

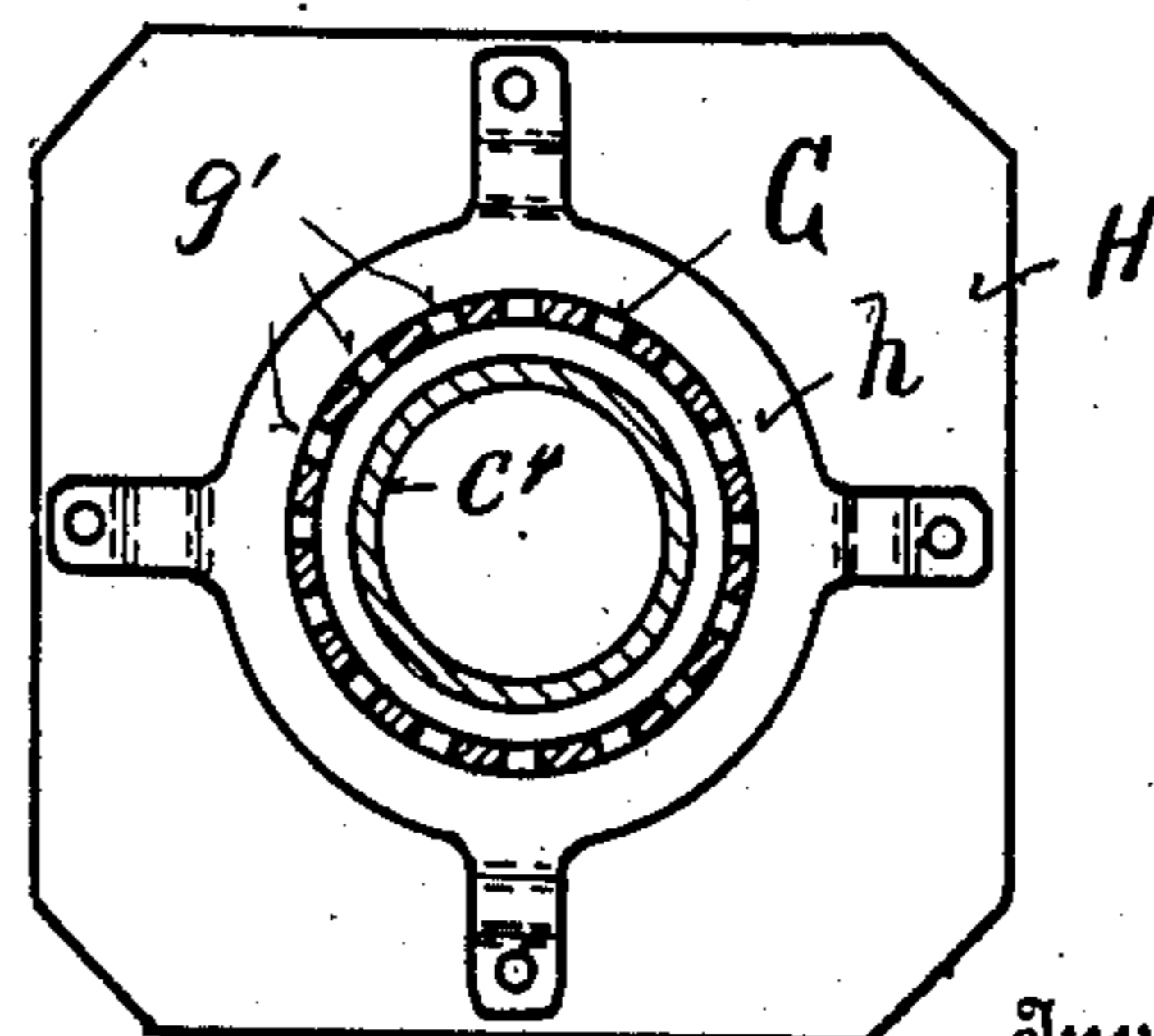
