

No. 622,524.

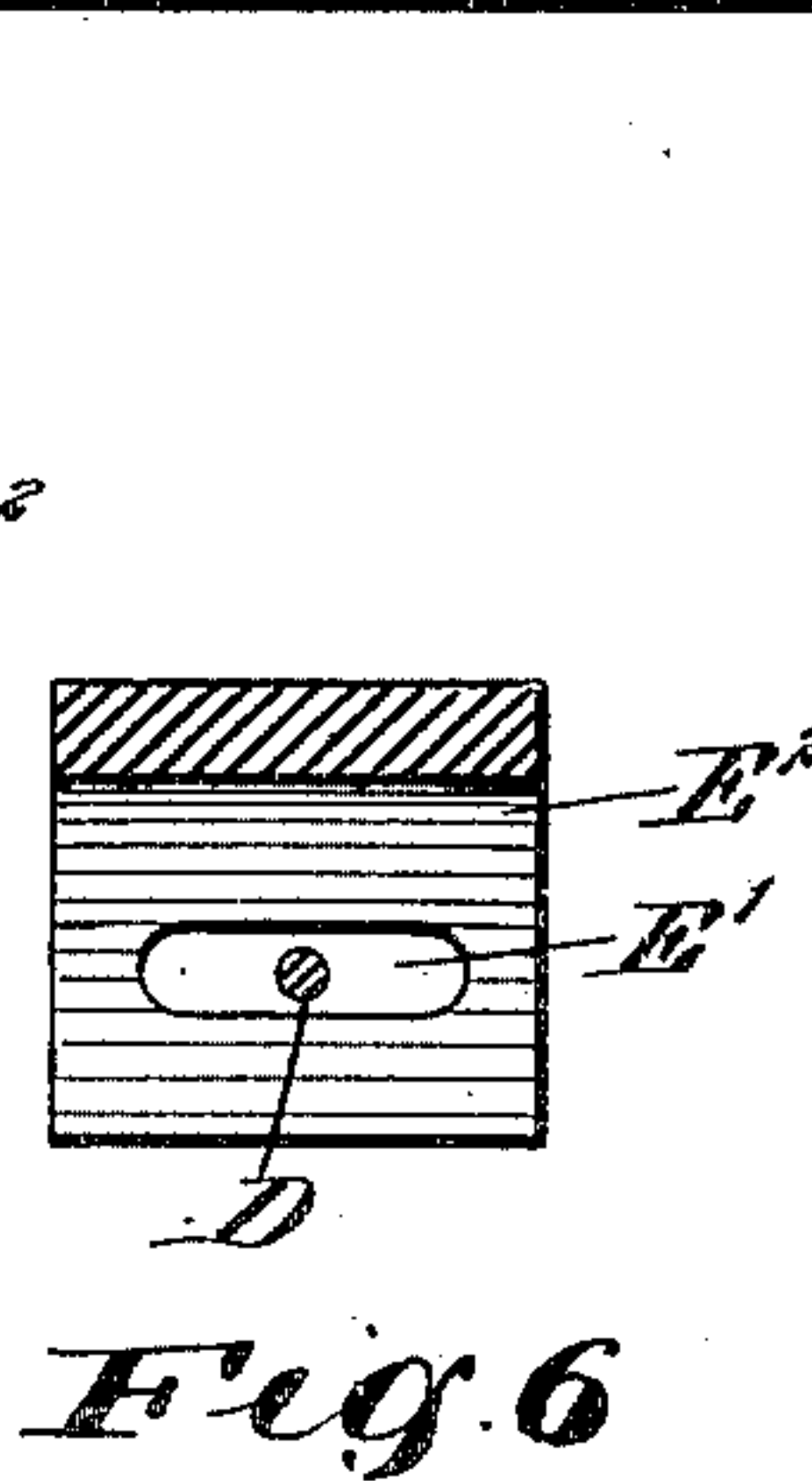
