

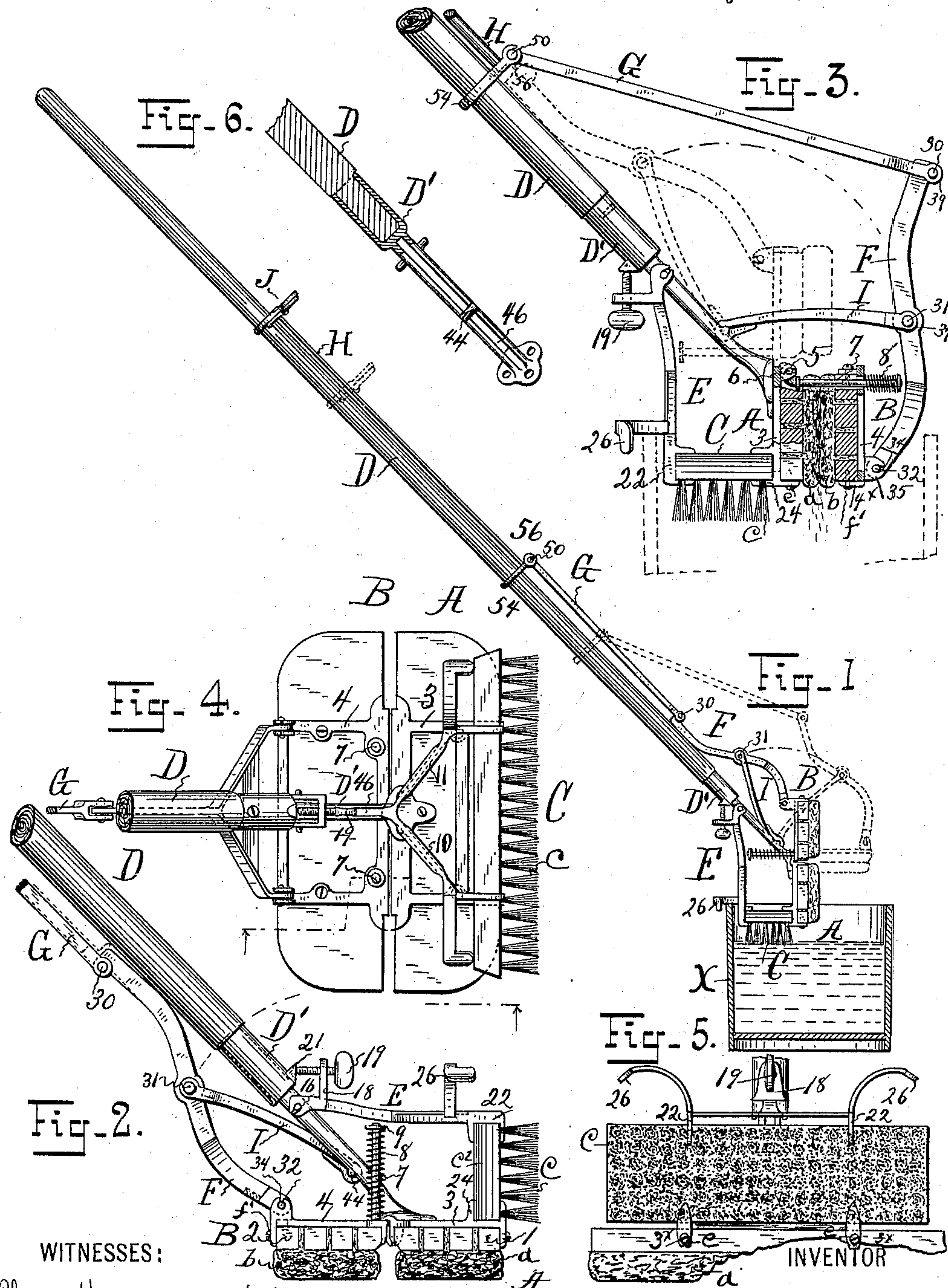
(No Model.)

4 Sheets—Sheet 1.

DE LACY E. BALLAM.  
MOP HEAD.

No. 603,999.

Patented May 10, 1898.



WITNESSES:

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his ATTORNEY

(No Model.)

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Fig-7.