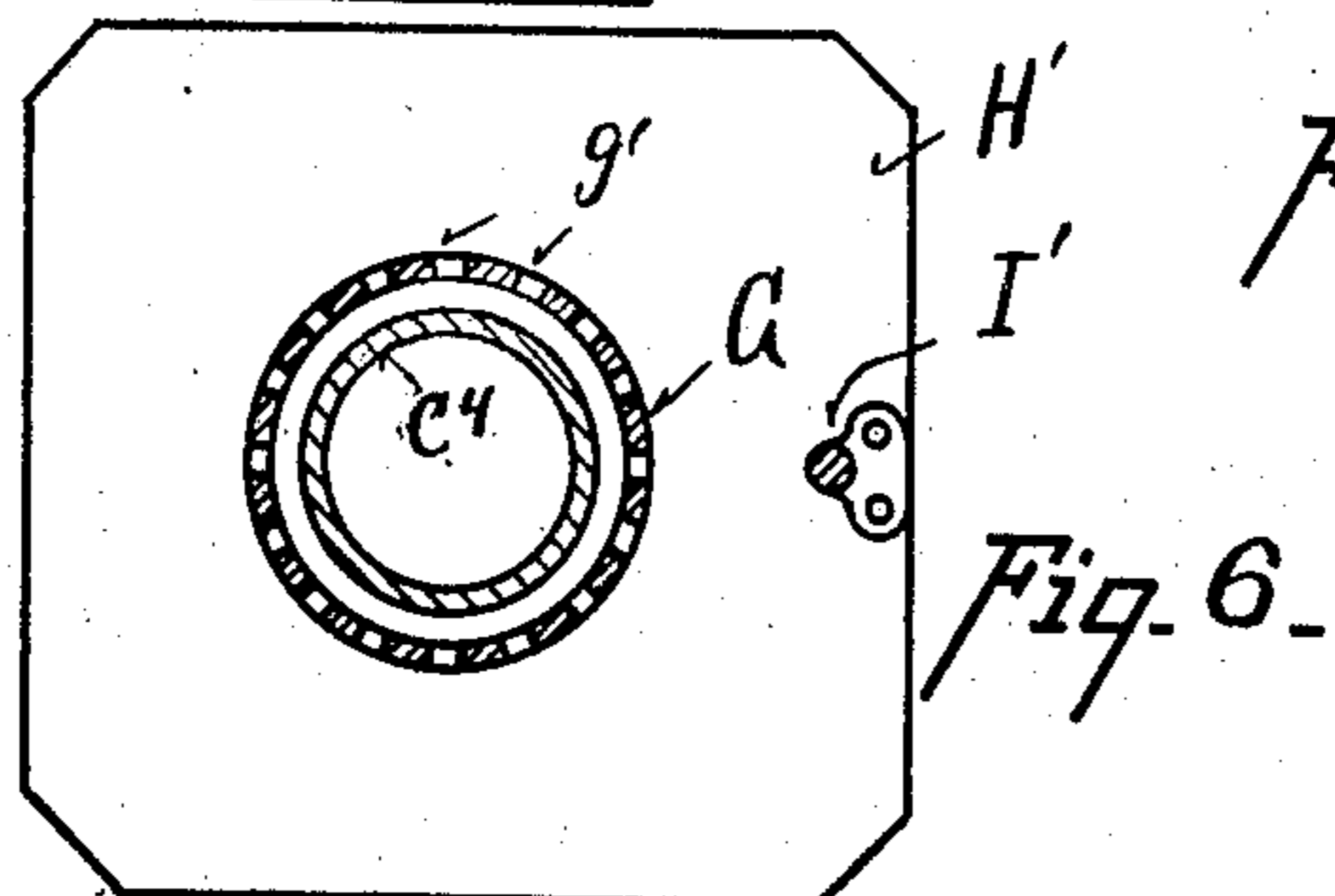
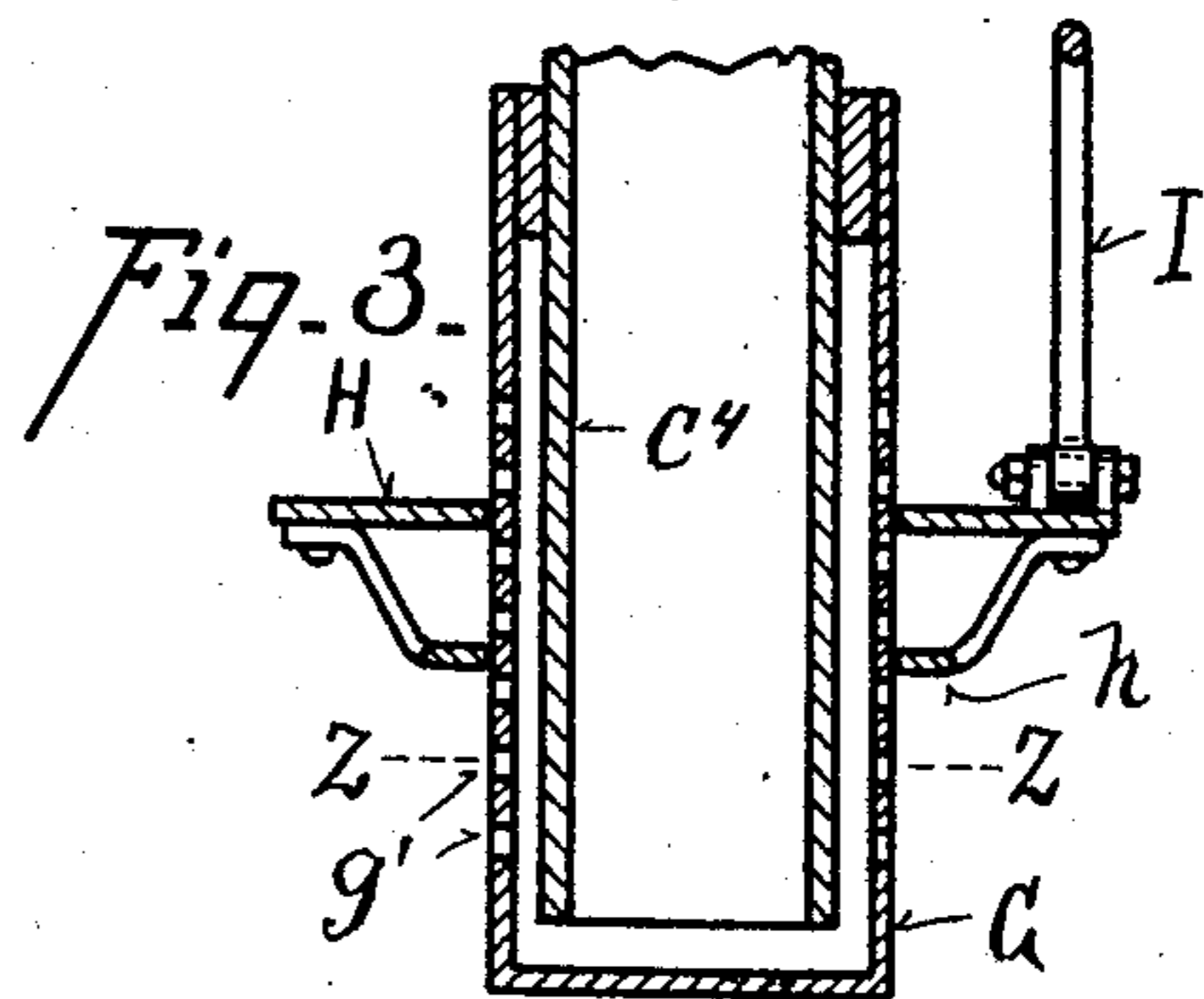
