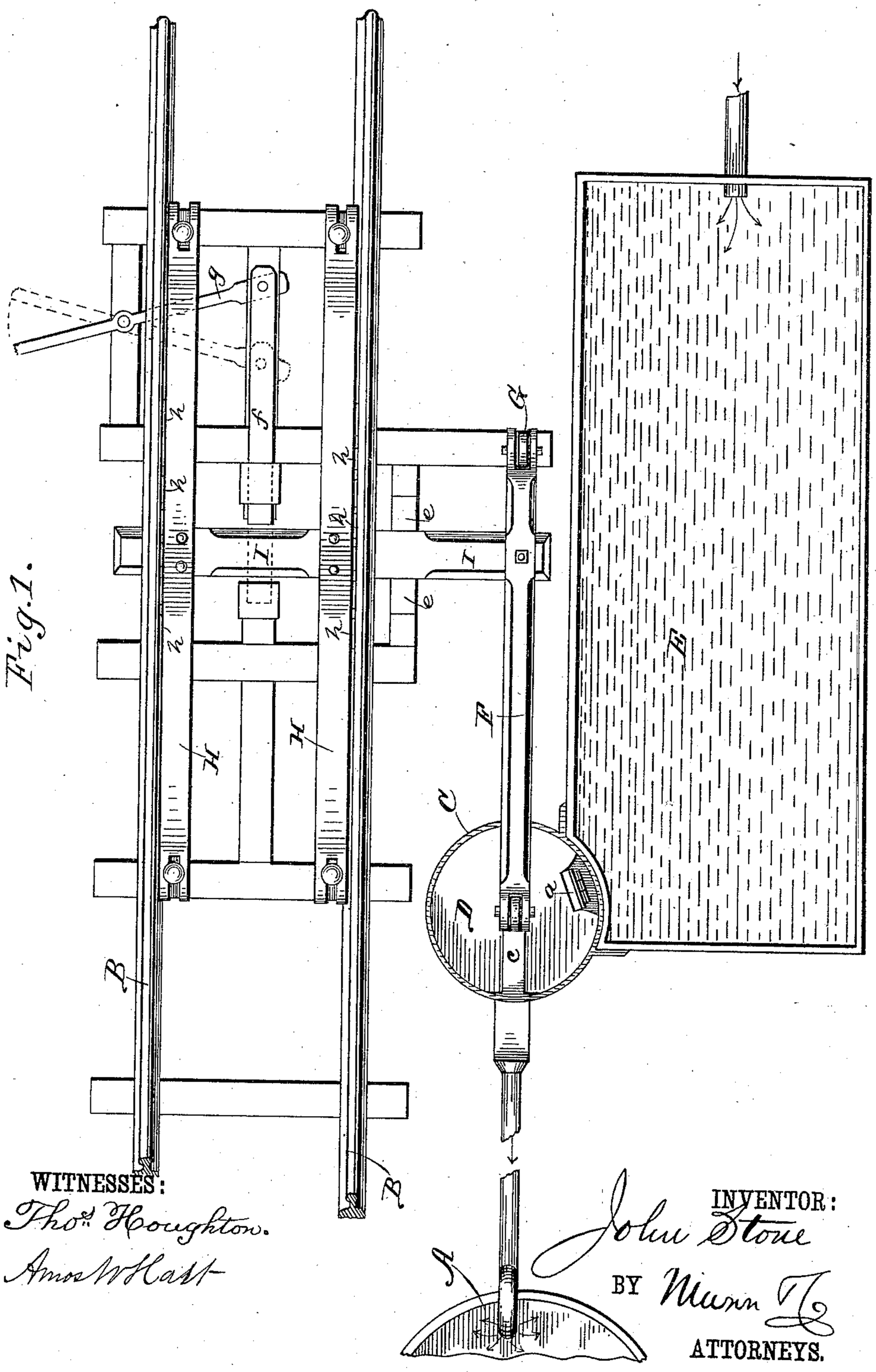
(No Model.)

2 Sheets—Sheet 1.

J. STONE.

RAILROAD SUPPLY TANK.

No. 335,851. Patented Feb. 9, 1886.



WITNESSES:
Thos. Houghton.
Amos W. Hastt

INVENTOR:
John Stone
BY Munn & Co
ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