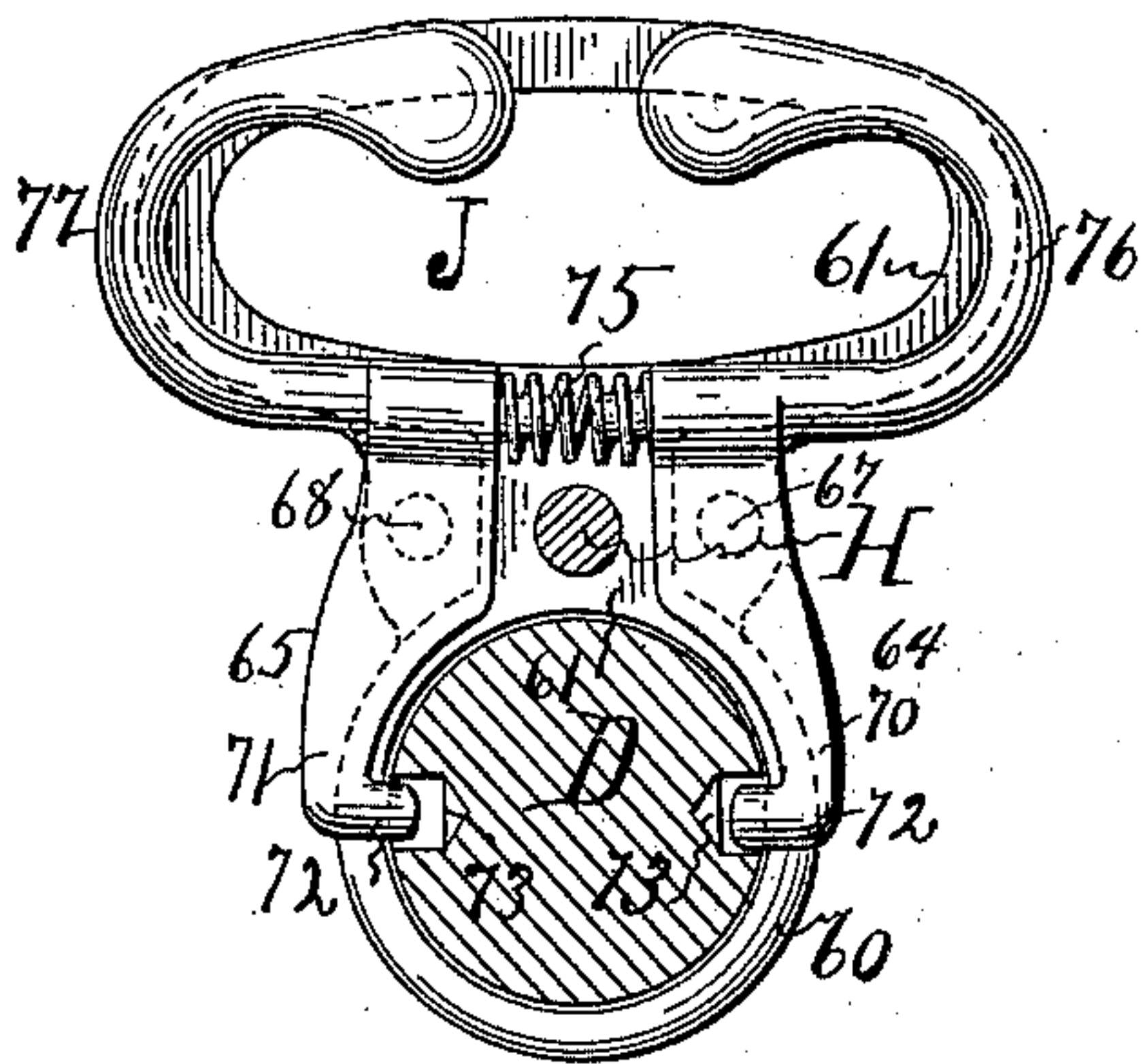


Fig-9.

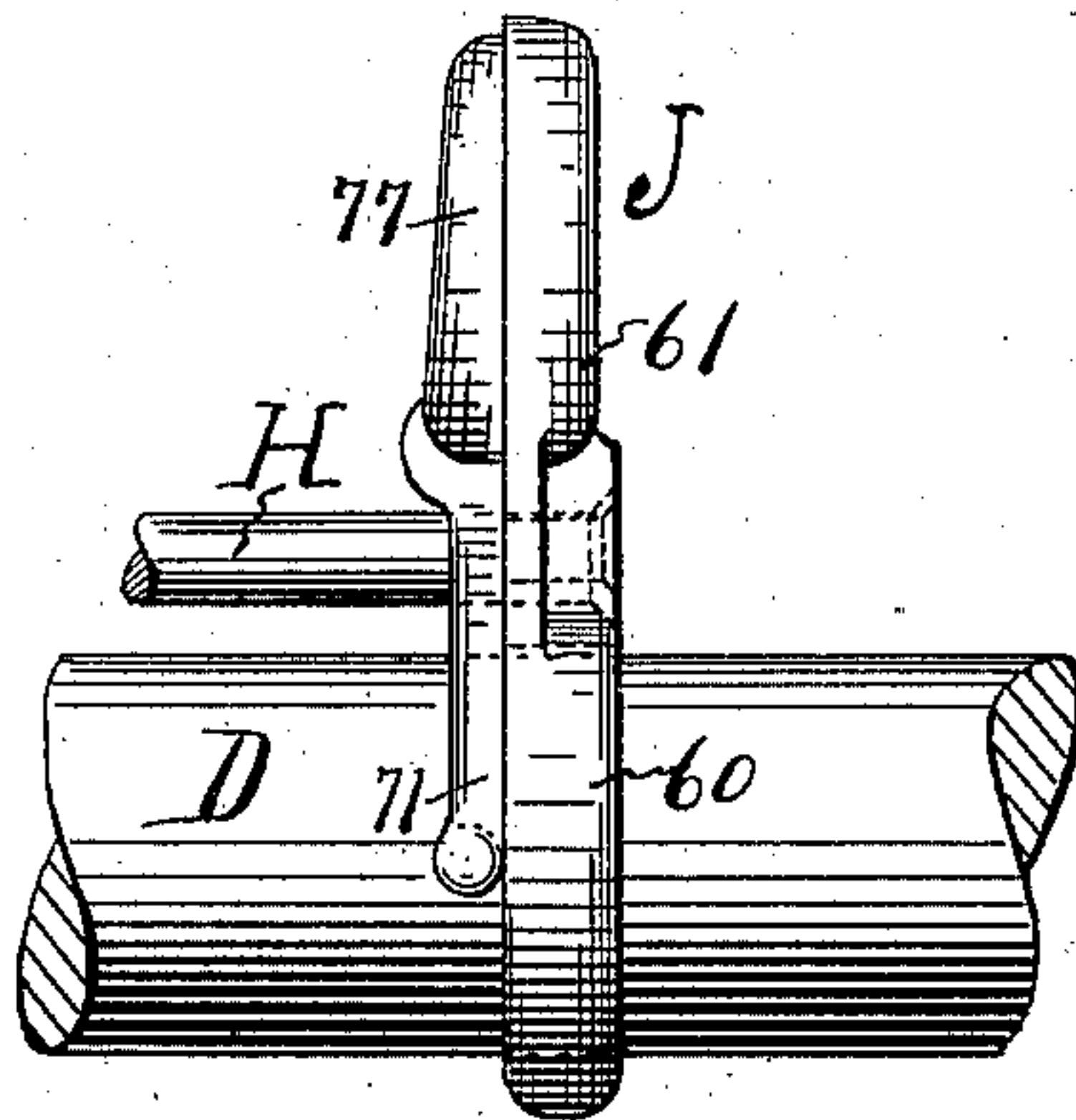


Fig-8.

