

(No Model.)

2 Sheets—Sheet 1.

H. F. NOYES.  
HOSE COUPLING.

No. 547,887.

Patented Oct. 15, 1895.

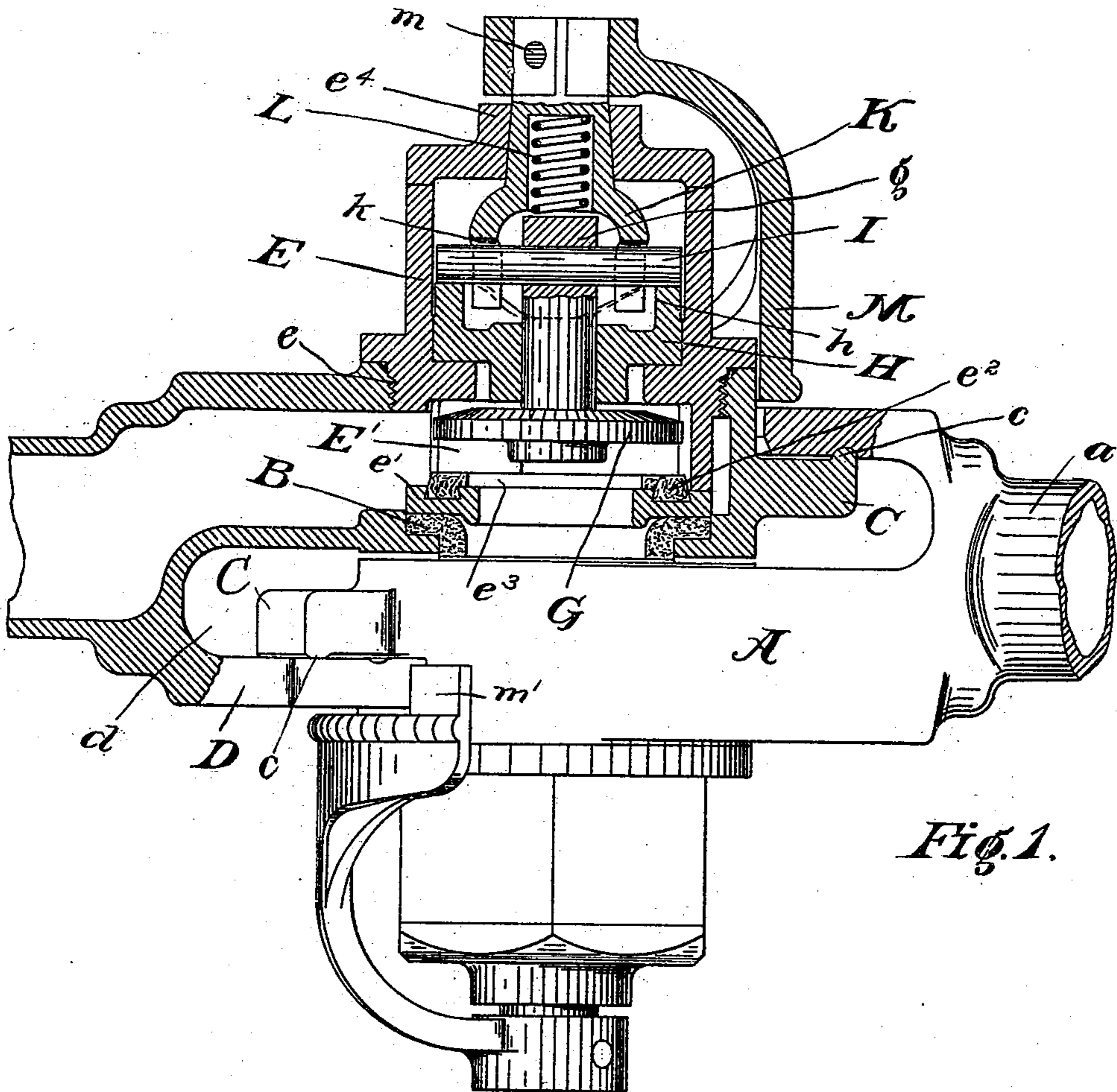
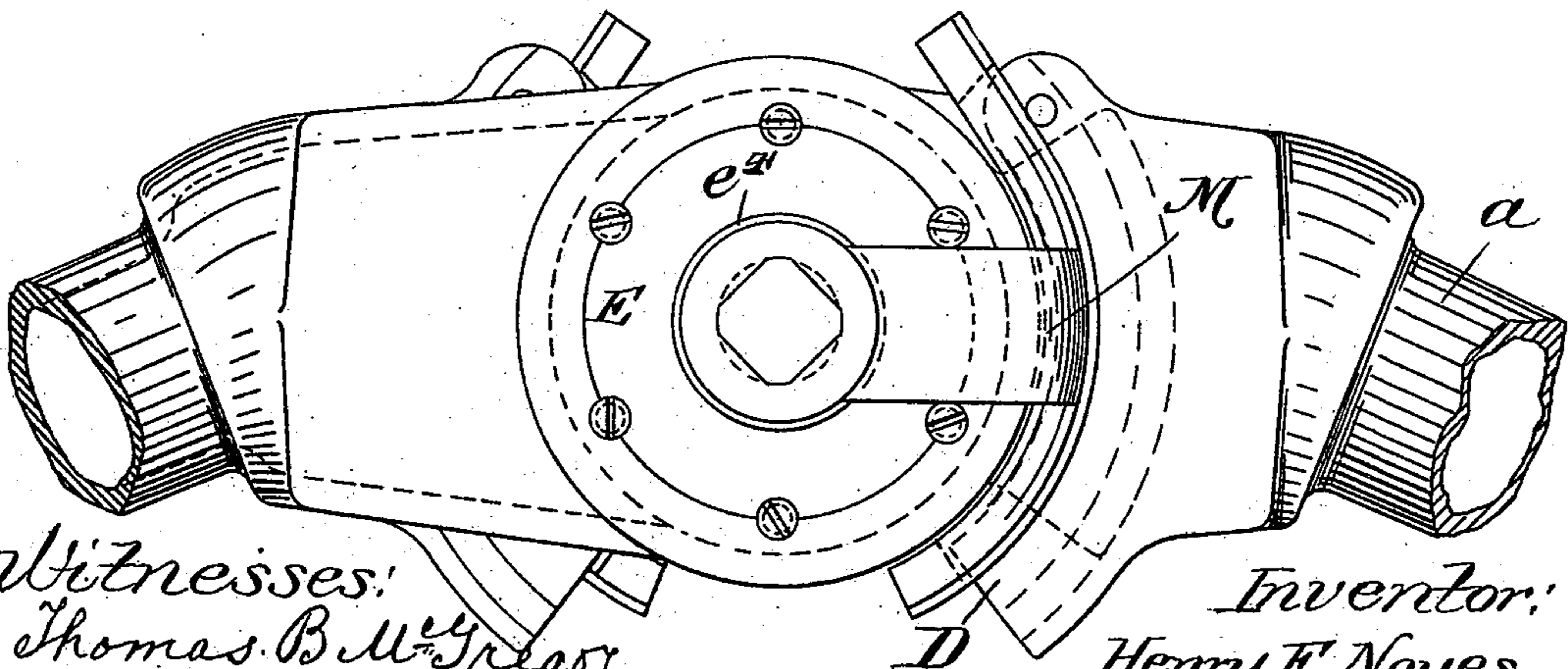