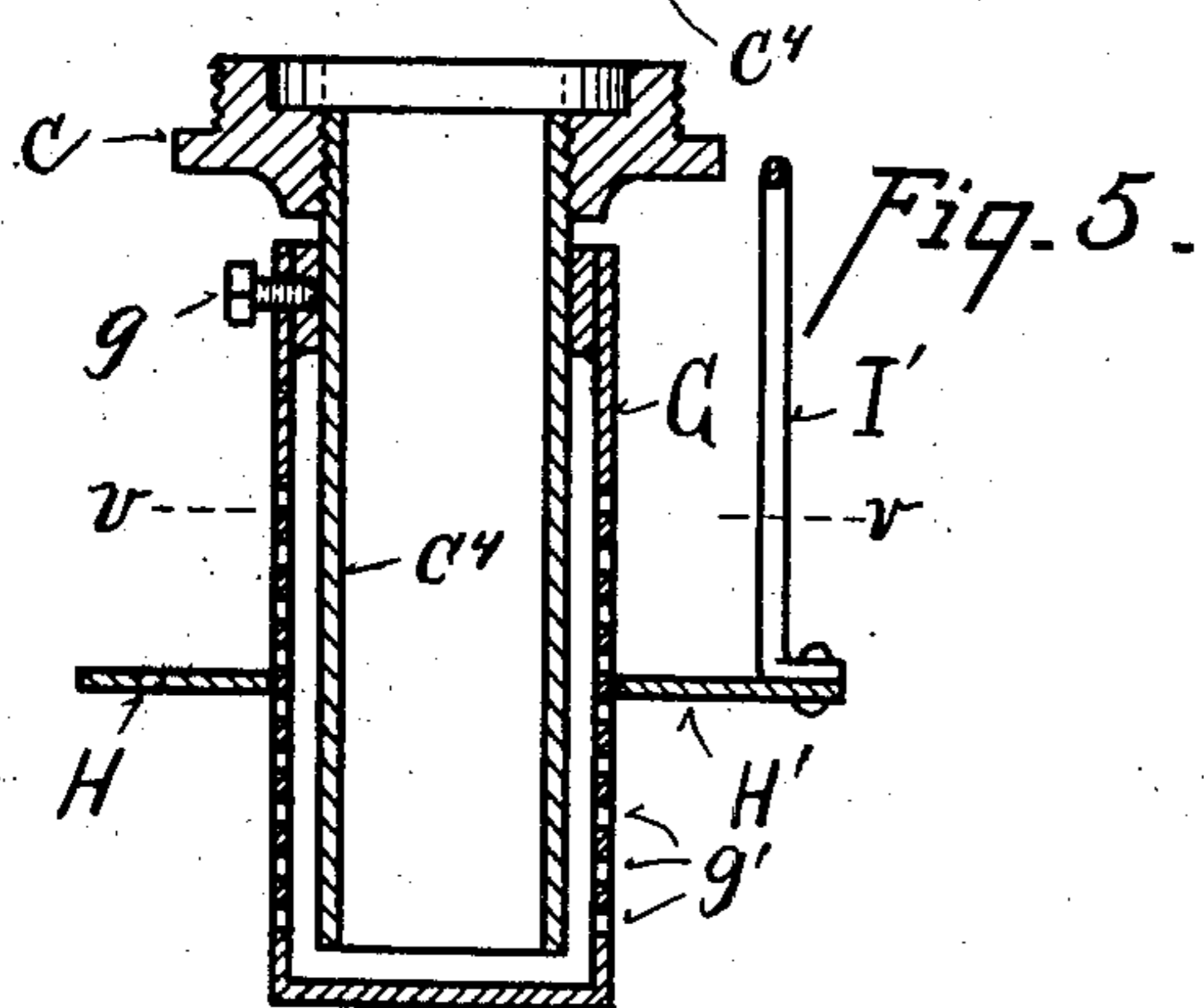