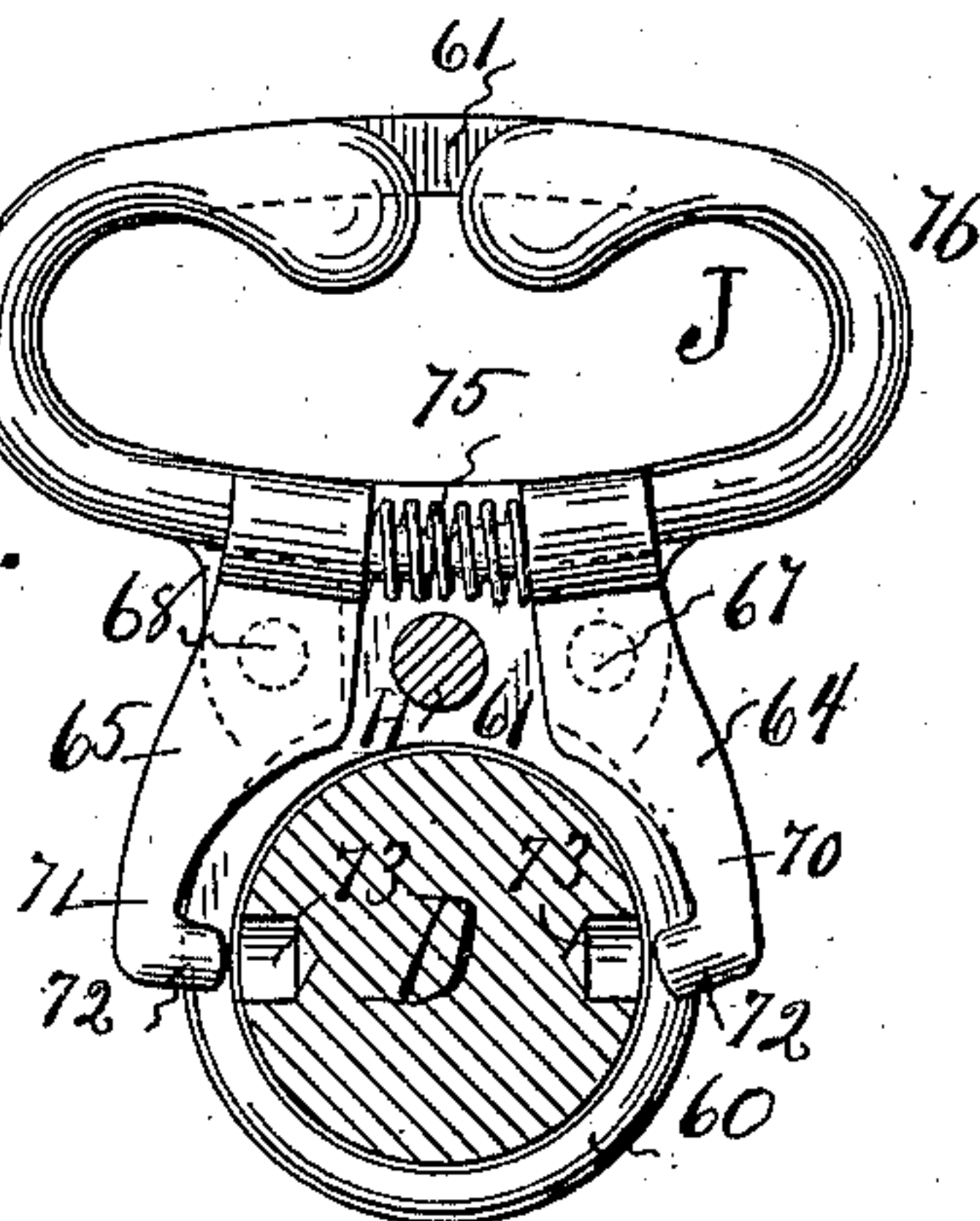
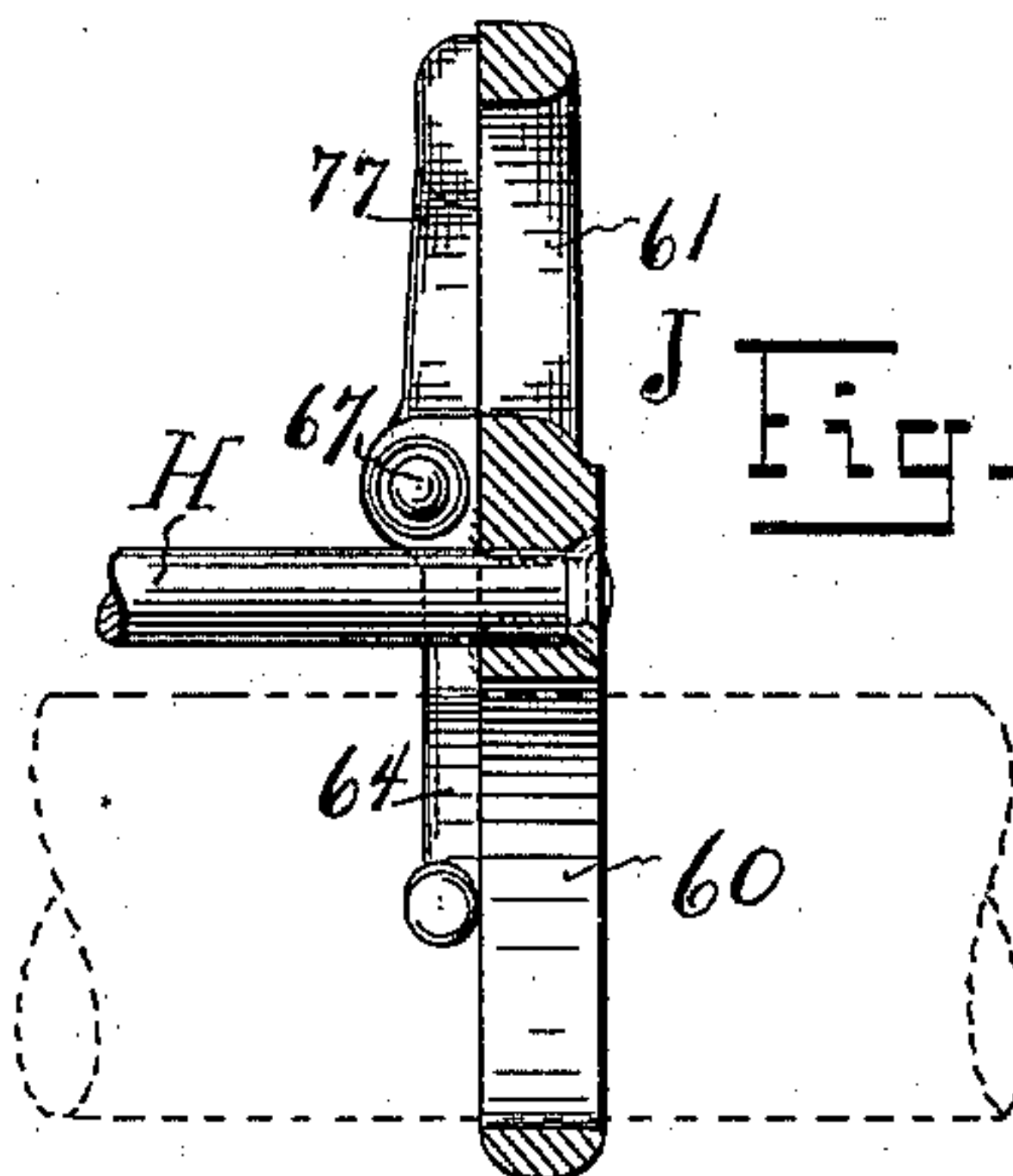


Fig-10.