Fig. 1.



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Inventor:  
Henry F. Noyes.  
Fig. 2. By Dunning & Dunning  
Attys.

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2 Sheets—Sheet 2.

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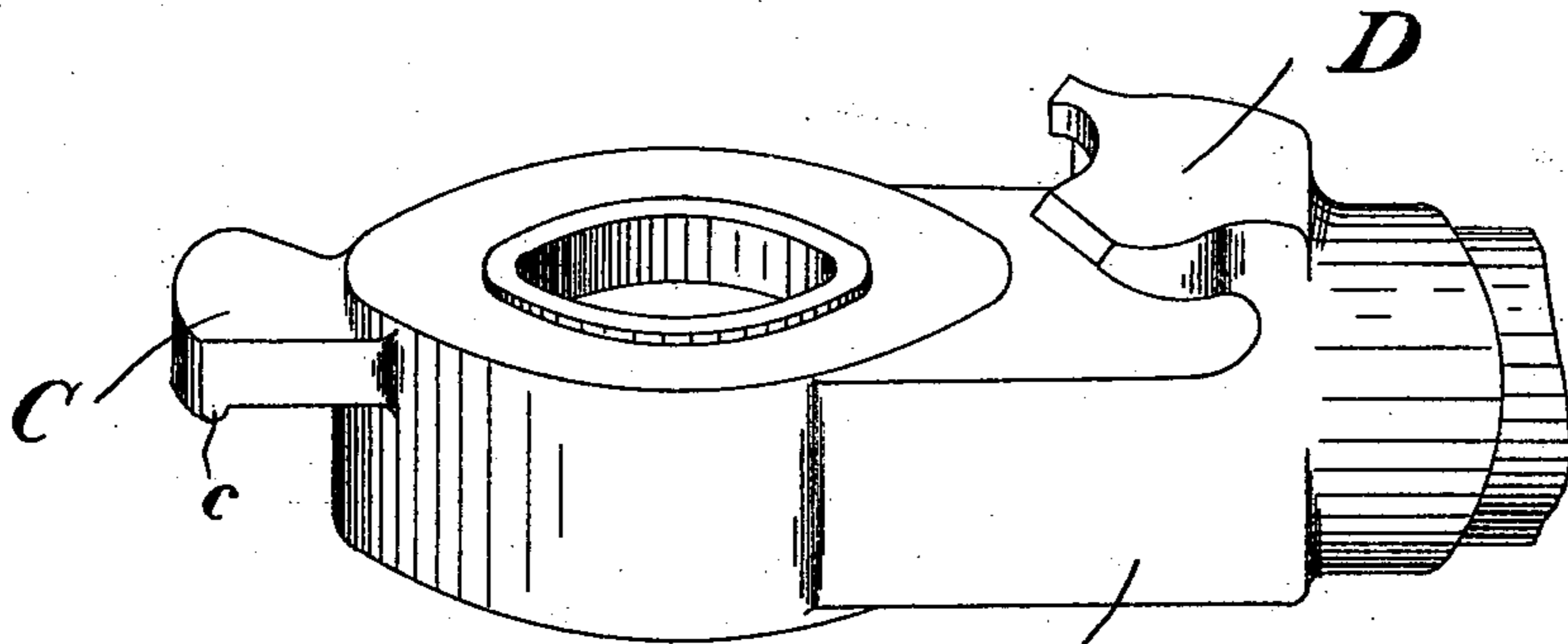


