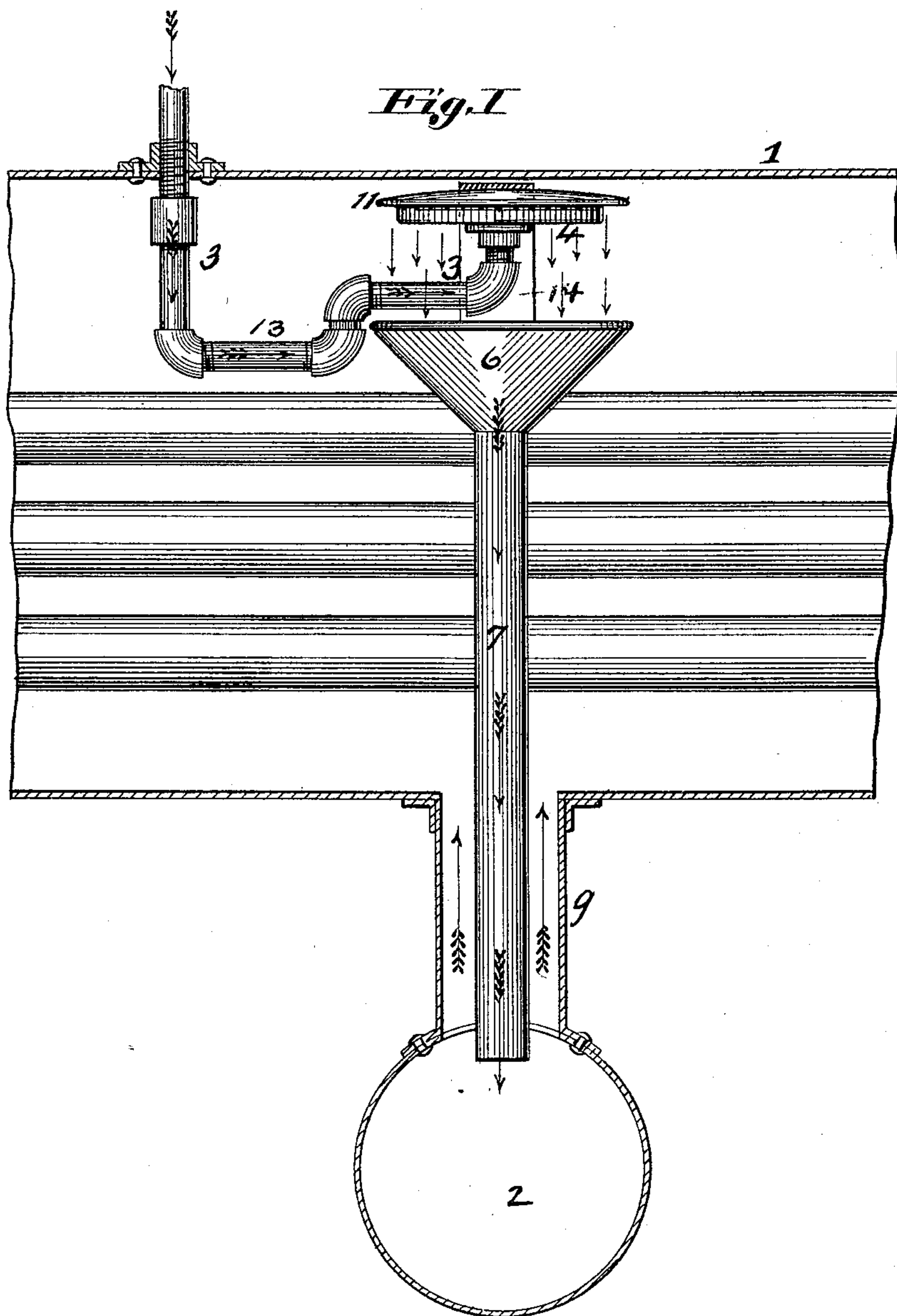


(No Model.)