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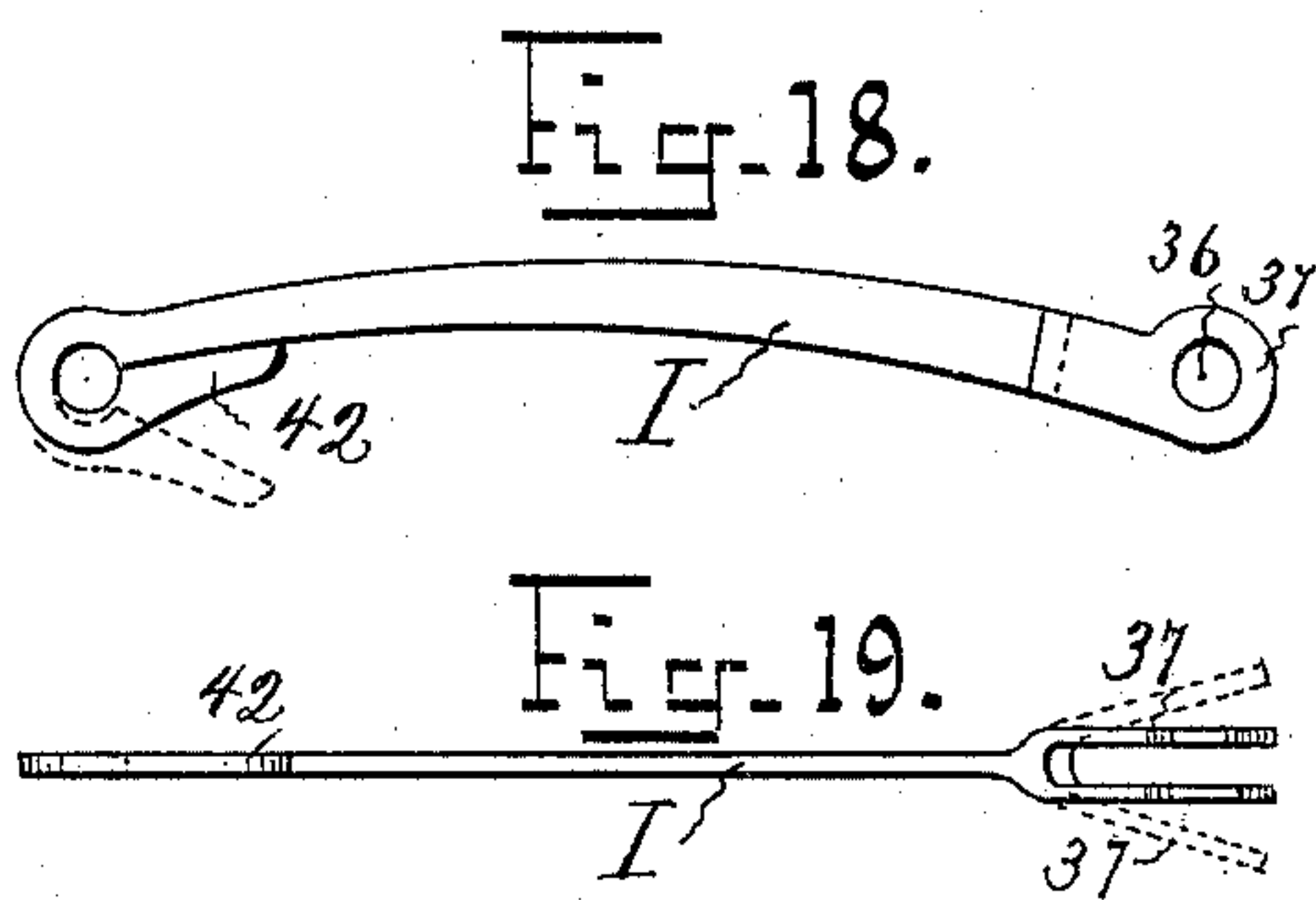
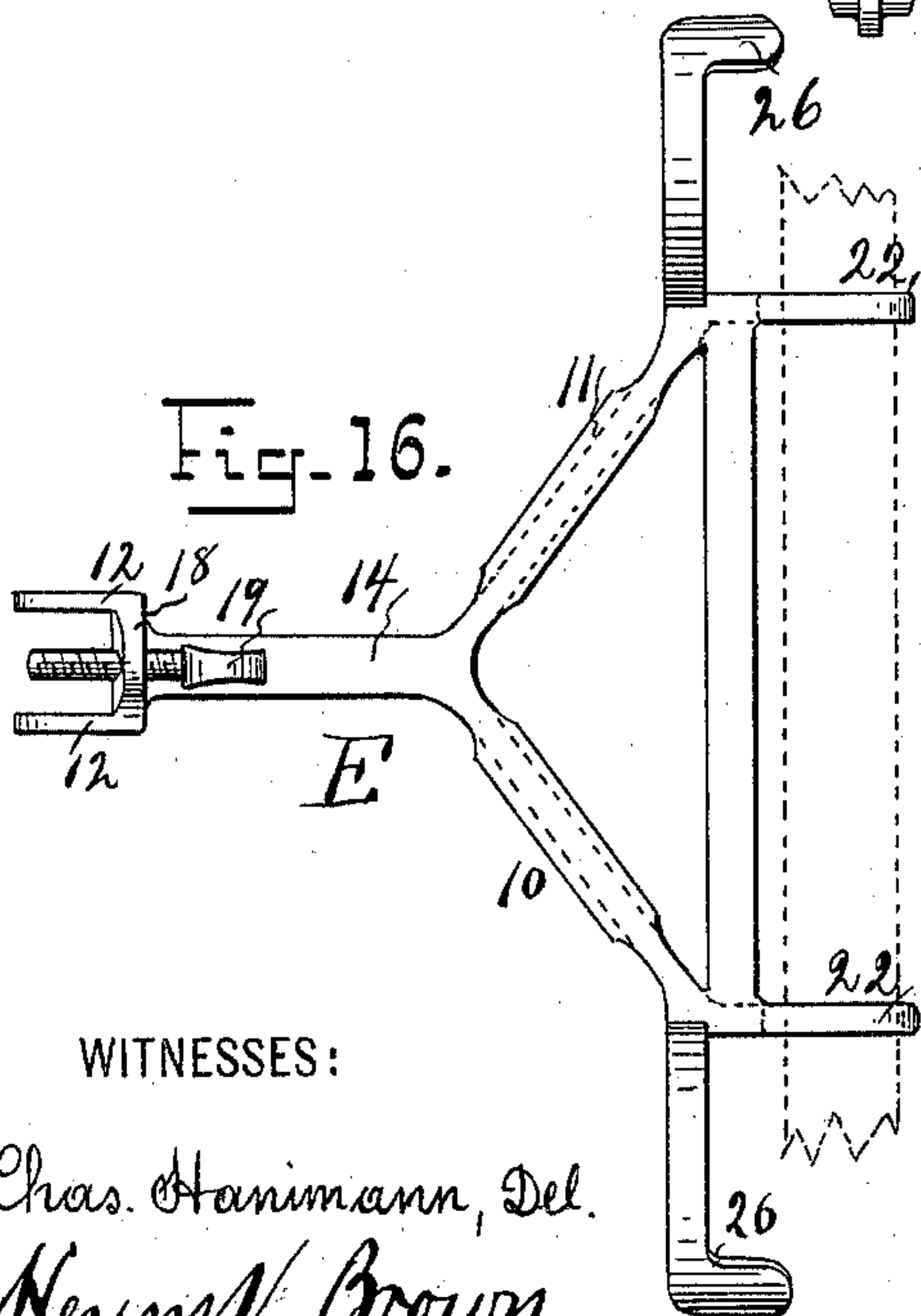
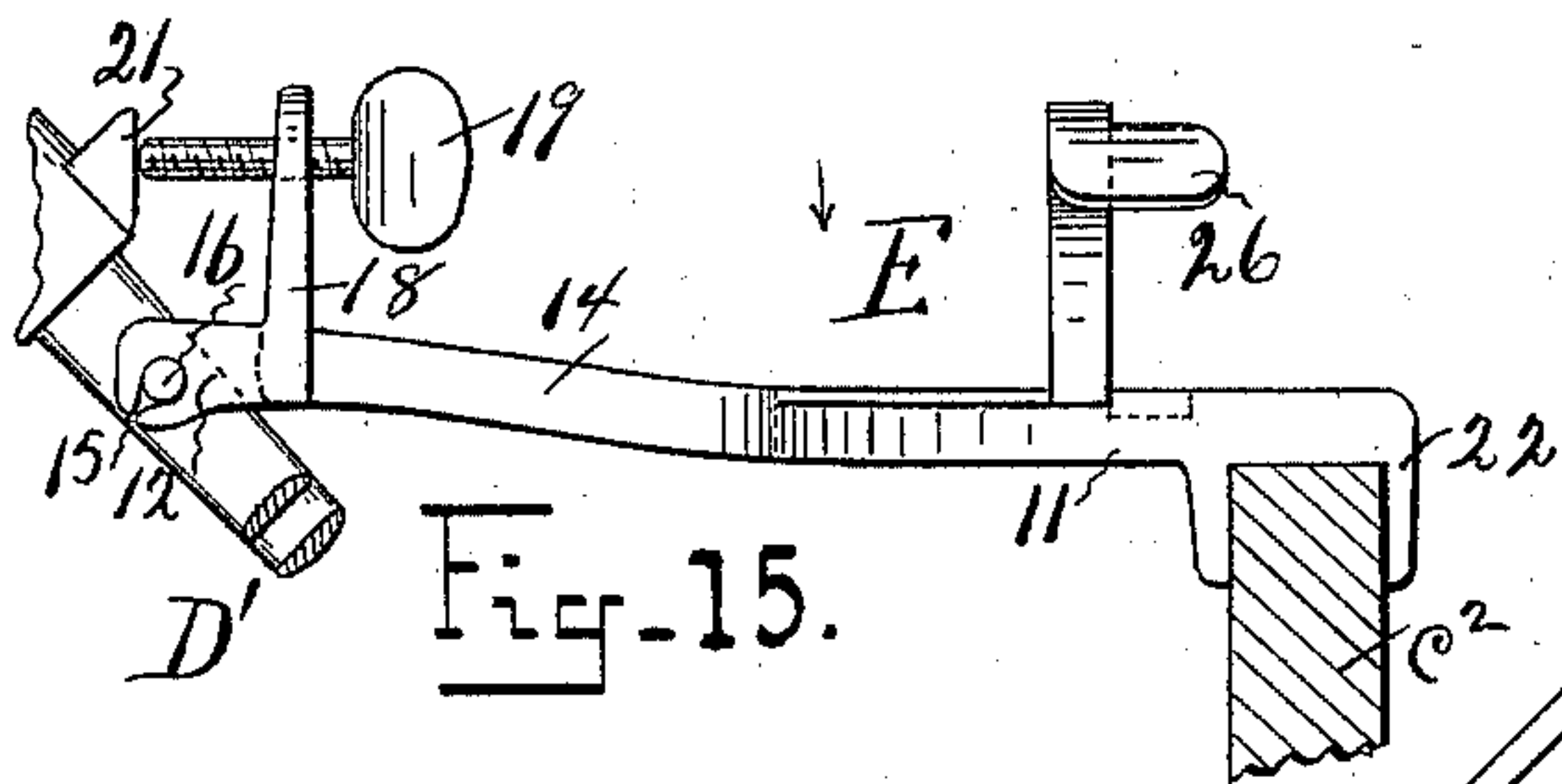