Fig. 3. A

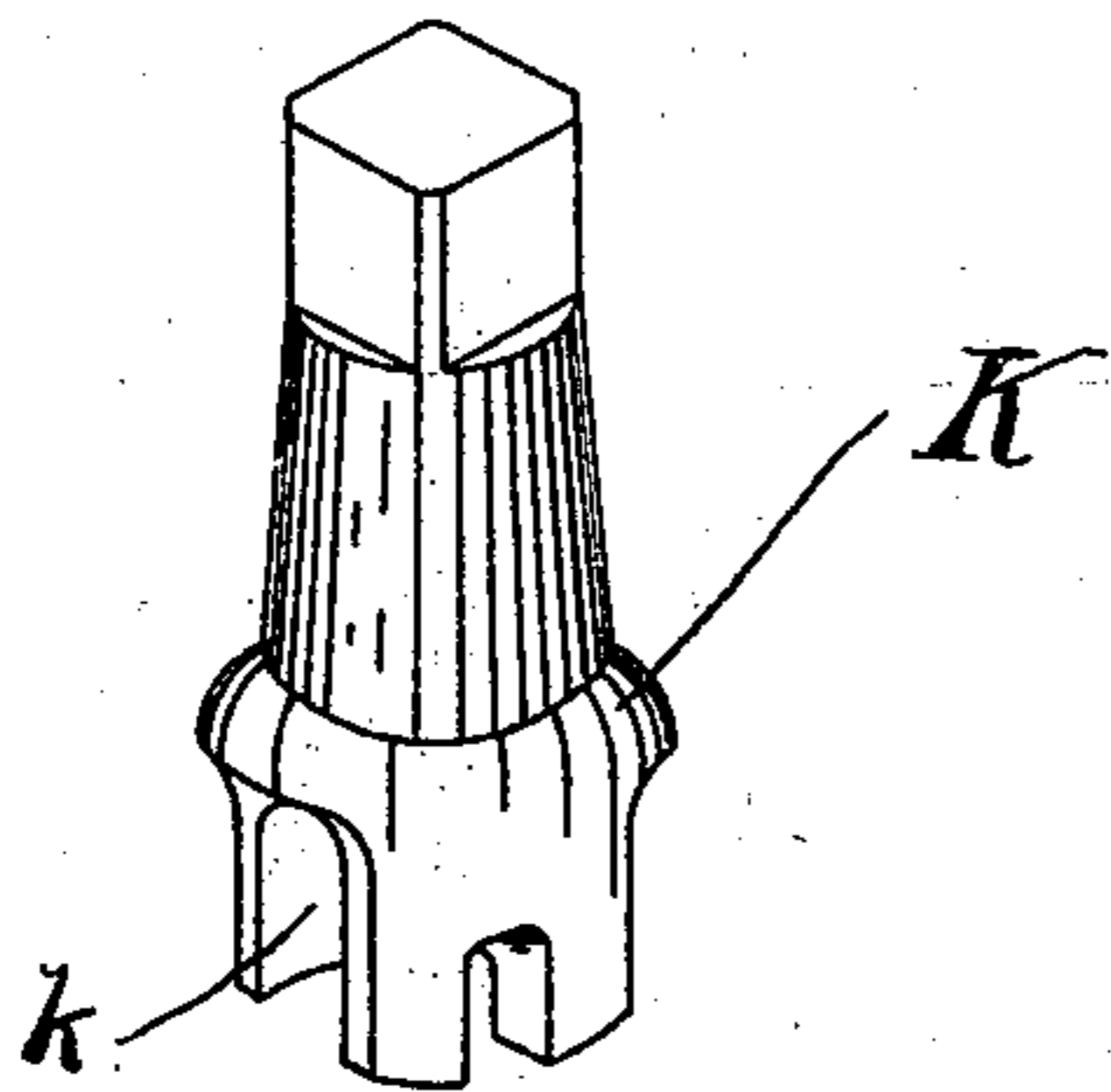


Fig. 5.