J. STONE.

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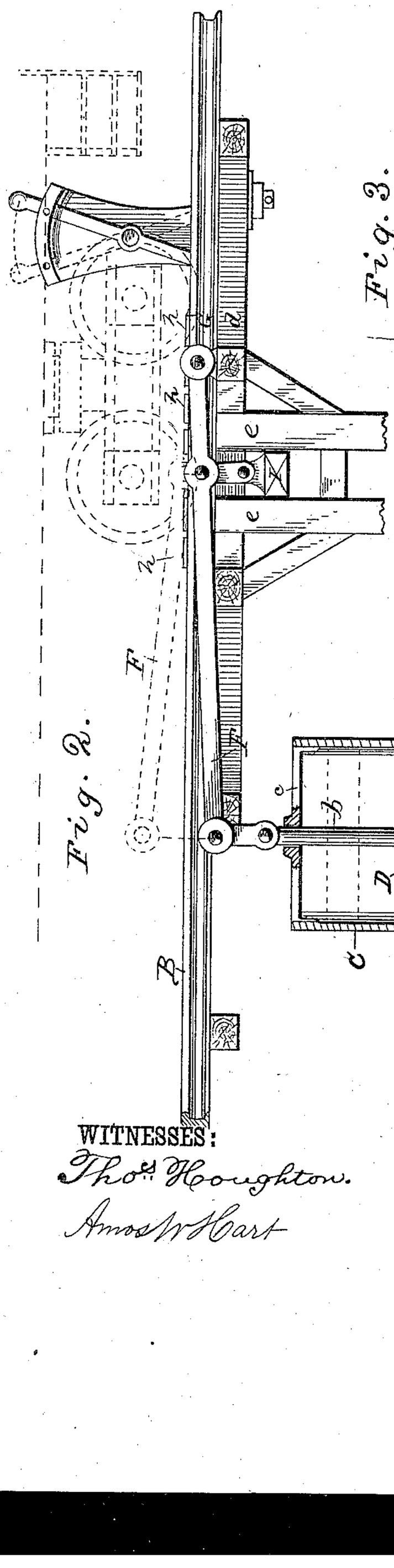

Fig. 2.

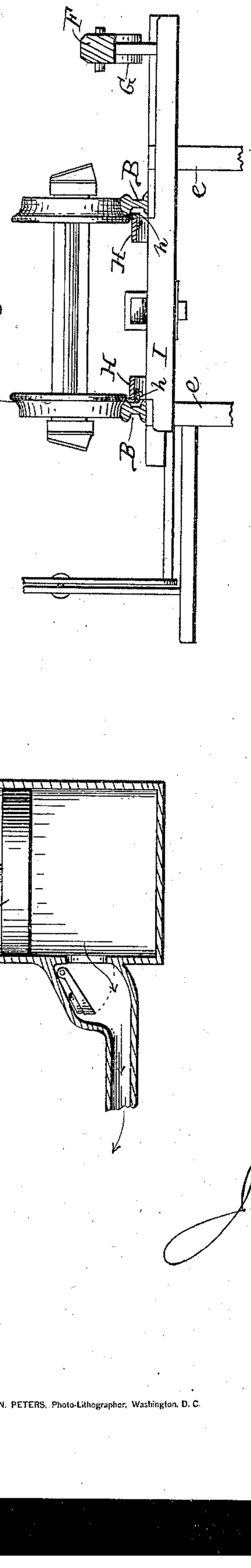

Fig. 3.

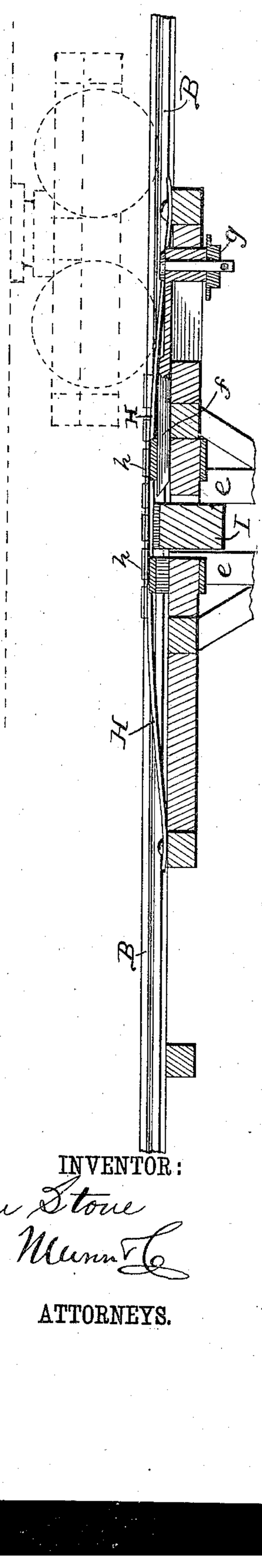

Fig. 4.

WITNESSES:

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Amos W. Hart

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UNITED STATES PATENT OFFICE.

JOHN STONE, OF PLATTSBURG, MISSOURI.

RAILROAD SUPPLY-TANK.

SPECIFICATION forming part of Letters Patent No. 335,851, dated February 9, 1886.

Application filed September 29, 1385. Serial No. 178,596. (No model.)

To all whom it may concern:

Be it known that I, JOHN STONE, a citizen of the United States, residing at Plattsburg, in the county of Clinton and State of Missouri, have invented a new and useful Improvement in Railway Supply-Tanks, of which the following is a specification.

My invention is an improvement in apparatus for elevating water into a tank from which locomotives take their supply. It is more particularly an improvement in the class of apparatus which is operated automatically by the passage of a train over the track.

My invention pertains to the construction and arrangement of that part of the apparatus which the train-wheels act on, and which in turn operates the pump that forces water into the tank.