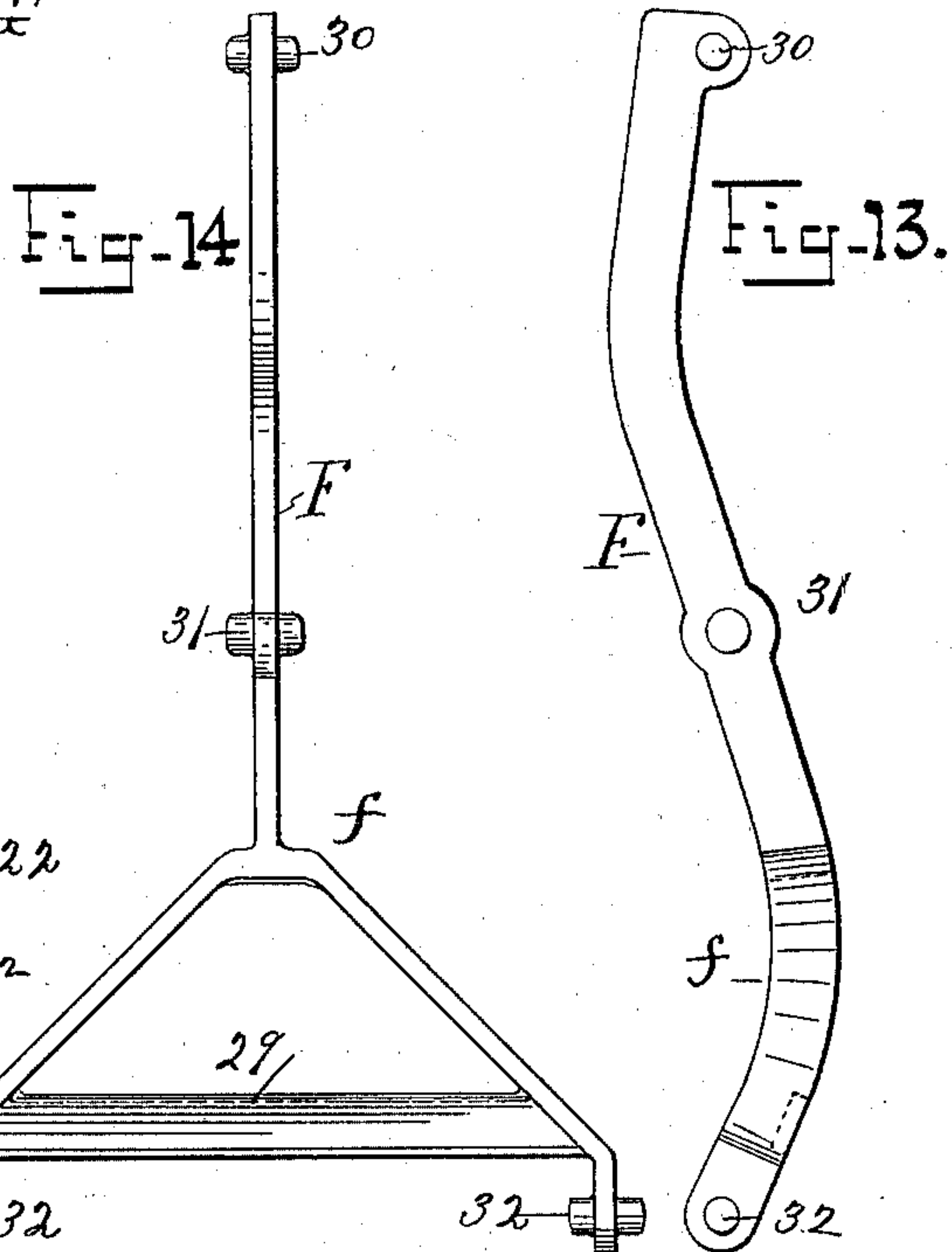
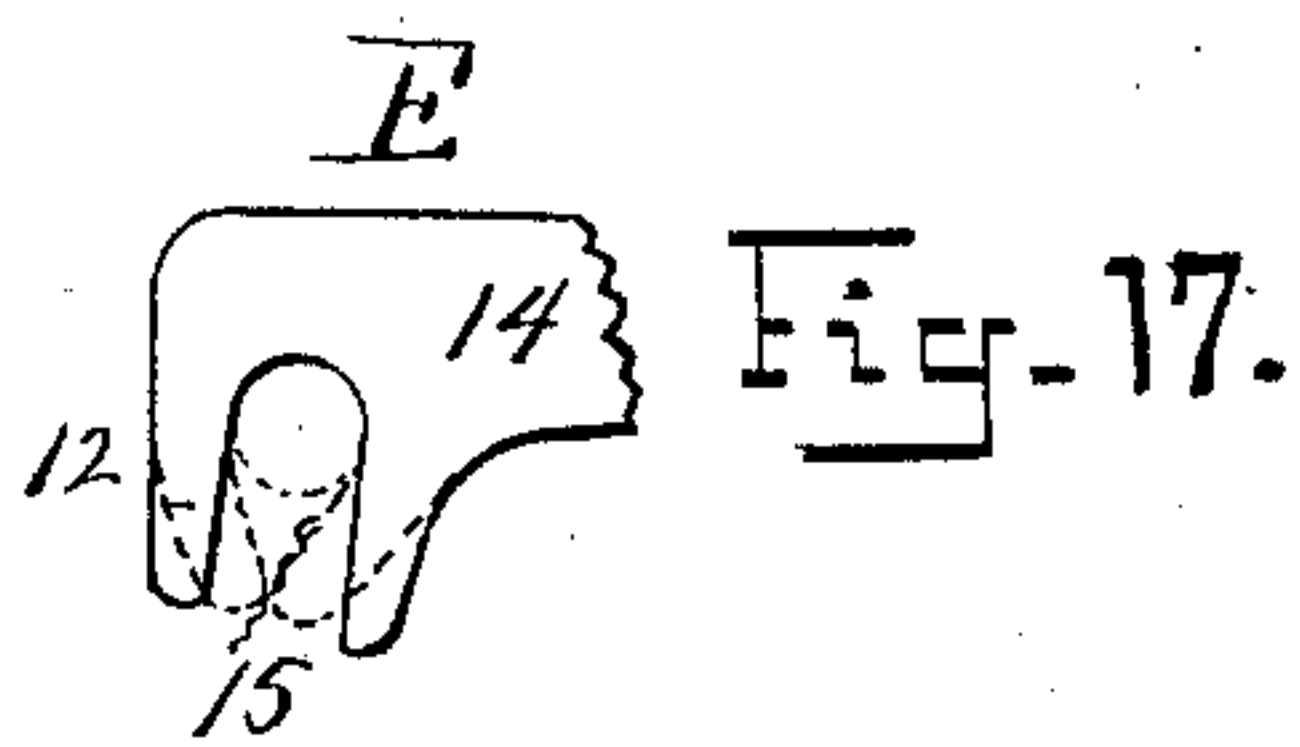
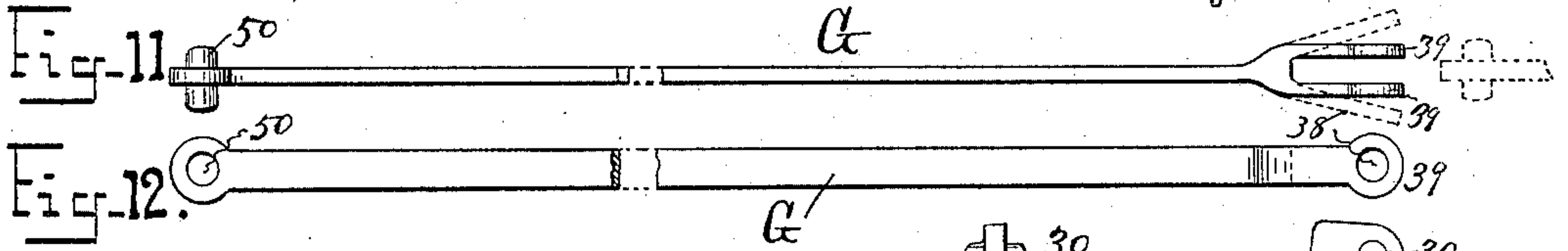