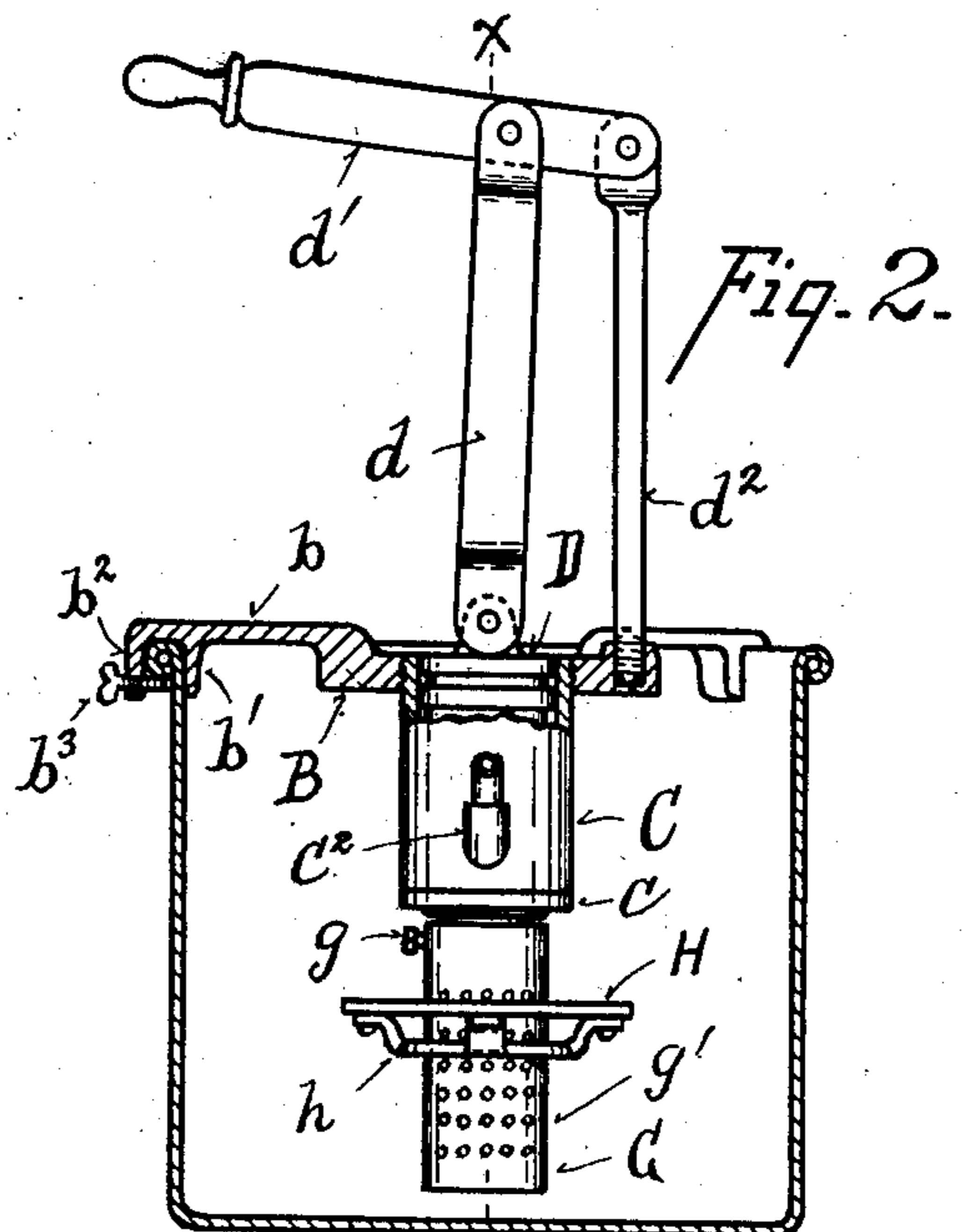