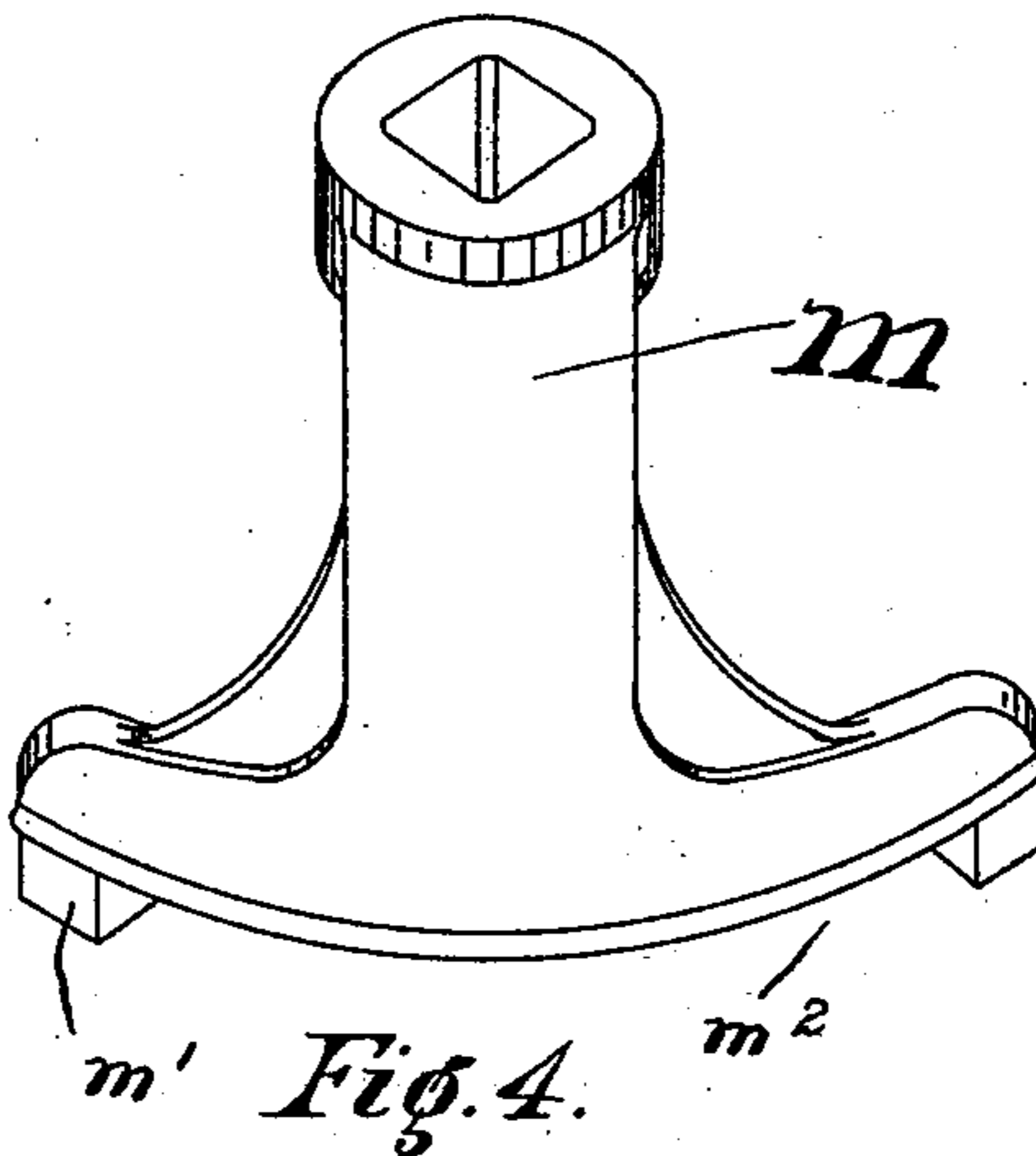


Fig. 4.