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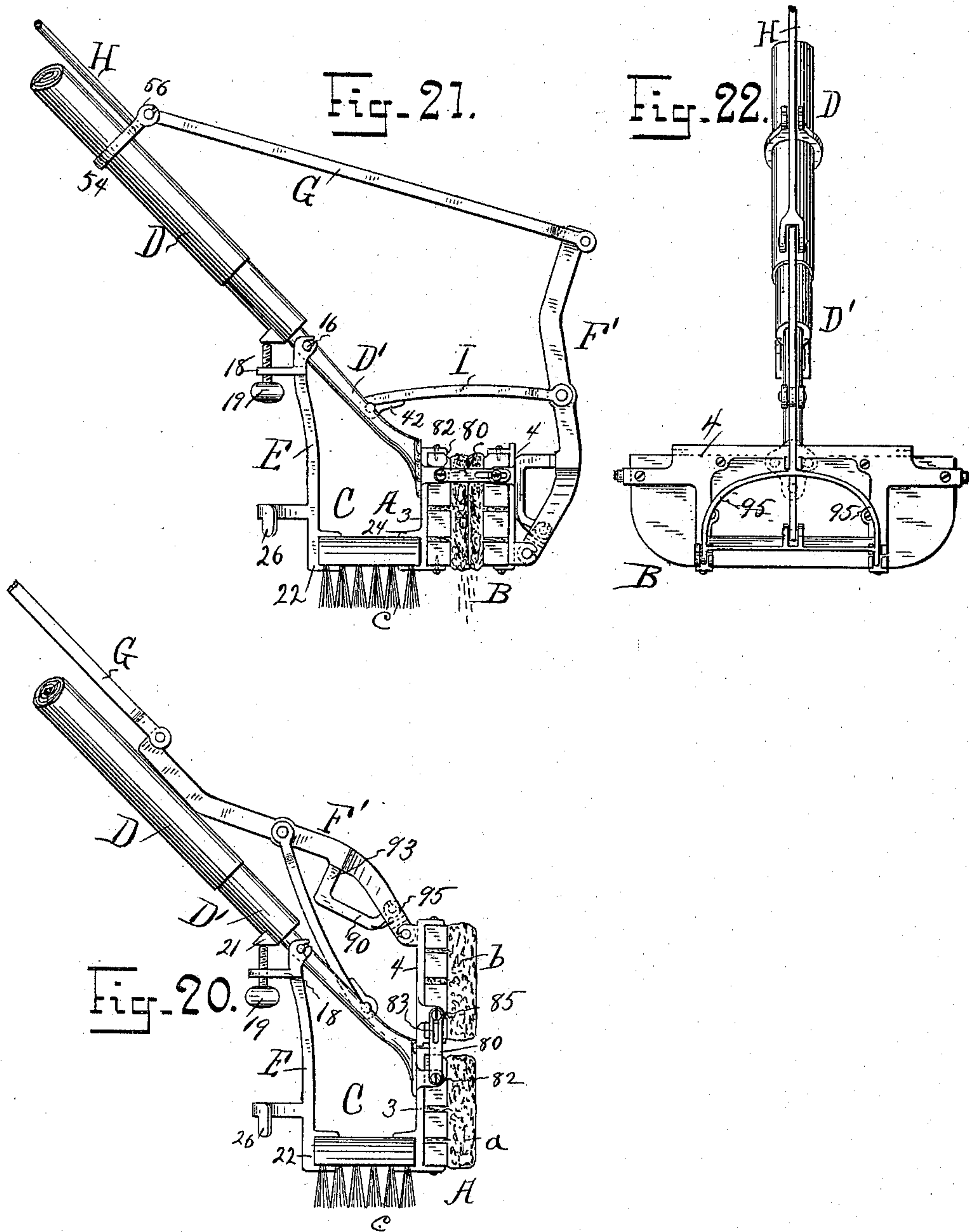
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DE LACY E. BALLAM.  
MOP HEAD.