W. L. MAPEL.  
FEED WATER HEATER.

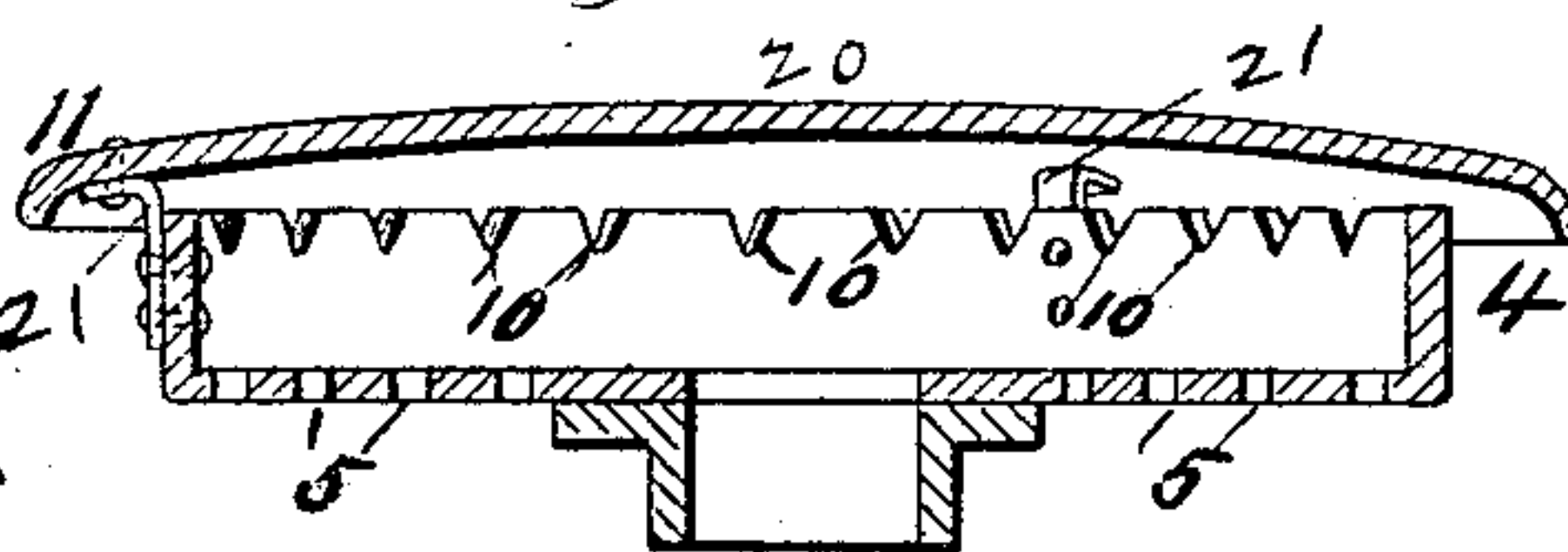
No. 369,950.

Patented Sept. 13, 1887.



*Attest:*  
*F. A. Hopkins*  
*Emma Arthur*

*Fig. 2.*



*Inventor:*  
*Wm L. Mapel*  
*By Knight Bros*  
*Atty*

# UNITED STATES PATENT OFFICE.

WILLIAM L. MAPEL, OF ST. LOUIS, MISSOURI.

## FEED-WATER HEATER.

SPECIFICATION forming part of Letters Patent No. 369,950, dated September 13, 1887.

Application filed March 28, 1887. Serial No. 232,722. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM L. MAPEL, of the city of St. Louis, in the State of Missouri, have invented certain new and useful  
5 Improvements in Feed - Water Heaters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

10 Figure 1 is an elevation or side view of my improved feeder, showing part of a boiler in section and flues in elevation. Fig. 2 is an enlarged section through the spray-cap.

My invention relates to a feeder for steam-  
15 boilers; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents part of a steam-boiler; 2, the mud-drum; and 3  
20 the feed-pipe leading into the boiler, preferably from the top.

On the end of the pipe 3 is a cup or tank having a number of openings, 5, in its bottom, through which the water runs and falls in a  
25 spray into a funnel, 6, which may be suspended from the said cup by bracket 14, which directs the water into a pipe, 7, that conveys it down into the mud-drum 2, the drum being placed below the boiler, as usual, and connected there-  
30 to by a pipe, 9.

The pipe 9 is larger than the pipe 7 and surrounds it, so that the water, after descending into the drum and depositing the sediment therein, ascends up into the boiler. With this  
35 arrangement the sediment is deposited into the mud-drum instead of collecting in the boiler and on the tubes or flues. In addition to the holes or perforations 5 in the bottom of the cup or tank 4 there may also be holes  
40 made just beneath a marginal flange, 11, on the top 20 of the cup, and the water that escapes here will run down the sides of the cup, which, being heated by the steam in the boiler, warms the water. The water is also warmed

as it falls in a spray through the space between 45 the cup and funnel, and is still further warmed as it passes through the funnel and pipe 7. The portion 13 of the pipe 3 forms a trap, which, always being filled with water, prevents steam entering the pipe 3, which is ob- 50 jectionable.

The top or cap 20 of the cup is secured to the body by brackets 21 riveted thereto, and which hold the cap up off the body, as shown in Fig. 2. The object of this is that should 55 the holes 5 become stopped up the water will flow freely out over the upper edges of the cup and through the perforations 10.

I claim as my invention—

1. In a boiler-feeder, the combination, with 60 a boiler having a mud-drum, of the feed-pipe, distributing-cup, funnel, and pipe 7, the cup having perforations 5, notches 10, and a cover, 20, having downturned portion 11, extending below the level of said notches, substantially 65 as set forth.

2. In a boiler-feeder, the combination of the feed-pipe and a cup above and on the end of the pipe, the former being bent to form a trap, 13, substantially as and for the purpose set 70 forth.

3. In combination with a boiler having a mud-drum, a feed-pipe, a distributing-cup connected to and situated above the extremity of said feed-pipe, whereby water flows from bot- 75 tom to top, a funnel located beneath said distributing-cup and terminating in a pipe extending downwardly into the mud-drum, as herein shown and described.

4. In a feed-water heater, the combination 80 of feed-pipe 3, trap 13, distributing-cup 4, bracket 14, funnel 6, and pipe 7, arranged as herein set forth.

WILLIAM L. MAPEL.

In presence of—

JAS. E. KNIGHT,  
EDW. S. KNIGHT.