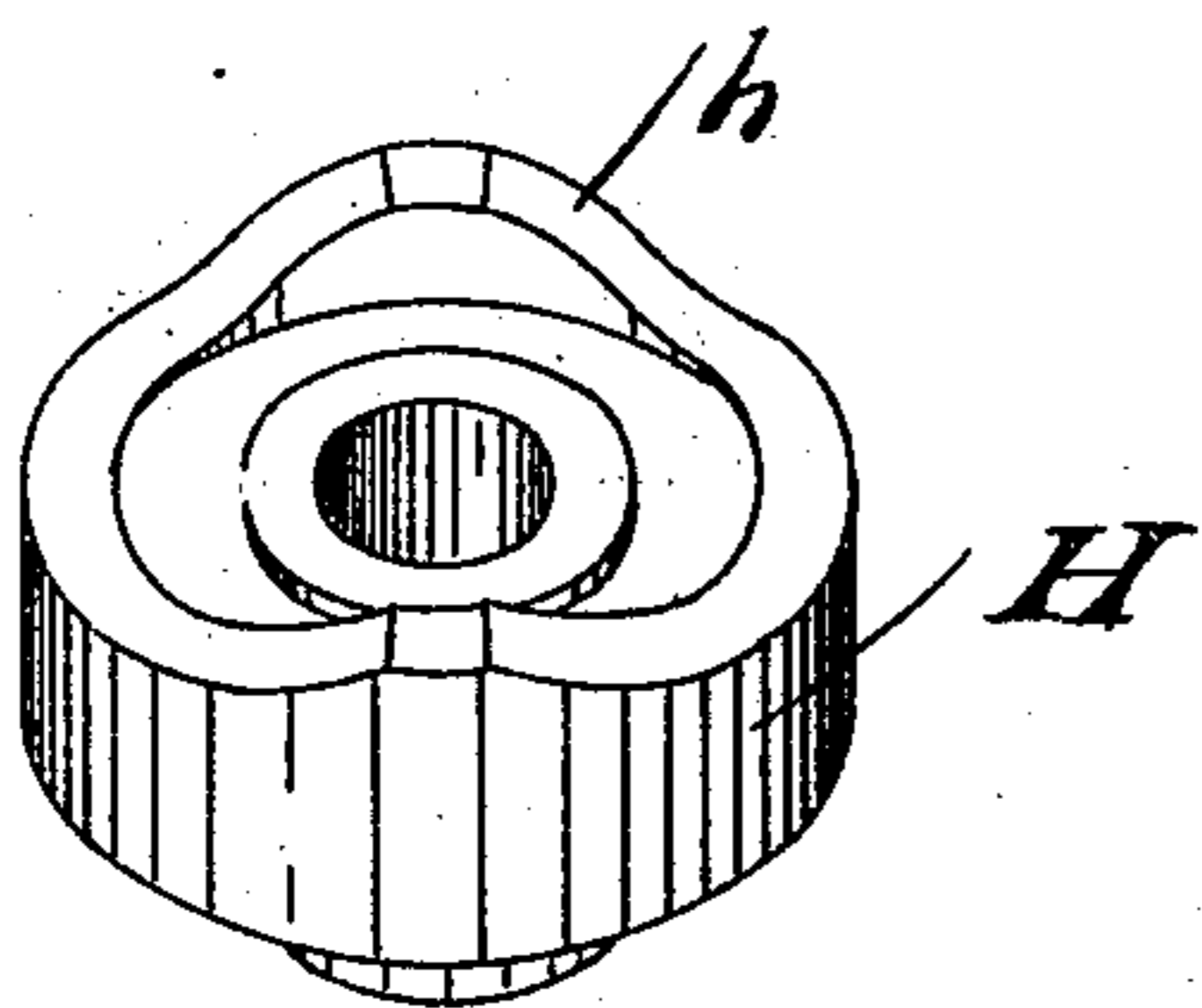


Fig. 6.