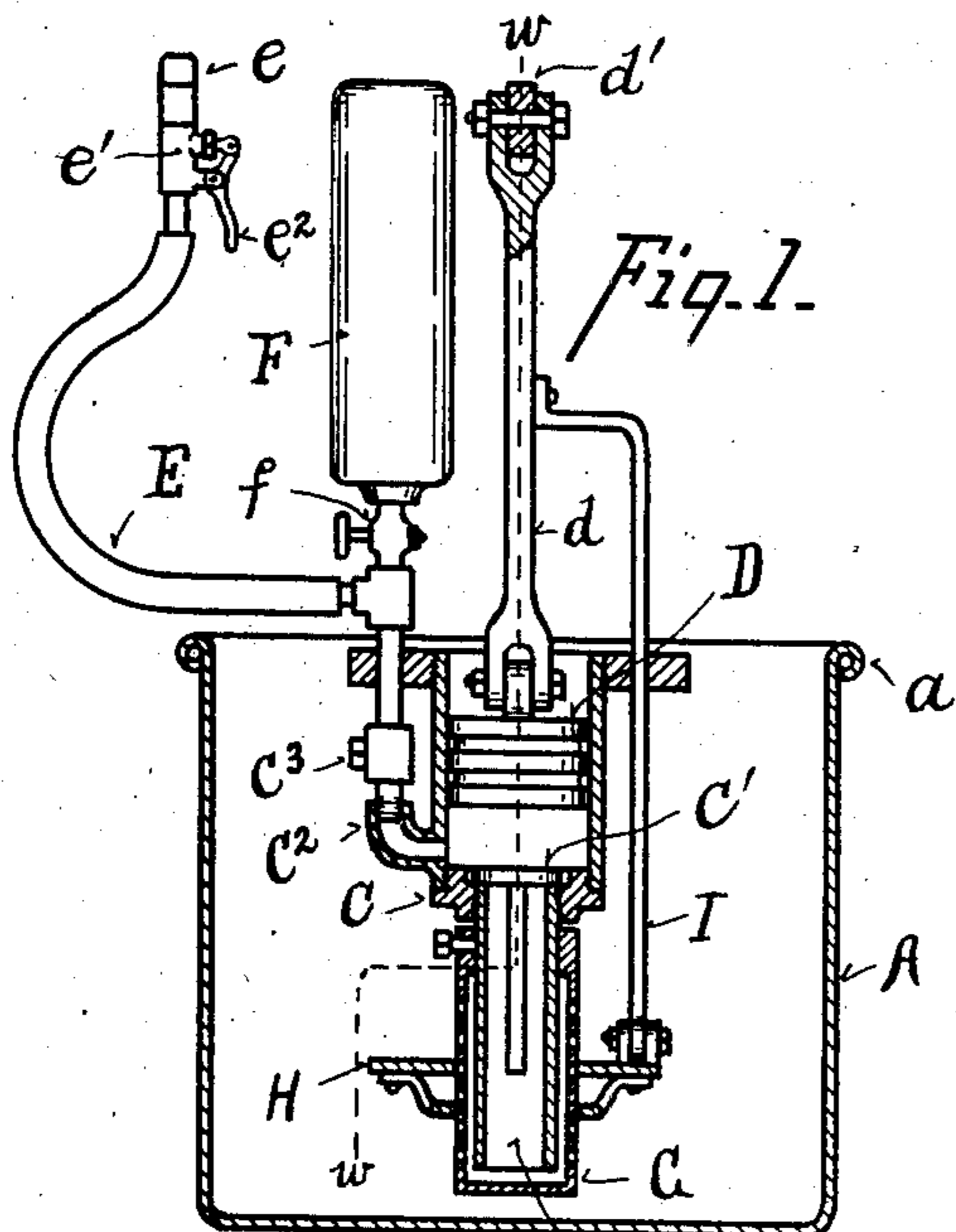
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PATENTED AUG. 11, 1908.