No. 603,999.

Patented May 10, 1898.



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# UNITED STATES PATENT OFFICE.

DE LACY E. BALLAM, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ANNIE T. GRACE, OF SAME PLACE.

## MOP-HEAD.

SPECIFICATION forming part of Letters Patent No. 603,999, dated May 10, 1898.

Application filed March 27, 1896. Serial No. 585,039. (No model.)

*To all whom it may concern:*

Be it known that I, DE LACY E. BALLAM, a citizen of the United States, and a resident of the city of Brooklyn, Kings county, State of New York, have invented certain new and useful Improvements in Mop Heads and Handles, of which the following is a specification.

My invention relates to improvements in self-wringing mops and brushes which are of that type which can be compressed to expel surplus water without requiring the absorbent pads to be taken into the hands.

The invention relates both to the general structure and to the several parts by which cheap construction and assembling are attained.

In articles of this nature cheap and simple construction and assembling are of great importance, and I have invented such a form and construction of the several parts which make up the completed article as greatly cheapen both the manufacture and assembling of the whole.

Referring to the drawings which accompany the specification to aid the description, Figure 1 is an elevation of the mop resting on a pail. Fig. 2 is a view, on an enlarged scale, of the mop-head and operating-levers, Fig. 3 being a view of the same parts, but with the mop compressed. Fig. 4 is a plan view of the mop-head, and Fig. 5 a broken view of the parts of the same as seen from the right of Fig. 2. Fig. 6 is a detail of the ferrule on the mop-handle. Figs 7, 8, 9, and 10 are views of the finger-clutch which locks the parts in their several positions. Figs. 11 and 12 are respectively a side and plan view of the connecting-rod. Figs. 13 and 14 are respectively a side and plan view of the wringing-lever. Figs. 15 and 16 are respectively a side and plan view of the brush-clamp, and Fig. 17 is a detail showing how a pivotal connection or hinge-joint is formed. Figs. 18 and 19 are respectively a side and edge view of the centering-rod. Figs. 20 and 21 are views of a modified mop-head, respectively showing the sponge mops open and closed; and Fig. 22 is a front view of Fig. 21.

In general the mop or brush consists of a head made with a plurality of mops A B and a brush C, Figs. 1 to 5, hinged together in the

manner hereinafter described. The parts A B each have pads *a b*, respectively, of sponge or other absorbent material, and the part C has a brush of bristles *c*.

D is the handle, to which mop A is attached; E, the adjustable clamps carrying brush C; F, the wringing-lever, which operates mop B; G, the connecting-rod from wringing-lever F to sliding rod H; I, the gooseneck-centering rod, pivoted at one end to the ferrule D' and connected at the other end to the wringing-lever F.

J is the finger-clutch, which holds the parts in any desired position.

*The mop proper.*—The aforesaid pads *a* and *b*, preferably of sponge, are secured to backs 1 and 2, respectively, in any suitable manner, as by fastening the sponge in grooves by transverse pins. Said backs 1 2 may be of wood and provided on the top with skeletonized castings 3 4, respectively. Said castings 3 4 are of malleable iron or other malleable metal, 5 5 being ears on casting 3, originally cast with open slots, in which set pins 6 6, cast integral with the hinge-rods 7, Fig. 3. In assembling, the pins 6 are set in said slots and then the ears 5 5 pinched together by pliers or other tools. In this manner a bearing for the pins 6 6 is most effectively and cheaply produced. Hinge-rods 7 7 pass freely through holes in casting 4 and are provided with coiled springs 8, which bear at their upper ends against washers 9 or against the heads of said rods 7 7, Fig. 2. In wringing the mop the rods 7 7 provide a hinge movement, permit the part B to pass from the position of Figs. 1 or 2 to that of Fig. 3, and increase and equalize the pressure of wringing-lever F, which wrings out the surplus water. Said castings 3 and 4 are provided with integral lugs 3<sup>x</sup> 4<sup>x</sup>, having slots which are originally open and are then pinched to form eyes for screws *e e f' f'*, by which the said castings are secured to the backs, as shown.

The clamp E, of malleable iron or other malleable metal, is preferably yoke-shaped, Figs. 4 and 16, 10 11 being the arms which carry the body of the clamp proper, and 12 12 being ears connected with the arms 10 11 by the bar 14. Said ears 12 12 are cast with open slots 15, Fig.



17, which fit easily on pins 16 16 of the ferrule D', Fig. 2. After assembling, the ears 12 12 are pinched together by pliers or other tools, forming a hinge-joint on said pins 16 16, which  
 5 pins are preferably cast integral with said ferrule D'. A set-screw 19, threaded through a standard 18, preferably cast integral with the bar 14, adjusts clamp E by bearing on a shoulder 21 of the ferrule D', Figs. 2 and 16. The  
 10 said arms 10 11 of the clamp E each carry jaws 22, in which fits one edge of back  $c^2$  of the brush C. The other edge of the back  $c^2$  fits into corresponding jaws 24 of the casting 4, Figs. 2 and 3. By adjusting screw 19 the  
 15 jaws 22 24 will firmly clasp brush C, and said screw also provides for readily changing the brush C. The clamp E is provided with integral stops 26 to rest on the top of a pail X.