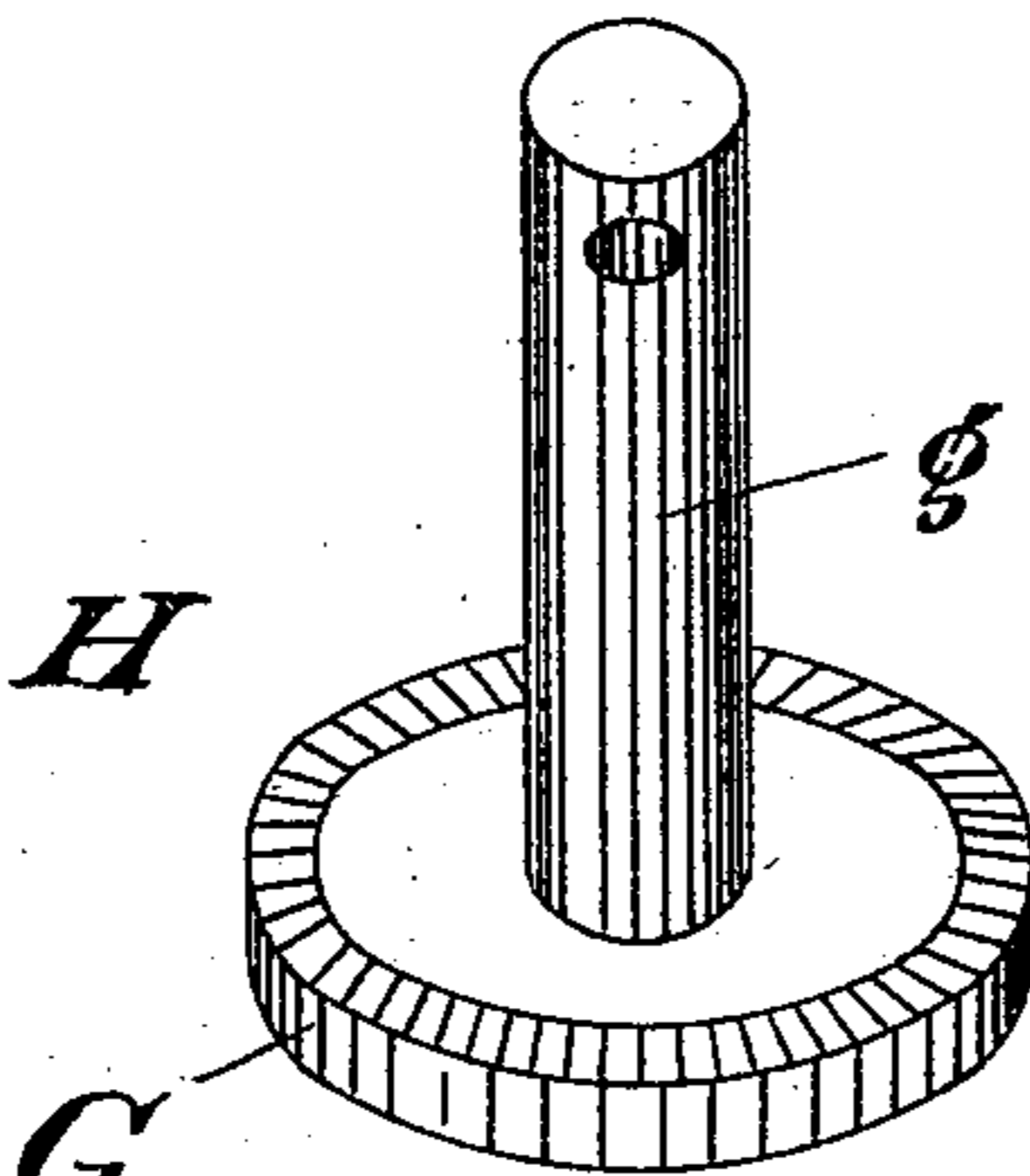


Fig. 7.