FRANK KOENIGKRAMER & FREDERICK KOENIGKRAMER.

SPRAYING APPARATUS.

APPLICATION FILED DEC. 6, 1907.



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UNITED STATES PATENT OFFICE.

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SPRAYING APPARATUS.

No. 895,768.

Specification of Letters Patent.

Patented Aug. 11, 1908.

Application filed December 6, 1907. Serial No. 405,371.

To all whom it may concern:

Be it known that we, FRANK KOENIGKRAMER and FREDERICK KOENIGKRAMER, citizens of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Spraying Apparatus, of which the following is a specification.

Our invention relates to improvements in apparatus for spraying white-wash and similar substances, mixtures or chemicals.

One of its objects is to provide a simple and reliable apparatus which may be attached to an ordinary bucket or sheet metal tank, in which the mixture or substance is prepared, and from which it is drawn and sprayed as desired.

Another object is to provide simple and reliable mechanism to keep open the passages to the spraying pump and prevent the introduction of solid particles too large to readily pass through the pump and other parts of the spraying apparatus.

Another object is to provide means whereby white-wash and other substances may be used without the necessity of first subjecting them to a separate straining operation.

It further consists in certain details of form, combination and arrangement, all of which will be more fully set forth in the description of the accompanying drawings, in which,

Figure 1 is a central vertical section through our improved apparatus, on line $x-x$ of Fig. 2. Fig. 2 is a section on line $w-w$ of Fig. 1. Fig. 3 is an enlarged sectional detail of the straining and agitating mechanism. Fig. 4 is a section on line $z-z$ of Fig. 3. Fig. 5 is a view similar to Fig. 3 showing a modification. Fig. 6 is a section on line $v-v$ of Fig. 5.

In the accompanying drawings, representing a convenient form of our improved apparatus, A, represents a bucket or tank preferably of sheet metal with an enlarged rim, a .

B represents a frame suspended over the tank, A, preferably by means of radial arms, b , having lugs, b' , b^2 , to engage the rim of the tank, and thumb screws, b^3 , to lock the frame, B, to the tank. The frame is preferably located near the center and at or slightly below the rim of the tank.

C, represents the pump cylinder carried by and projecting down from frame B.

c represents a cylinder head at the lower end of the pump cylinder, which is provided with an inlet valve, c' .

D represents a plunger which is reciprocated in the cylinder by means of a link or rod, d , and a hand lever, d' , the link being preferably pivoted at one end to the plunger, D, and at the opposite end to the hand lever. The hand lever is also pivoted at one end to a stationary arm, d^2 , projecting upward from frame, B. The cylinder is provided with an outlet passage, c^2 , in which is located a valve, c^3 , to prevent a return of the liquid to the pump cylinder.

E represents a hose, to the free end of which is attached a discharge or spraying nozzle, e , which is preferably controlled by a spring actuated valve, e' , tending to cut off the supply to the spray nozzle, and which is opened by pressing on lever, e^2 .

F represents an air chamber to secure a uniform flow from the spray nozzle and f a valve controlling the flow thereto.

The cylinder head, c , is preferably provided with a downwardly projecting tube, c^4 the lower end of which reaches close to the bottom of the tank, A.

G represents a metal cap fitted over the lower portion of tube, c^4 , and locked thereto by a set-screw, g . The cap, G, is closed at its lower end.

g' represents a series of small perforations in the side walls of cap, G, to admit the liquid from the tank to the interior of cap, G, and to prevent the introduction of any solid particles too large to readily pass through the apparatus and spray nozzle.

In order to prevent the accumulation of solid matter on the outside of the cap, G, so as to obstruct the passage of the fluid or mixture through the same, and also to provide means for agitating the fluid or mixture in the tank, we provide a plate, H, which closely fits the exterior of the cap, and slides up and down over the perforated portion of the cap to dislodge any solid matter which is unable to pass through the perforations, and also by its movements to agitate the body of liquid in the tank, the cap serving as a guide for the plate, H. The plate, H, as shown in Figs. 1 to 4 is provided with a guide ring, h , which also slides on the cap, and serves to hold the plate, H, in parallel planes relative to the cap, G in whatever position it may be moved. The plate, H, is reciprocated relative to the cap, G, by means of an arm, I, carried by the link, d , or pump lever, d' , and which is pivoted, or otherwise attached to plate, H.