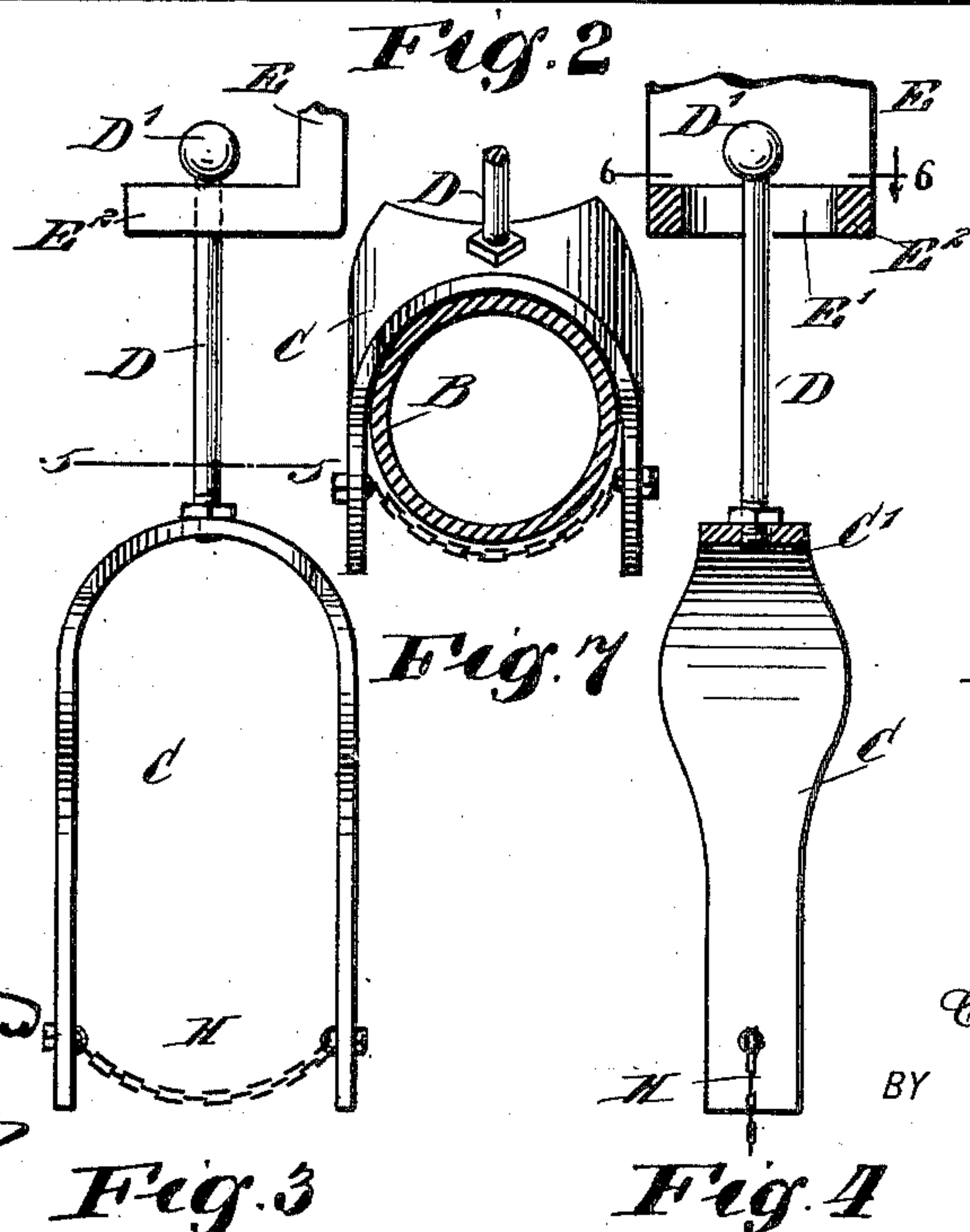
