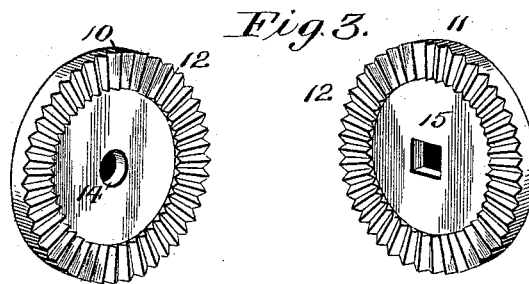
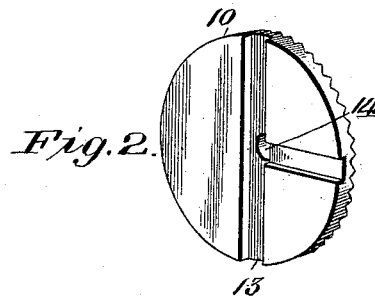
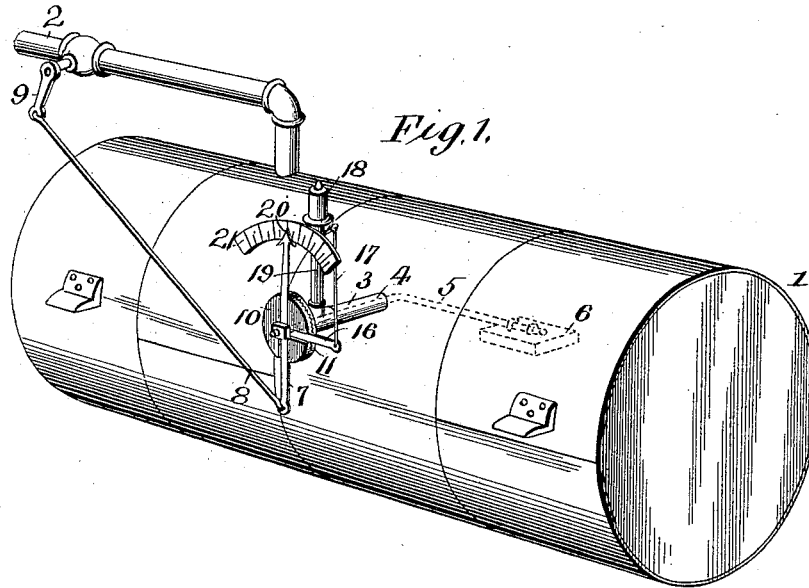
No. 607,286.

Patented July 12, 1898.

J. H. SHARP.
AUTOMATIC BOILER FEEDER.

(Application filed Feb. 2, 1897.)

(No Model.)



WITNESSES
Jos. C. Atack
Am. Doughter

INVENTOR
Joshua H. Sharp.
By John H. Hetherburn
Attorney

UNITED STATES PATENT OFFICE.

JOSHUA H. SHARP, OF MADISONVILLE, TEXAS.

AUTOMATIC BOILER-FEEDER.

SPECIFICATION forming part of Letters Patent No. 607,286, dated July 12, 1898.

Application filed February 2, 1897. Serial No. 621,614. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA H. SHARP, a citizen of the United States, residing at Madisonville, in the county of Madison and State of Texas, have invented certain new and useful Improvements in Automatic Boiler-Feeders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to automatic boiler-feeders, and has for its object to provide simple, novel, and efficient means whereby the flow of the feed-water to the boiler may be automatically regulated, at the same time providing for the maintenance of the water-level in the boiler at two or more gages.

The invention also contemplates the employment of a steam-whistle, by means of which, in the event of the failure of the pump to work, the lowering of the water in the boiler beyond the safety-point may be audibly indicated.

The detailed objects and advantages of the invention will be pointed out in the course of the ensuing description.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a boiler equipped with the automatic feed mechanism. Fig. 2 is an enlarged detail view of one of the disks providing for the adjustment of the mechanism to different water-levels. Fig. 3 is a similar view of the opposing disks, showing the means for adjusting both disks with relation to each other.

