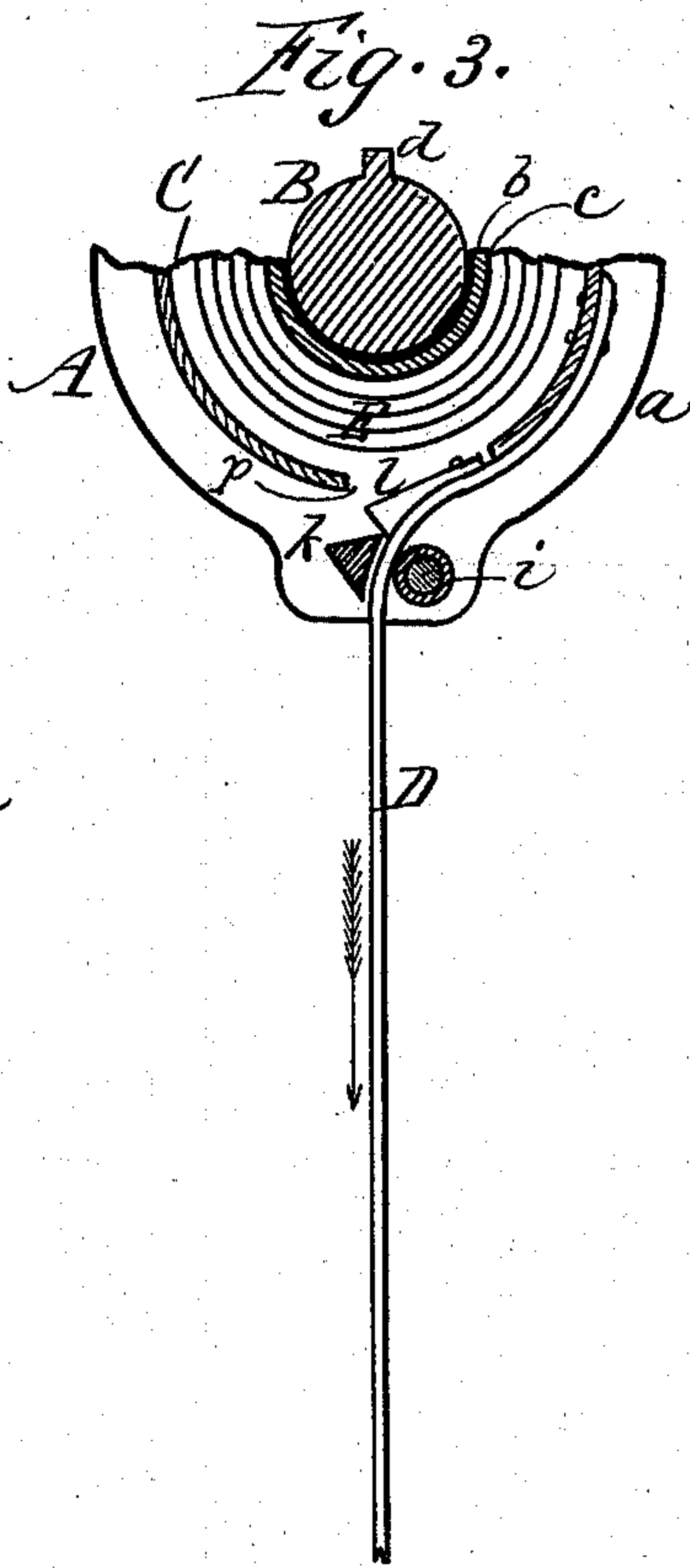
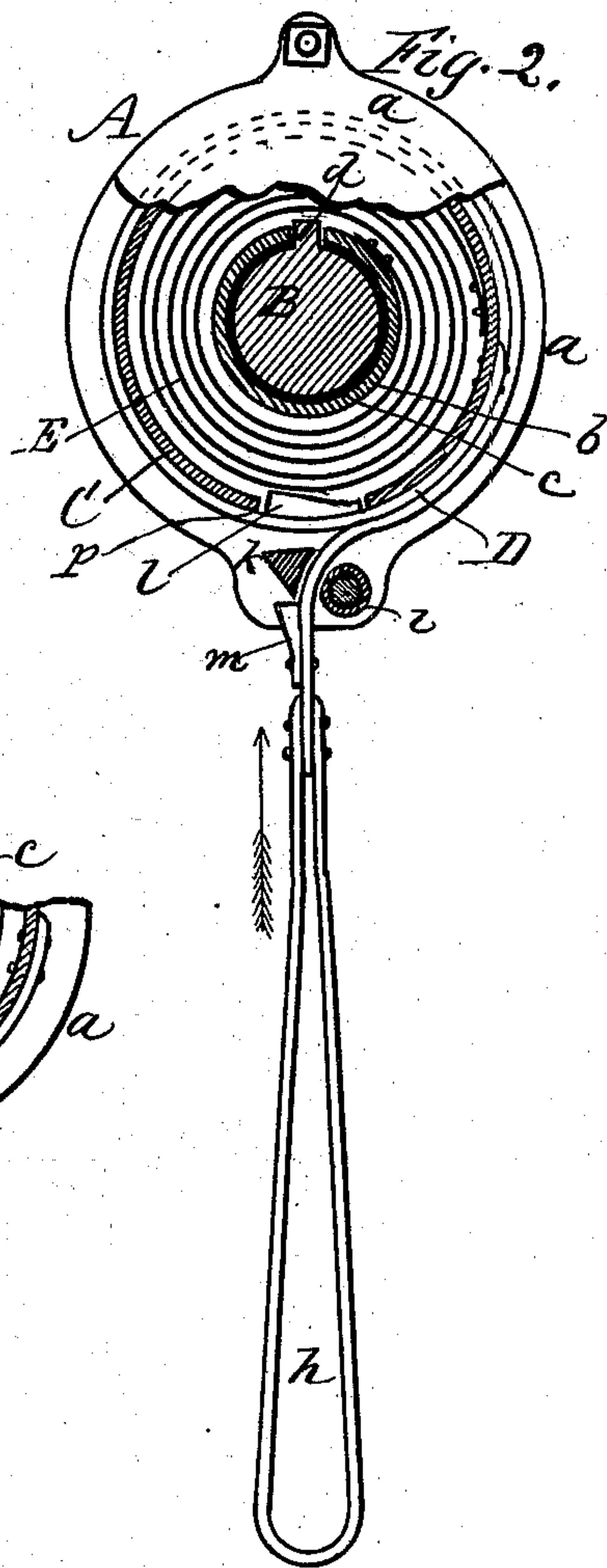
