

(No Model.)

F. L. SHAW.
WINDING ARBOR FOR CLOCKS.

No. 441,708.

Patented Dec. 2, 1890.

Fig. 1.

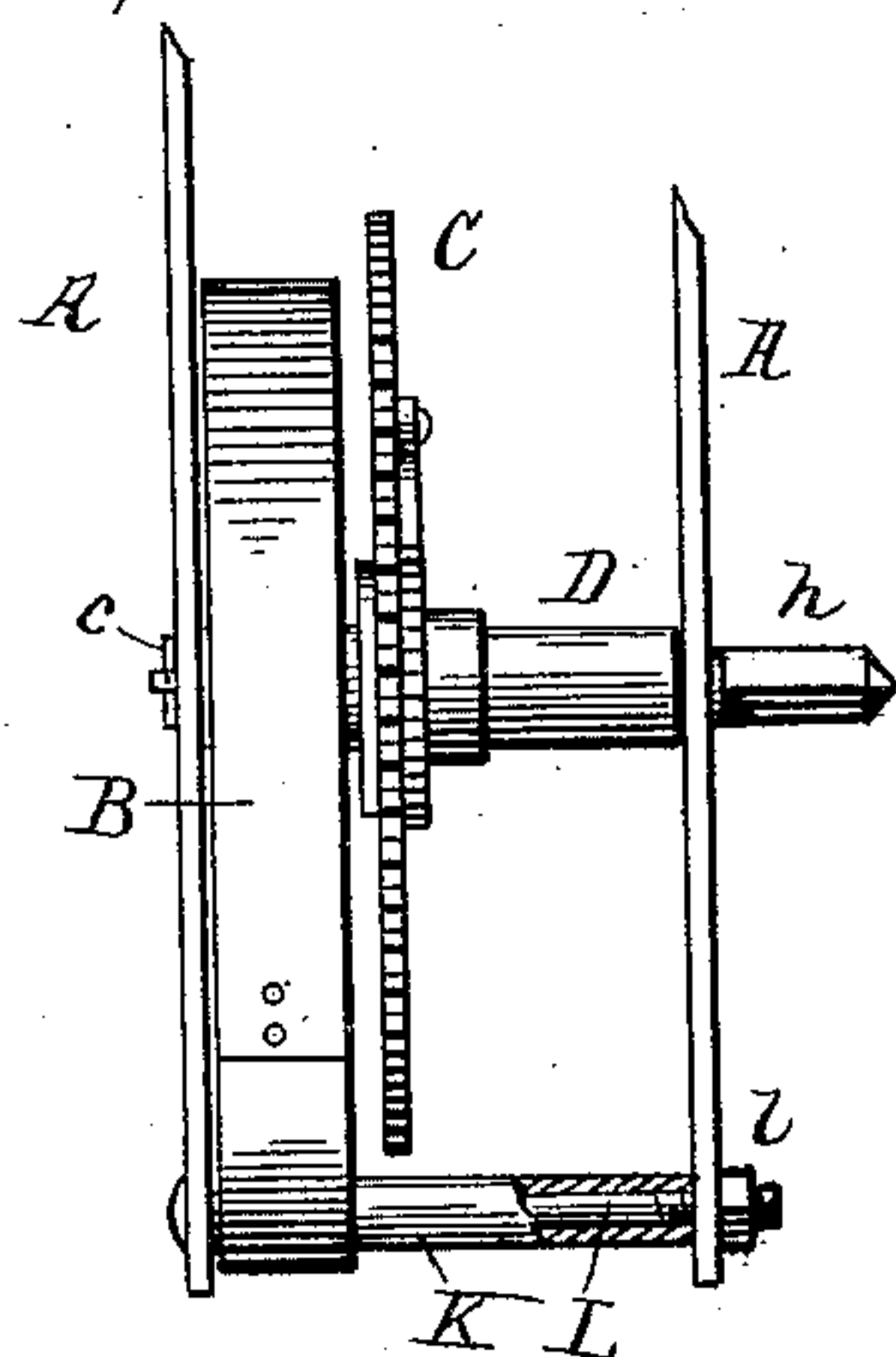


Fig. 2.