By having tube, c^4 , project close to the bottom of tank, A, practically all of the liquid in tank, A, can be pumped therefrom, and the liquid level in the tank lowered below the upper perforations of cap, G, without drawing air into the pump.

In the modification shown in Figs. 5 and 6, which is preferably employed where it is desired to produce the apparatus at minimum cost, the ring, h , is dispensed with, and plate, H' , is rigidly connected to the lower end of arm, I, the cap, G, serving as a guide to direct the movement of plate, H, which in turn serves to dislodge the solid matter from the exterior of the tube and to agitate the liquid in the tank.

We are thus enabled to prepare white-wash or similar substances to be sprayed, in the first instance, in the bucket or tank, A and pump and spray the same therefrom without any preliminary straining or other treatment, to free the same from solid matter, which preliminary treatment would consume considerable time and necessitate the use of two or more vessels or tanks. The cap, G, is readily detached when desired, and may be retained in place by being threaded, or by means of set-screw, g .

The mechanism herein shown and described is capable of considerable modification without departing from the principle of our invention.

Having described our invention, what we claim is:

1. In a mechanism of the character indicated, a portable tank, a spraying nozzle, a pump carried by said tank, an intake tube projecting downward from said pump into said tank, a cylindrical cap inclosing the lower portion of said intake tube, and a member adapted to be reciprocated across the perforated portion of the cylindrical exterior of said cap to detach accumulated solid matter therefrom, and to agitate the contents of said tank, said member being connected to and actuated by the movements of the pump.

2. In a mechanism of the character indicated, a tank, a pump cylinder, a pump plunger, mechanism to reciprocate said plunger, a discharge nozzle, an intake tube extending downward from said pump cylinder and open at the lower end, a cylindrical cap inclosing the lower portion of said tube and united thereto by a close joint, the interior of said cap being of greater diameter than said tube to form a chamber between the cap and tube, a series of perforations in

the cylindrical portion of said cap above the open end of said tube, and a closely fitting member encircling said cap and adapted to be reciprocated across said perforations, said member being actuated by the plunger actuating mechanism.

3. In a mechanism of the character indicated, a tank, a pump cylinder, a pump plunger and mechanism to reciprocate said plunger, a discharge nozzle, an intake tube projecting downward from said pump cylinder and open at the lower end, a perforated cylindrical cap inclosing the intake tube, a member reciprocating over the exterior of the perforated cylindrical portion of said cap and guided thereby, said member being connected to and actuated by the mechanism actuating said pump plunger.

4. In a mechanism of the character indicated, a tank, a pump cylinder, a pump plunger and mechanism to reciprocate said plunger, a discharge nozzle, an intake tube projecting downwardly from said cylinder into said tank and open at its lower end, a perforated cylindrical cap of greater diameter than the intake tube to provide a chamber between said cap and tube, a close joint between the open end of said cap and said intake tube, a member reciprocating over the perforated portion of the cylindrical exterior of said cap, guided by said cap, and adapted to detach solid matter from the exterior of said cap, said member being connected to and moving in unison with said pump plunger.

5. In a mechanism of the character indicated, a tank, a pump cylinder, a pump plunger, mechanism to reciprocate said plunger, a discharge nozzle, an intake tube extending from said cylinder to near the bottom of said tank, a perforated cylindrical cap inclosing the lower portion of said intake tube and attached to said tube by a close joint, a member reciprocating over a perforated portion of the cylindrical face of said cap, and adapted to detach solid matter from the exterior of said cap and to agitate the liquid in said tank, said member being moved in unison with the plunger operating mechanism.

In testimony whereof we have affixed our signatures in presence of two witnesses.

FRANK KOENIGKRAMER.
FREDERICK KOENIGKRAMER.

Witnesses:
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AGNES McCORMACK.