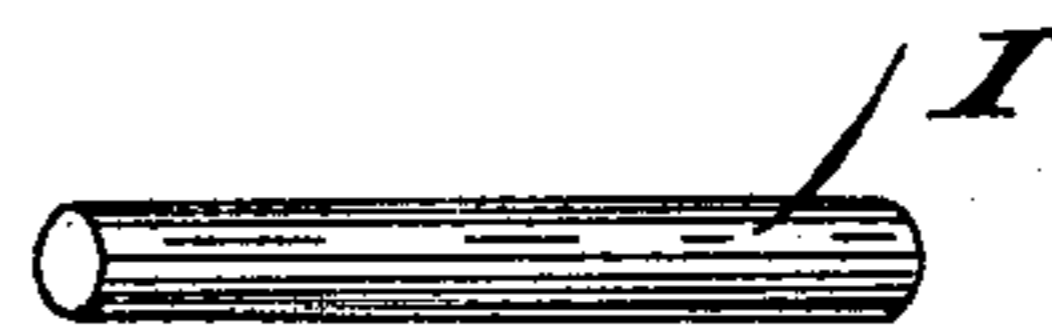


Fig. 8.

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# UNITED STATES PATENT OFFICE.

HENRY F. NOYES, OF ELGIN, ILLINOIS, ASSIGNOR OF FIVE-SIXTHS TO SYLVESTER M. WINNEY, OF SAME PLACE, AND JAMES M. BARR, OF SPOKANE, WASHINGTON.

## HOSE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 547,887, dated October 15, 1895.

Application filed June 21, 1894. Serial No. 515,223. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY F. NOYES, of Elgin, Illinois, have invented certain new and useful Improvements in Hose-Couplings, of which the following is a specification.

My invention relates particularly to hose-couplings that are attached to the air-brake system of railroad-trains, and has for its object the providing of a simple, economical, and efficient hose-coupling adapted for such uses; and it consists in providing two engaging interlocking coupling-shells with independent transversely-movable valve mechanism, so arranged that the act of coupling or uncoupling the hose ends acts to open or close the valves.

In the drawings, Figure 1 is a side elevation showing two couplings in their locked position, one of such couplings being shown in section; Fig. 2, a plan view of the two couplings shown in their locked position; and Figs. 3, 4, 5, 6, 7, and 8 are perspective views of details of the mechanism hereinafter described.

In constructing my improved coupling I use a shell A of the type in general use, provided with an end *a*, to which the flexible hose ends may be secured in any convenient way. I provide the coupler-shells with the usual abutting-face B, formed, preferably, of rubber, and which forms the contacting-surfaces of both coupling-shells, through the aperture of which the compressed air passes. The coupler-shell is also provided with the usual cam-shaped interlocking arm-lugs C, adapted to fit within and become locked with a projecting arm D, which extends outward from the body of the engaging-shell, leaving a space *d* between it and the valve-seat portion. This is the ordinary and usual construction, and is so arranged that two coupler-shells can be interlocked with each other, one portion being provided with an inclined cam-surface and groove into which a rib *c* on the arm-lug of the engaging-shell fits for the purpose of securely and firmly holding the parts in their engaged positions.

To provide each coupler-shell with a valve for the purpose of confining the air-pressure in the air-brake mechanism and prevent its escape

therefrom when the cars are uncoupled, I provide a cage E, which has a threaded portion *e* entering a threaded opening in the upperside of each coupler-shell, and which is provided with a lower projecting circular flange E', which contacts and holds in place a metallic valve-seat *e'*, having a cushion portion or seat proper *e''*, which is secured in the metallic portion in any convenient manner. To close the opening *e''* in this valve-seat, I provide a disk G, which has a vertical motion directly away and toward the valve-seat for the purpose of opening or closing the aperture. To raise and lower this valve, I prefer to provide it with an uprising cylindrical valve-stem *g*, having a bearing in the cam-socket H, such socket being provided with a cam-surface *h*, on which a cross-pin I rests, which is secured in the upper end of the valve-stem in any convenient manner, preferably by driving it in snugly. The above arrangement is such that the turning of the valve-stem causes this pin to rise on the cam-surface of the socket and open the valve, as in Fig. 1, while the returning of such valve-stem to its normal position permits the valve to be closed, as hereinafter described.