In the accompanying drawings, Figure 1 is a plan view of the apparatus. Fig. 2 is mainly a side view, part being in section. Fig. 3 is a cross-section. Fig. 4 is a longitudinal section.

The letter A indicates the tank into which water is to be elevated. It is located beside the track-rails B B and at the required distance above them for supplying locomotives, stock-cars, &c.

Water is forced into the tank A by means of a pump consisting of a large cylinder, C, and piston D. The water is received in said cylinder C from a reservoir, E, a suitable valve, *a*, being arranged, as shown, to prevent reflow into the latter. This portion of the apparatus has been employed before, and I make no claim to the combination of any of its parts.

I will now describe, with the necessary detail, the construction and operation of the portion of the apparatus embodying my invention.

The piston-rod *b* is jointed and works in a suitable guide, *c*. To its upper end is attached a lever, F, whose inner end is pivoted in a rigid frame, G, fixed on the ends of the ties *d* or other suitable support placed alongside the track B. It is obvious that if the lever F is depressed the piston D will also be forced down and water thereby elevated into the tank A. For this purpose I employ the levers H and the transverse bar I, to which they are attached. The levers are formed of thin plates of steel and curved upwardly. There may be two or more, but in this instance I show two, and these are arranged between and parallel to the rails, one lever being contiguous to each of the latter, so that the flanges of locomotive and car wheels will come in contact with and depress them. The levers are, in fact, long convex plate-springs, and the combination of great length and elasticity thus obtained is highly important, for the reason that they allow the pressure of the train-wheels to be applied gradually, and hence the apparatus may be operated by a train moving at considerable speed, whereas in former apparatus of this class the train-wheels come in relatively abrupt contact with the depressible portion, and hence the speed required to be greatly reduced in order to avoid breaking the apparatus. In addition to this feature I leave the ends of the spring-levers H free, so that they slide on the ties when a train passes. The bar I is placed beneath the rails and levers, and the latter are rigidly attached to it at the middle of their length. The bar moves vertically between guides *e*, which may consist of posts set vertical in the ground and held rigidly parallel. The extended end of the bar I projects beneath the piston-lever F, and is linked to it near its fulcrum, as shown in Fig. 2. Thus both bar and lever have the same movement up and down, and the distance through which the bar moves is multiplied by the lever, thus forcing the piston down correspondingly far.

It will be seen that the weight of a passing train gradually depresses spring-levers H, which in turn bear down the bar I and operate the pump, as indicated by dotted lines, Fig. 2. So soon as the last wheels of the train begin to pass off the levers H, the latter begin to rise and of course raise the bar I with them, and the water simultaneously enters the cylinder through the valved orifice and forces up the piston and assists in again elevating the outer end of lever F, so that the apparatus is put in normal position for renewed operation.

In case a train runs very slowly the apparatus operates once—that is to say, the piston is depressed once for each passage of a truck over it; but if the speed of the train is sufficiently high the springs will be depressed but once.

The tank A may sometimes become overfull, and at times it may be necessary to arrest the operation of the pumping apparatus. To this end I provide a locking device consisting of a bar, *f*, and lever *g*. The bar *f* is located mid-

way between the rails B, and slides in keepers, while the lever *g* is loosely connected with it and pivoted so that when vibrated it will slide the bar *f* on or off the transverse bar I. The front end of said locking-bar is beveled on the under side to adapt it to more easily ride over bar I. The locking may be effected when a train passes, since the springs H are then depressed.

To enable hand-cars to pass safely over the springs I provide the latter with vertical flanges *h*. The same are formed of short pieces of angle-iron, bolted or riveted to the outer edges of the springs and projecting upward between the springs and rails, so as to act as fenders or guides for hand-car wheels to prevent lateral displacement.

I do not claim the combination with the ordinary track-rails of depressible spring-supported rails or bars, and a lever or levers arranged transversely beneath said track-rails and connected with a pumping apparatus, since I am aware it is not new.

What I claim is—

1. The combination, with a pump and railroad-rails, of the long upwardly-curved spring-levers H H, arranged parallel to the track-rails, having their ends free, and the transverse bar I, to which said levers are rigidly attached at their middles, all as shown and described, to operate as specified.

2. The combination of the long upwardly-curved spring-levers H H, the transverse bar I, rigidly attached to them, and the lever F, beneath which said bar projects and to which it is linked, the piston-rod, the piston, cylinder, and tank, all as shown and described.

3. The combination, with the rails, springs, and pumping apparatus proper, of the lever F and bar I, the latter being attached to the springs and to the lever at a point between its fulcrum and the point of connection with the piston, as shown and described, whereby the downward movement of the bar causes a like but greater deflection of the lever, as specified.

4. The combination of the sliding locking-bar and its pivoted lever, with the transverse bar I, the springs H, and pumping apparatus, all as shown and described.

5. The springs H H, provided with a series of short angle-iron guard-plates, *h*, which are riveted thereto and project vertically, as herein shown and described.

JOHN STONE.

Witnesses:
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SOLON C. KEMON.