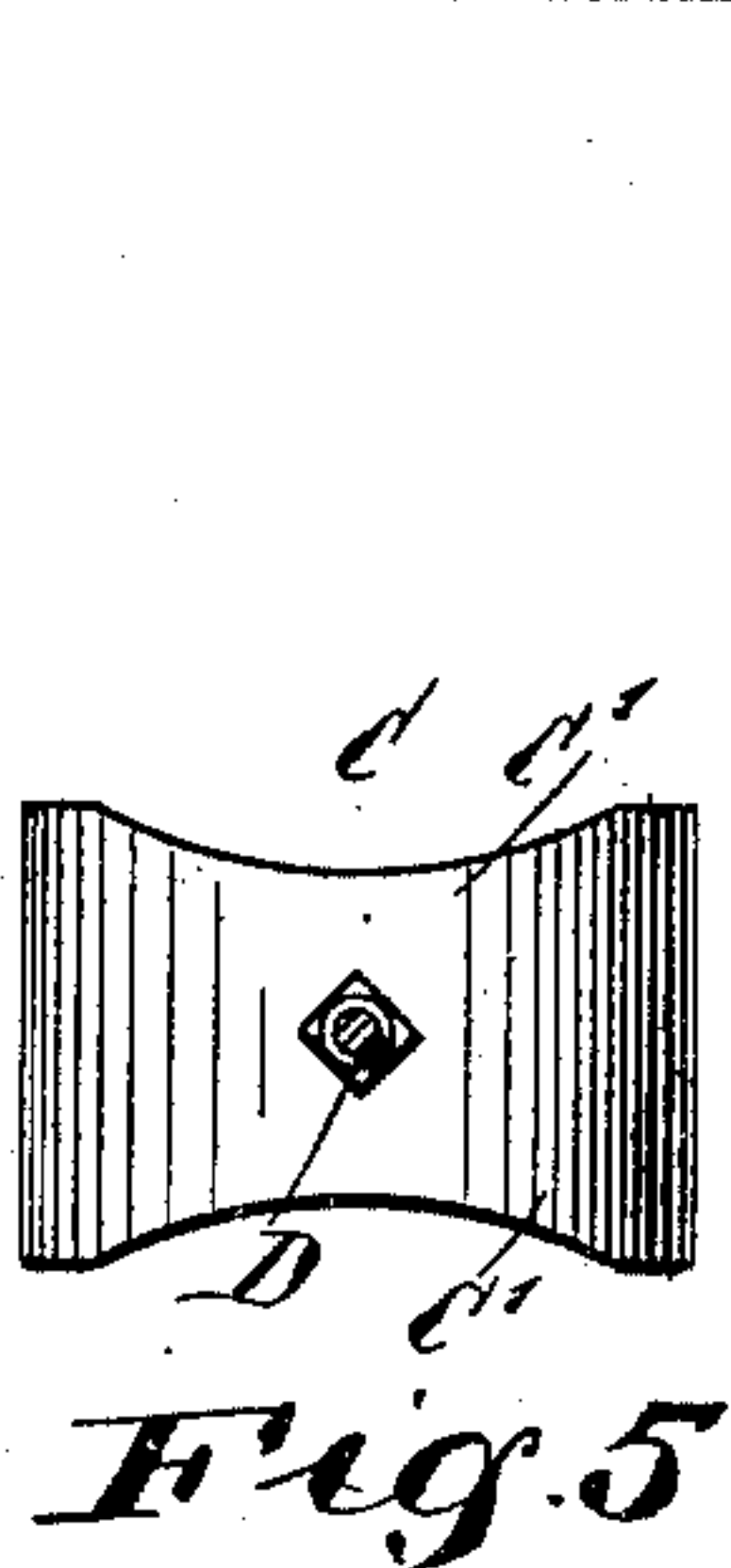