The wringing-lever F, of malleable metal,  
 20 has a yoke or fork  $f$  at its lower end, with cross-bar 29. Pins 30, 31, and 32 are cast integral with said wringing-lever at proper positions. Pins 30 pivot in eyes 38 of ears 39 of connecting-rod G, pins 31 pivot in eyes 36  
 25 of ears 37 of centering-rod I, and pins 32 in slots 34 of ears 35, cast integral with the casting 3 of mop A. Said casting 3 is of malleable metal, and after assembling said ears 35 are pinched together, as before described.

30 The centering-rod I, of malleable metal, is cast with a gooseneck 42 at the lower end, as indicated by dotted lines, Fig. 18. Said gooseneck fits over a pin or pins 44, cast integral with the ferrule D', said ferrule D' being cast  
 35 with a slot 46, Fig. 6, to permit of the insertion of the gooseneck 42, and with a shoe 47, which is fastened to the mop A. In assembling, said gooseneck 42 is first slipped over the pin 44 and then pinched up, Fig. 18, forming an eye, which pivots on the pin 42. Said  
 40 ears 37 of the lever I are cast originally flaring. The eyes 36 36 are then drilled perpendicular to each of said ears 37, Fig. 19. In assembling, said ears 36 are brought to line  
 45 with the pins 31 and then pinched parallel, forming a hinge bearing on said pins 31. Said wringing-lever F is preferably formed on a reverse curve, as shown, and the shapes and lengths of said levers F and I are such that  
 50 in passing from the position of Fig. 2 to that of Fig. 3 the said levers shall press the parts A B together parallel. The action of the lever F and rod I is such as to bring the mops accurately parallel, and this prevents injury  
 55 to the pads  $a b$ , effectually wringing out the surplus water, the movement centering about the pin 44.

The connecting-rod G is formed of malleable metal and with the pin 50 and ears 39.  
 60 Said ears are cast originally flaring, as indicated by dotted lines in Fig. 11. The eyes 38 are drilled perpendicularly to their respective ears, or they may be cast in said ears and are brought to line with the pins 30 of lever F and then pinched parallel, thus forming a hinge connection with said lever F.

The sliding rod H is equipped at its lower end by threading or riveting with the guide 54, which works on the handle D, and at its other end with the finger-clutch J. Said  
 70 guide 54, of malleable metal, has integral ears 56, originally cast with open slots, which are fitted over said pins 50 and then pinched up, forming a hinge connection with the rod G, Fig. 1.

75 The finger-clutch J, fixed on the upper end of rod H, is provided with a guide-ring 60, which works on handle D, and with a body 61, which furnishes firm support to the clutch and a grip for the hand of the operator. (See  
 80 Figs. 7 to 10.) The clutch is made in two parts 64 65, each being pivoted on the body 61 at 67 68, respectively, as shown. The lower arms 70 71 carry pins 72, which are normally  
 85 pressed into holes 73 in the handle D by the spring 75, coiled on pins between the arms 70 71, as shown. At their upper part said arms 70 71 are curved, as at 76 77, respectively, the two parts forming a clutch for the fingers.  
 90 In the handle D are holes 73, corresponding to the positions of the mop shown in Figs. 1, 2, and 3 and other positions, if desired. When clutch J is slid to any of these holes and the fingers removed, said clutch locks the mop  
 95 in that position until released by the operator.

The operation of the mop is clear from the foregoing description. After the mops A B are wetted the handle is turned over and rested on the pail X, Fig. 1, and the pads  $a b$   
 100 wrung out by pushing the lever H down, Fig. 3. Then by drawing up said lever H the mops A B are restored to the position of Fig. 2 and the mop is ready for use. The brush C and the mops A B adapt the article to various  
 105 uses, the bristles scouring and the mops completing the cleaning of any surface, as a floor.

From the foregoing description it is evident that the various parts are so formed with their  
 110 ears, pins, slots, and eyes as to be very readily assembled, the slots being cast open in the various parts and then pinched over pivot-pins and the ears, where necessary, being cast flaring and then pinched parallel. This mode  
 115 of construction is also employed in the modification illustrated in Figs. 20 to 22, inclusive. In these figures the parts A B C, clamp E, and levers F' G H are constructed substantially as hereinbefore described. The hinge  
 120 between the parts A and B is, however, now made with plates 80 80, pivoted at one end on pins 82 and at the other end having slots 83, which work on pins 85 and permit of the separation and approach of the parts A B  
 125 according to their several relative positions, Figs. 20 and 21. The lever F' differs slightly in shape from lever F. In ears 87 of cross-bar 88 is pivoted an arm 90, preferably curved as shown. A spring 92 holds said arm 90, so  
 130 that the post 93 bears under the junction of the arms 95 95, Fig. 20. When the mop is



moved to the position of Fig. 21, said arm 90 presses the mops A B together, squeezing out the sponges.

Now, having described my improvements, I claim as my invention—

1. The combination of a plurality of mops, a spring-hinge therefor, a handle, and a wringing-lever, and a centering-rod pivotally connecting the wringing-lever and the handle, and said wringing-lever and centering-rod being adapted to press the working faces of said mops together, substantially as described.

2. The combination with a plurality of mops, of a hinge consisting of headed rods pivoted to one mop and working through another, and spiral springs between the heads of the rods and the latter mop, substantially as described.

3. The combination with the handle and mops, of a hinge consisting of headed rods pivoted to one mop and working through another, spiral springs between the heads of the rods and the latter mop, a wringing-lever, a centering-lever, and connecting-rods, substantially as described.

4. The combination with a handle and mops, of a hinge consisting of headed rods pivoted to one mop and working through another, spiral springs between the heads of the rods and the latter mop, a wringing-lever, a centering-rod, connecting-rod, and a clutch adapted to engage said handle, substantially as described.

5. The combination of two mops hinged together, a handle attached to one mop, a clutch adapted to engage thereon, a lever attached

to the other mop, a connecting-rod from the clutch to said lever, and a centering-rod connected to said lever and to said handle, whereby the working faces of the mops may be pressed together, substantially as described.

6. The combination with a handle and mop of a casting 3 provided with a jaw, a clamp E provided with a corresponding jaw, a brush within said jaws, an arm adapted to be pivoted on the handle, and an adjusting-screw working in the arm and against the handle and adapted to position said clamp E, substantially as described.

7. A finger-clutch consisting of a body part H provided with a guide-ring which works on a handle, and of spring-actuated arms pivoted on said plate H and normally engaging with the handle, substantially as described.

8. In a mop-head, the combination with the handle, of the wringing-lever F formed of malleable metal, a fork at the end thereof adapted to a pivotal connection with the mop and provided with pivotal pins, a centering-lever I provided with flaring ears at one end adapted to engage the pins of the wringing-lever F and with a gooseneck at the other end adapted to engage said handle, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 18th day of March, 1896.

DE LACY E. BALLAM.

Witnesses:

BERNARD J. ISECKE,  
HENRY V. BROWN.