To actuate the valve, I provide the hub portion *e''* of the cage with a tapered opening, into which is fitted a socket or yoke wrench *k*, having its lower end provided with a socket *k'* that straddles the pin of the valve-stem and its upper end with a square portion adapted to be engaged by an actuating-lever. Interposed between the inner surface of this socket-wrench and the end of the valve-stem is a spiral spring L, so arranged that it tends to force the valve back to its normal or closed position when the coupler-shells are disengaged. This spring, however, may be dispensed with and an upper cam provided in the cage, the opposite in shape to the cam-socket H, so that it will positively force the valve-stem with its valve into its closed position as the coupler-shells are disengaged.

To actuate the socket-wrench, and by it the uprising valve, I secure to the square end of such wrench an actuating-lever M in any convenient manner, preferably by means of a pin *m*, and its downwardly-projecting free

end is provided with lugs  $m'$ , which form a recess  $m^2$  and straddle the lug D on the coupler-shell, so that as the coupling-shells are engaged or disengaged this actuating-lever is vibrated and the valve opened or closed, respectively. When these shells are in their coupled or engaged position, the valves are intended to be in their open position, so that air may pass freely through from one car to another and the brake mechanism be applied as necessary. Again, should the coupling-shells be pulled apart while two cars are in service the valves would remain and be held in their open position to permit the escape of air and apply brakes in the ordinary manner. This is a distinct and decided advantage. When it is desired to uncouple the cars, and the couplings are uncoupled, the act of uncoupling the shells turns the actuating-levers around about an arc of ninety degrees, so that the valve is actuated and the mechanism brought into such relation with each other that the valve-stem is forced down, thereby closing the opening in the pipe and preventing the escape of air or the entrance of dirt into the brake mechanism.

In using the term "transversely-movable valve" in the specification and claims I mean a valve that moves away from and into contact with its seat in contradistinction to a valve that has a rubbing-contact on its seat for opening or closing the valve-aperture.

I claim—

1. In hose couplings, the combination of a single coupler shell provided with a valve seat, a cage for holding such seat in place, a face cam arranged within such shell, a transversely movable valve provided with a stem portion, a cross piece on such stem to raise such valve as the stem is rotated in one direction, and means for returning the valve stem and valves to their closed position as the stem is vibrated in the opposite direction, a socket wrench for such valve stem, and an actuating lever attached to the socket wrench, substantially as described.

2. In hose couplings, the combination of two engaging interlocking coupler shells, a valve seat within each shell, a nut with legs for holding each seat in place, a transversely movable valve within each shell provided with a stem portion, a cross piece on each stem adapted to contact a cam, a cam within each shell having a bearing for each valve stem, and adapted to raise such valve from its seat as its cross piece is rotated in one direction and to return it to its seat as the cross piece is rotated in the opposite direction, a socket wrench having a bearing in each nut and straddling each cross piece, a lever attached to each socket wrench and having projections adapted to contact lugs on the opposite coupling so that as the couplings are engaged the lever is vibrated in the direction required to raise the valve from its seat and as they are disengaged the lever is vibrated in the direction required to return the valve to its seat, substantially as described.

3. In hose couplings, the combination of two engaging interlocking coupler shells, a valve seat within each shell, a nut with the legs for holding each seat in place, a transversely movable valve within each shell provided with a stem portion, a cross piece on each stem adapted to contact a cam, a socket wrench having a bearing in each nut and adapted to actuate each cross piece, a lever attached to each socket wrench and actuated by the opposite coupling, a cam within each shell having a bearing for each valve stem, the whole arranged to raise each valve from its seat as the couplings are rotated to their engaged position and hold each valve away from its seat as the couplings are pulled apart without rotating, and to return each valve to its seat as the couplings are rotated to their disengaged position, substantially as described.

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Witnesses:

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