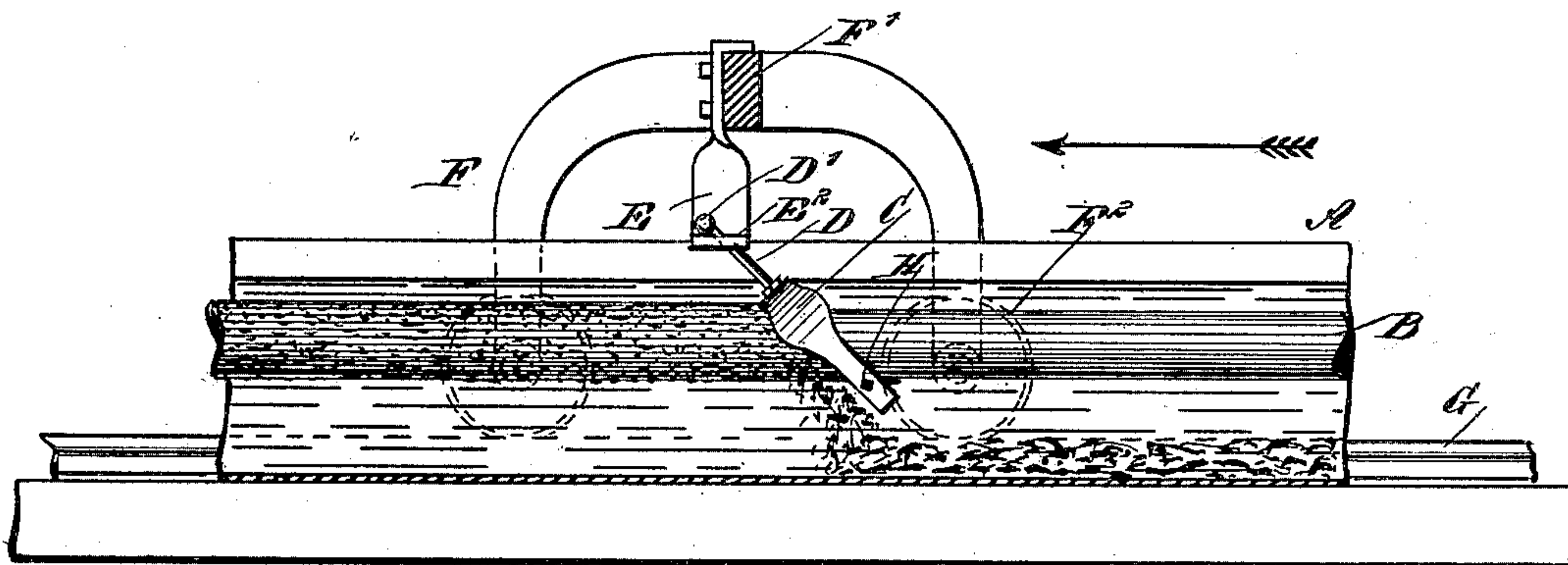