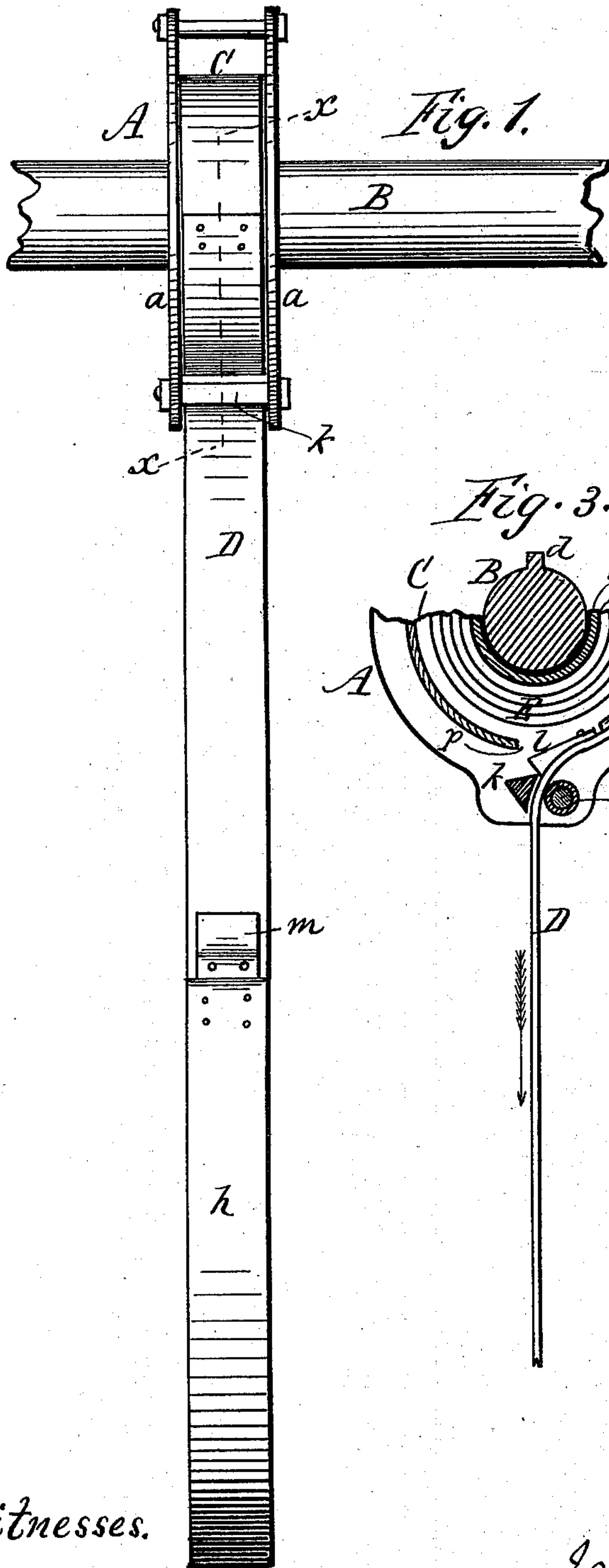