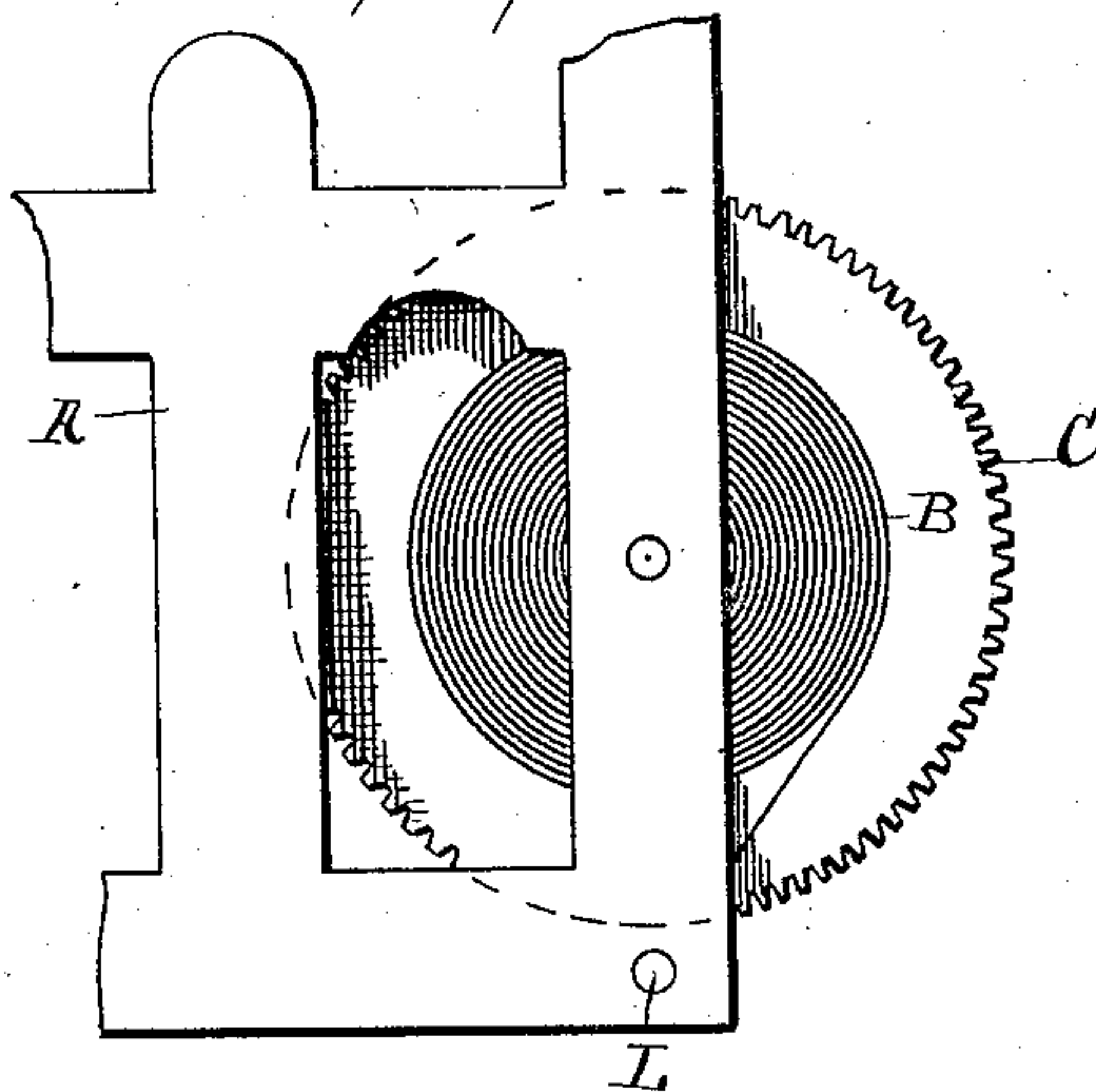


Fig. 3.