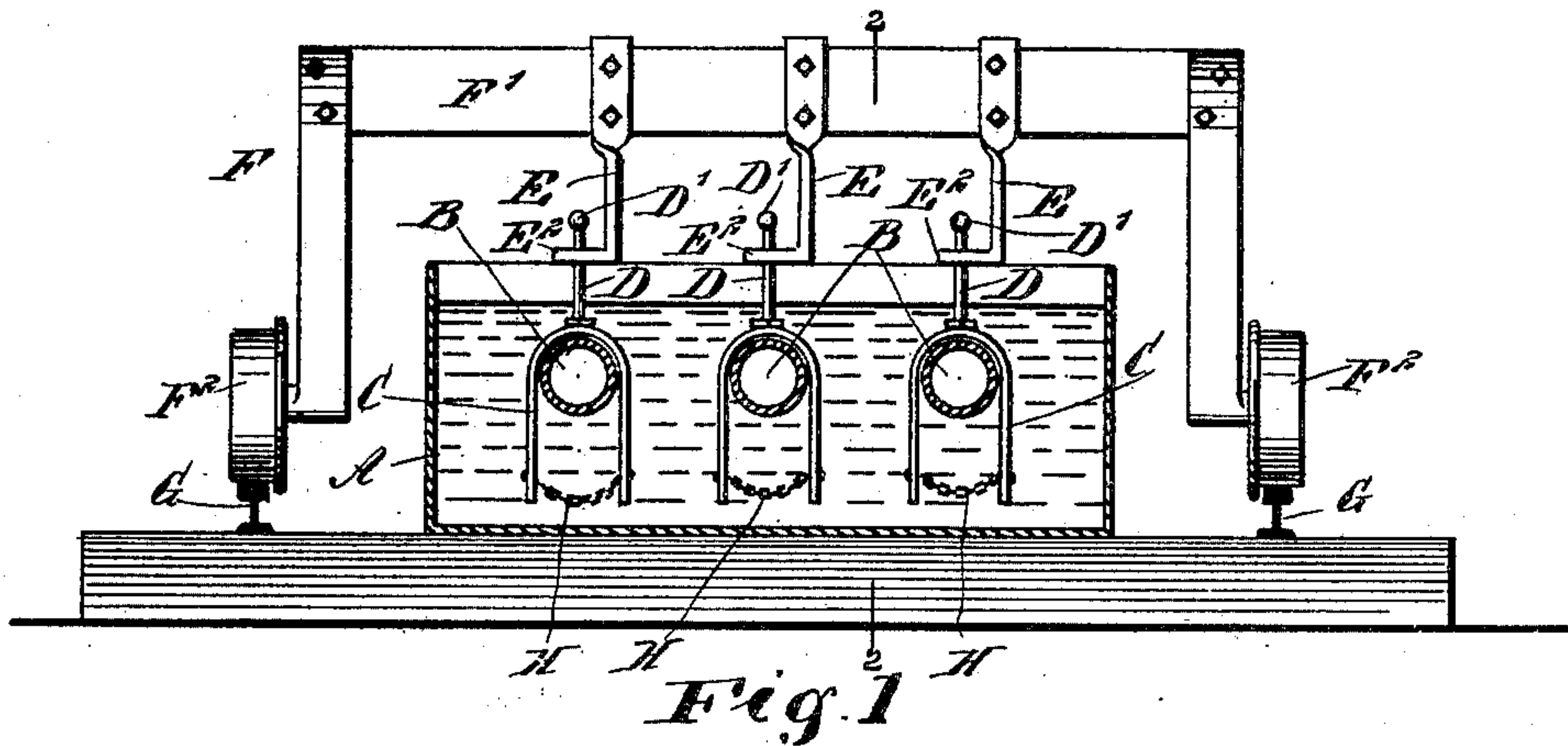
Patented Apr. 4, 1899.