Similar numerals of reference designate corresponding parts in the different figures of the drawings.

Referring to the drawings, 1 designates the boiler of any usual or preferred construction, and 2 the steam-supply pipe which communicates therewith.

3 designates a pipe or tube which extends through one side of the boiler and is fixedly secured thereto and through which passes a rock-shaft 4, provided at its inner end with

the angular extension 5, to the free end of which is secured a float 6, adapted to rest upon the water contained in the boiler and adapted to operate the rock-shaft 4 as the water rises or falls.

Connected to the outer end of the rock-shaft 4 is a lever 7, to the outer end of which is pivotally connected one end of the link or rod 8, which extends to and connects with the stem 9 of the valve arranged in and controlling the supply-pipe 2, or said rod 8 may connect with the pump for throwing the latter into and out of operation. The connection between the rock-shaft 4 and lever 7 consists of two disks 10 and 11, which are arranged flatwise and have their adjacent meeting surfaces serrated or ribbed, as indicated at 12, so as to engage positively with each other and prevent their relative rotation when firmly clamped together. The outer disk 10 is grooved, as indicated at 13, to receive the inner end of the lever 7, and is provided with a round central opening 14, by which it is rotatably mounted upon the rock-shaft 4. The inner disk 11 is provided with a square bore or opening 15, adapted to fit upon a correspondingly-squared portion of the rock-shaft 4, whereby said inner disk is caused to turn with the rock-shaft. The outer disk 10 may be held upon the shaft 4 by means of a nut screwed upon the outer extremity of said shaft, the said nut serving to bind the two disks firmly upon each other, while at the same time loosening said end the outer disk may be turned with relation to the inner disk for adjusting the relative angles of the levers 5 and 7. The outer disk 10 also carries a radially-projecting arm 16, from which a cord or other flexible connection 17 extends upwardly to the stem of the whistle 18, arranged at the upper end of the vertical tubular extension 19 of the pipe or tube 3. In the event of the valve-controlling mechanism getting out of order the float 6 in falling will vibrate the arm 16, thereby drawing upon the connection 17 and operating the stem of the whistle, so as to audibly indicate that the water in the boiler has descended below the safety-point. The outer disk 10 also carries an indicator 20, the free end of which moves in front of the segmental plate or dial 21, having numerals represented thereon and denoting the level of the water in the boiler,

thus enabling the attendant to ascertain at a glance the height of the water.

In operation the float 6 rises and falls with the water in the boiler and in descending operates the rock-shaft 4 and lever 7, thus reciprocating the rod or link 8 and opening the valve in the supply-pipe or starting the pump. As the water enters the boiler and the water-level therein rises the float 6 is elevated, and thus through the medium of the interposed connections referred to either closes the valve of the supply-pipe or throws the pump out of operation, as the case may be.

As before stated, in the event of the valve or pump controlling mechanism getting out of order the connection 17 will open the steam-port to the whistle 18, causing the latter to be sounded and warning the attendant.

By means of the disks 10 and 11 the relative angles of the cranks 5 and 7 may be adjusted for enabling any desired water-level to be maintained in the boiler in a manner that will be readily understood.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a steam-boiler, of a rock-shaft extending into the boiler, a float

connected to the inner end of said rock-shaft for operating the latter, a crank loose on the rock-shaft, means for operatively connecting said crank with a valve, toothed engaging disks one fast on the shaft and the other fast to the crank, and provision for effecting relative adjustment of said disks for varying the angle of the crank, substantially as and for the purpose described.

2. The combination with a steam-boiler, of a rock-shaft passing through the side of the boiler, a float connected to the inner end of said rock-shaft for turning the latter, a disk fast on the outer end of said shaft, a second disk rotatably mounted on said shaft, the said disks being provided on their adjacent surfaces with interlocking ribs or serrations, a crank carried by said outer disk, and a connection between said crank and the water-supply-controlling mechanism, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSHUA H. SHARP.

Witnesses:

W. W. SHARP,
A. C. BRADFORD.