(No Model.)

J. P. BARNES.  
HAND STRAP FOR STREET CARS.

No. 559,022.

Patented Apr. 28, 1896.



Witnesses.

Chas. H. Widener.  
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Atty



# UNITED STATES PATENT OFFICE.

JERMAIN P. BARNES, OF ROCK STREAM, NEW YORK.

## HAND-STRAP FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 559,022, dated April 28, 1896.

Application filed June 16, 1894. Serial No. 514,825. (No model.)

*To all whom it may concern:*

Be it known that I, JERMAIN P. BARNES, of Rock Stream, in the county of Yates and State of New York, have invented a certain new and useful Improvement in Hand-Straps for Street-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

My improvement relates to the holding-straps of street-cars. Ordinary straps have double loops, one of which slides on the supporting-bar of the car and the other serves as the handhold for the passengers. They are inconvenient in use, as they come in contact with the heads of passengers.

My invention consists of a take-up device constructed, arranged, and operating as hereinafter described, and embodied in the claims.

In the drawings, Figure 1 is a front elevation of the device attached to the suspending-bar and with the strap drawn down. Fig. 2 is a cross-section in line *xx* of Fig. 1, showing the strap drawn up. Fig. 3 is a similar view of the lower portion of the device with the strap drawn down.

The apparatus is in the form of a case with a spring-drum on which the holding-strap winds, the latter being gaged in its up and down movements by stops of peculiar construction attached to the case.

A indicates the case. It consists of two side plates *a a*, with a central hole of sufficient size to slide over the supporting-bar B. Instead of being thus attached it may be attached directly to a bracket secured to the car, or it may have a loop at the top which slides on the bar. When attached as shown in the drawings, it has a central thimble *b*, provided with a soft lining *c* of rubber or leather, and is so arranged as to slide on the bar and be secured at any position by a set-screw. To prevent the case from turning on the bar, the latter is provided with a longitudinal rib *d*, and the thimble with a corresponding slot which embraces the rib.

C is the spring-drum on which the holding-strap D winds. The drum is fitted to turn between the plates of the case and is operated by a coiled spring E, located inside, one end being attached to the drum and the other

to the thimble *b*. The upper end of the holding-strap D is simply attached to the periphery of the drum, and the unwinding of the strap winds the spring, and vice versa. The lower end of the strap has a loop *h*, which forms a handhold. This loop is made as short as possible, so that when the strap is drawn up there will not be much projection downward.

Thus far the device is similar to a tape-measure or sash-balance. To make the device effective, it must be provided with stops to gage both the up and down movements of the strap, one to prevent the loop from drawing up away from a vertical line, where it can be readily seized, and the other to prevent strain on the attachment to the roller. The stop arrangement consists of a roller *i* and fixed stop *k*, secured in the bottom of the case, between which the strap runs, and two blocks *l m*, secured to the strap in reverse positions and near the opposite ends of the strap, as shown. In unwinding the strap the block *l* strikes the stop *k* near the end of the down movement, as shown in Fig. 3, and in winding it up again the block *m* strikes the same stop, as shown in Fig. 2. By this means the strap is allowed a given movement in winding and unwinding and is then stopped. The roller being on that side where the bend occurs in the strap in passing from the case, it lessens the friction and insures easy movement. The stop has two sharp edges on opposite sides against which the blocks strike.

In order to prevent an enlargement under the strap where the block *l* is located, the body of the drum C is cut away, forming an opening *p* opposite to the block *l*, so that in winding the strap the block strikes into the opening and lies flush with the surface of the drum, as shown in Fig. 2. By this means it is out of the way and the strap has a smooth winding-surface and there is no enlargement. This is quite essential, as the strap is thick, and in winding over the drum it would make a large projection on one side if the block stood above the surface of the drum.

By the use of this device the hand-strap can be drawn lower in use and forms a more convenient handhold, and at the same time



when not in use the strap is automatically drawn up out of the way above the heads of the passengers.

Having described my invention, I do not  
5 claim simply and broadly a spring-drum for winding the strap.

What I claim as new, and desire to secure by Letters Patent is—

1. In a hand-strap for street-cars, the com-  
10 bination of the case A, the spring-arm C, the strap D winding thereon, the stops *i k* attached to the case, between which the strap passes, and the blocks *l m* attached to the  
15 strap in reverse positions and at opposite ends, as shown and described and for the purpose specified.

2. In a hand-strap for street-cars, the combination of the case A, the spring-drum C provided with the opening *p* in its side, the strap D winding on the drum and provided 20 with reverse blocks *l m*, the upper one of which strikes into said opening in winding the strap, and the stops *i k* between which the strap passes, as shown and described and for the purpose specified. 25

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

J. P. BARNES.

Witnesses:

HOWARD WOOD,  
R. F. OSGOOD.