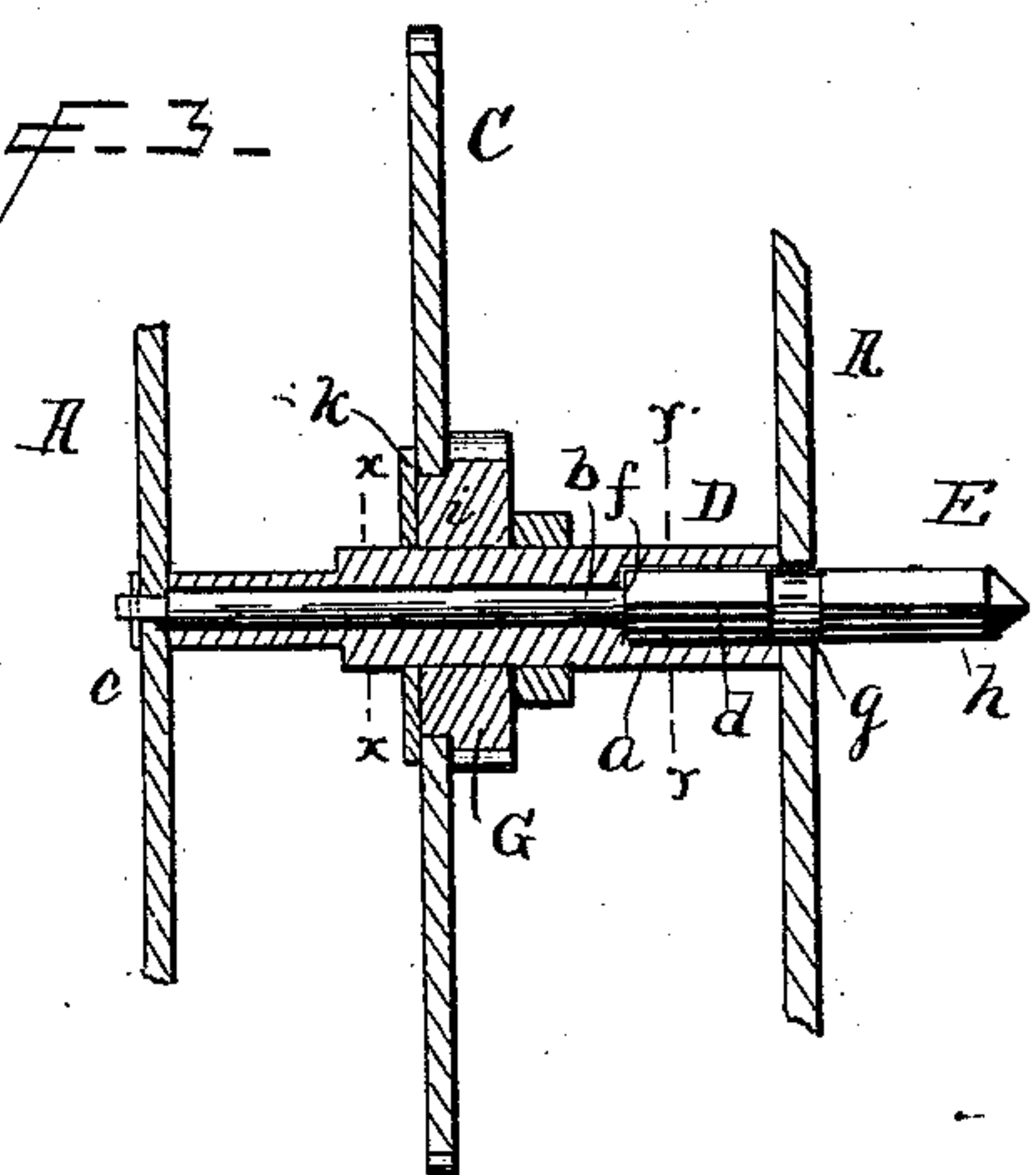
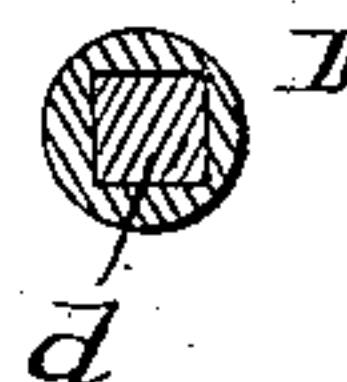


Fig. 4.



Fig. 5.



Witnesses

Norris A. Clark

Jos. C. Ringwalt, Jr.

Inventor

Floyd L. Shaw

Whitney Wright,
Attorneys

UNITED STATES PATENT OFFICE.

FLOYD L. SHAW, OF ROCKLAND, MAINE, ASSIGNOR OF TWO-THIRDS TO
BRADFORD K. KALLOCH, OF SAME PLACE.

WINDING-ARBOR FOR CLOCKS.

SPECIFICATION forming part of Letters Patent No. 441,708, dated December 2, 1890.

Application filed January 30, 1889. Serial No. 298,079. (No model.)

To all whom it may concern:

Be it known that I, FLOYD L. SHAW, a citizen of the United States, residing at Rockland, in the county of Knox and State of Maine, have invented certain new and useful Improvements in Winding-Posts and Corner-Pillars for Clocks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The object of my invention is to render the mainspring and mainspring-wheel removable from the clock-frame without disturbing the rest of the gearing or any of the working parts. In clocks now in use, in order to remove the mainspring and wheel it is necessary to so loosen the plate on one side of the frame that the bearings of the arbors can be lifted out, and this so loosens and disarranges the other gearing that it is considerable and perplexing labor to replace the parts even by an experienced workman. This is especially the case in striking-clocks, as the teeth of the gears have to be adjusted to a given position in replacing, in order to produce the proper motion of the striking mechanism. Devices for removing the spring and wheel without disturbing the other parts are desirable for the reasons above mentioned.