C. M. McMULLEN.

SCRAPER.

(Application filed Aug. 19, 1898.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES M. McMULLEN, OF ROCK GLEN, NEW YORK.

## SCRAPER.

SPECIFICATION forming part of Letters Patent No. 622,524, dated April 4, 1899.

Application filed August 19, 1898. Serial No. 689,005. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES M. McMULLEN, of Rock Glen, in the county of Wyoming and State of New York, have invented a new and Improved Scraper, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved scraper more especially designed for use on the heating-pipes of brine-tanks or the like for removing salt-scale accumulations on the external surface of the pipes in a very simple, thorough, and economical manner.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-section of a brine-tank with the improvement applied and before starting the carriage. Fig. 2 is a longitudinal sectional elevation of the same on the line 2 2 in Fig. 1 and with the scraper shown in action. Fig. 3 is an enlarged end elevation of the improvement. Fig. 4 is a sectional elevation of the same. Fig. 5 is a sectional plan view of the same on the line 5 5 in Fig. 3. Fig. 6 is a sectional plan view of the same on the line 6 6 in Fig. 4, and Fig. 7 is an enlarged cross-section of the scraper when in use on a pipe.

The tank A, containing the brine, is provided with heating-pipes B, through which passes a heating medium, such as steam, and on the external surface of which accumulate salt scale and the like to be removed by the apparatus forming the subject of this invention. The external surface of each of the pipes B is adapted to be engaged at the top and sides by a scraper-saddle C, secured at its middle to a rod D, extending upwardly through an elongated slot E', formed in the horizontal flange E<sup>2</sup> of a standard E, bolted or otherwise fastened to the cross-beam F' of a carriage F, having wheels F<sup>2</sup>, mounted to travel on a suitable truck G. The upper ends of the rods D are provided with balls D' for preventing accidental disengagement of the

rods from the flanges E<sup>2</sup>, at the same time allowing a loose connection between the rod and the slotted flange. The ends of the saddle C are connected with each other by a chain H, adapted to engage the under side of the pipe B when the device is in action, as illustrated in Fig. 2, so that when the carriage F is moved forward or backward then the corresponding forward edge C' of the saddle engages the accumulation on the pipe B and scrapes it off therefrom, and at the same time the chain engages the under side of the pipe to remove any accumulations on this part of the pipe. The edges C' of the saddle are preferably curved on top, as indicated in Fig. 5, so as to readily fit upon the pipe-surface and thoroughly remove all the salt scale on this portion of the pipe.

When the device is in use and the carriage F moves forward in one direction, then the standards E by their slotted flanges E<sup>2</sup> act on the rods D in such a manner that the saddle C is tipped into an inclined position, as is plainly illustrated in Fig. 2, to bring the forward edge of the saddle, as well as the chain, in contact with the external surface of the pipe for removing the accumulations. When the carriage F starts backward, then the saddle C rights itself into a vertical position and then swings over into an oppositely-inclined position on the further movement of the carriage to again act while in an inclined position on the external surface of the pipe, as before explained.

The device is very simple and durable in construction, is not liable to get out of order and may be readily used for other purposes besides the one mentioned—that is, may be applied on pipes for removing soot or the like whether the pipes are in a horizontal or inclined position.

In the manufacture of salt it is very desirable that the salt scale should not accumulate on the pipes in the vat, as this accumulation retards the evaporation of the brine in the tank. By the use of this device the salt is prevented from accumulating on the pipes, the evaporation is increased, and the quantity of salt deposited is considerably increased, while the quality is improved. When the scraper is in motion, the chain connecting the



ends of the saddle creates a wash of the brine that assists in preventing the scale depositing on the pipes.

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

1. A scraper comprising a carriage carrying a standard having an elongated slot therein, a rod fitting loosely in said slot and formed with  
10 an enlarged head to prevent disengagement of the rod with the standard, a saddle carried by said rod and adapted to engage the outer surface of a pipe, and a chain connecting the ends of the saddle with each other substan-  
15 tially as described.

2. A scraper for the heating-pipes of brine-tanks and the like, comprising a movable carriage, standards carried by said carriage and provided with elongated slots, scraper-sad-  
20 dles shaped to fit upon the external surface of the pipes and rods connected with the saddles and loosely engaging the elongated slots in the standards, whereby when the carriage is moved the said scraper-saddles are tipped  
25 into an inclined position to bring the forward edges of the saddles in contact with the external surface of the pipes, substantially as described.

3. A scraper for use on the heating-pipes  
30 of brine-tanks and the like, the said scraper comprising a carriage provided with wheels

mounted to travel on a suitable track located at the sides of the tank, a cross-beam carried by said carriage above the tank, standards fastened to the cross-beam and each having a horizontal flange at its lower end provided with an elongated slot, a rod having a head at its upper end and fitting loosely in the elongated slot of each standard, a scraper-saddle secured at its middle to the lower end of each of said rods, the edges of the said saddles being curved at the top to fit upon the surfaces of the pipes, the connection of the saddles with the standards causing said saddles to assume an inclined position when the device is moved, to bring the forward edge of the saddle in contact with the external surface of the pipe, and a chain connecting the ends of each saddle, substantially as described.

4. A scraper comprising a carriage carrying a standard having an elongated slot therein, a rod fitting loosely in said slot and formed with an enlarged head to prevent disengagement of the rod with the standard and a U-shaped saddle carried by said rod and having its edges at the top curved, substantially as described.

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Witnesses:

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