In the drawings, Figure 1 is an edge elevation of a portion of a clock-frame, showing the mainspring, mainspring-wheel, and its connections, and exhibiting my improvement for readily removing the spring and wheel from place. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged horizontal section through the arbor of the mainspring-wheel. Figs. 4 and 5 are cross-sections of Fig. 3, respectively, in lines $x x$ and $y y$.

My invention consists, essentially, in the combination, with the mainspring-wheel, of a sleeve on which the wheel is placed, provided with a spur for the attachment of the spring and an arbor running through the sleeve, the ends of the arbor projecting outward, forming the bearings in the frame and also the winding-stem on one side, the whole so ar-

ranged that the arbor can be removed endwise from the sleeve, leaving the sleeve, with the mainspring and wheel attached, free to be removed bodily from between the side plates of the frame.

In the drawings, A A show the two side plates of the frame of a clock-movement.

B is the mainspring, and C the mainspring-wheel. The other gearing of the clock is not shown, being of the usual construction and arrangement.

My improvement is as follows: D is a hollow sleeve of a length just sufficient to fit easily between the two side plates A A. On the inside the sleeve is provided at one end with a prismatic socket a , extending any desired portion of the length, and having at its inner end a shoulder b , produced by contracting the bore of the sleeve.

E is the arbor. It is provided with a prismatic portion d , that fits the interior socket a of the sleeve, and it also has a shoulder f , which, when the arbor is inserted in place in the sleeve, strikes the shoulder b of the latter. The arbor has cylindrical journals g and a square stem h , that forms the winding-stem, both ends projecting out through the side plates and forming the bearings. The arbor is of such diameter its whole length that upon taking out the pin c it can be drawn endwise out through the bearings in the plate, leaving the sleeve free, and the latter can then be removed without difficulty from the frame.

G is the ratchet-wheel. As shown in Fig. 1, it is made fast to the outside of the sleeve and has a hub i , on which the driving-wheel C turns loosely, being retained in place by a washer k on the opposite side, riveted to the hub of the ratchet. A pawl or click engages with the ratchet in the usual way. To wind the clock, the key is applied to the winding-stem h as in common clocks, and the arbor and sleeve are turned as one fixture, and when the movement is running the arbor and sleeve also turn together to form practically one arbor.

The above describes one form of clock in which the turning of the arbor gives motion to the driving-wheel by means of a ratchet and click, and the improvement is applicable both to the time and striking mechanism. It is applicable also to that class of clocks in

which the arbor remains stationary while the time-movement is running, the spring being attached at one end to the arbor and at the other to the lug of the driving-wheel. This form is known as the "going barrel." It is also applicable to what are known as "French clocks."

K is the pillar, to which the free end of the spring is attached. It is composed of a sleeve fitting between the sides of the clock-frame and a headed bolt L, passed through holes in the frame and through the interior of the sleeve and secured by a nut I. When the spring is to be removed, the nut is unscrewed and the bolt withdrawn, leaving the sleeve K free to come out with the spring B.

By the means before described the driving-wheel and mainspring can be readily removed and replaced without difficulty and loss of time and without loosening the frame of the clock-work and without disarranging the gearing. The combined sleeve and arbor allows this separation to be made, and is much more effective than extra plates applied to the main frame to hold the journals of the arbor.

I am aware of the patent to E. M. Moulton and M. Moulton, granted September 18, 1888, and do not lay claim to any of the devices therein set forth and claimed; but

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

1. In a clock, the combination, with the main wheel and the spring, of a sleeve fitting between the sides of the clock-frame and provided with a prismatic socket, an arbor having a shouldered portion fitting the socket in the sleeve, the ends of said arbor projecting and forming bearings in the frame and removable from said frame to permit the subsequent removal of the sleeve and spring without detaching the sides of the frame, substantially as described.

2. The combination, with a driving-wheel and mainspring, of a sleeve to which one end of the mainspring is attached, said sleeve fitting between the sides of the clock-frame and having an internal prismatic socket at one end, a winding-arbor having a prismatic portion fitting the socket in the sleeve and cylindrical portions serving as journals for said arbor, and a pillar to which one end of the mainspring is attached, consisting of a sleeve fitting between the sides of the clock-frame, and a bolt passing through said frame and sleeve and provided with a nut, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FLOYD L. SHAW.

Witnesses:

C. G. MESERVY,
B. K. KALLOCH.