

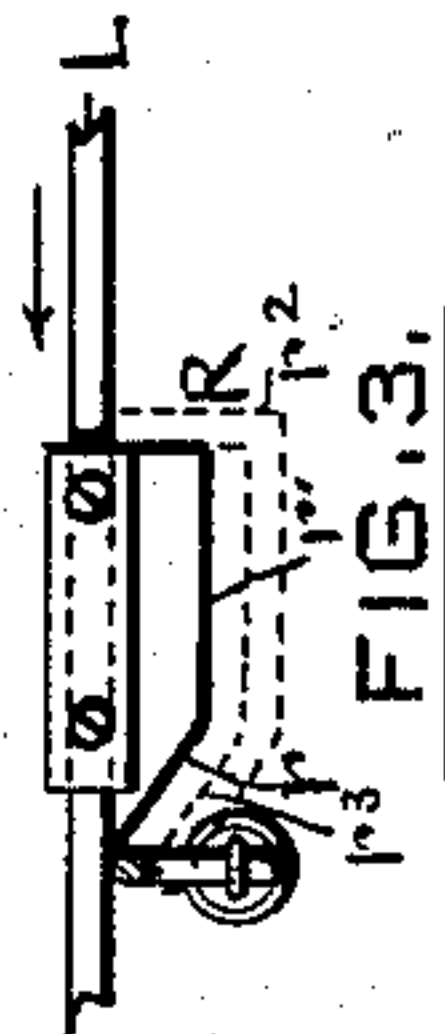
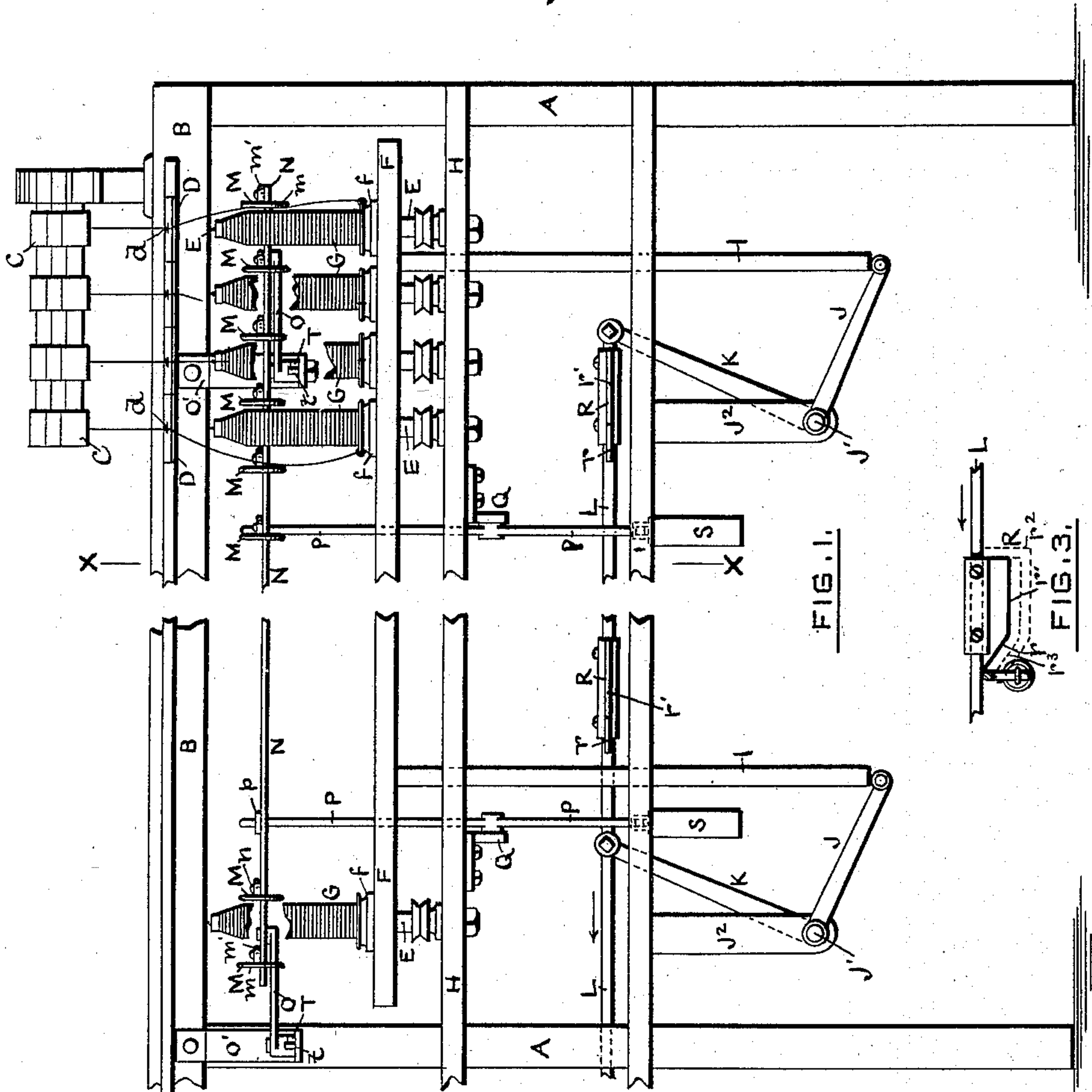
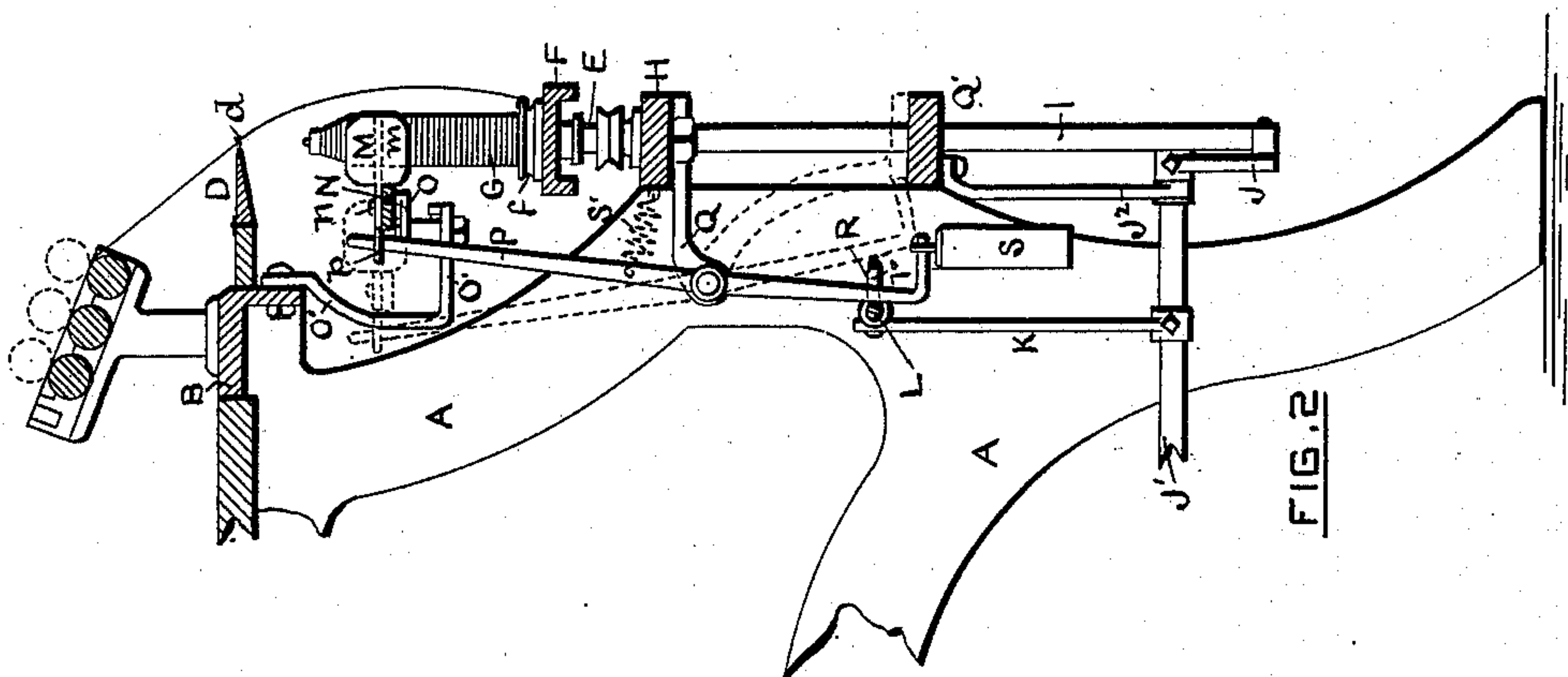
(No Model.)

2 Sheets—Sheet 1.

W. E. SHARPLES.
RING SPINNING FRAME.

No. 410,255.

Patented Sept. 3, 1889.



WITNESSES:

Geo. M. Carey
Henry J. Stapleton

INVENTOR:

William E. Sharples
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Attorney.

(No Model.)

2 Sheets—Sheet 2.

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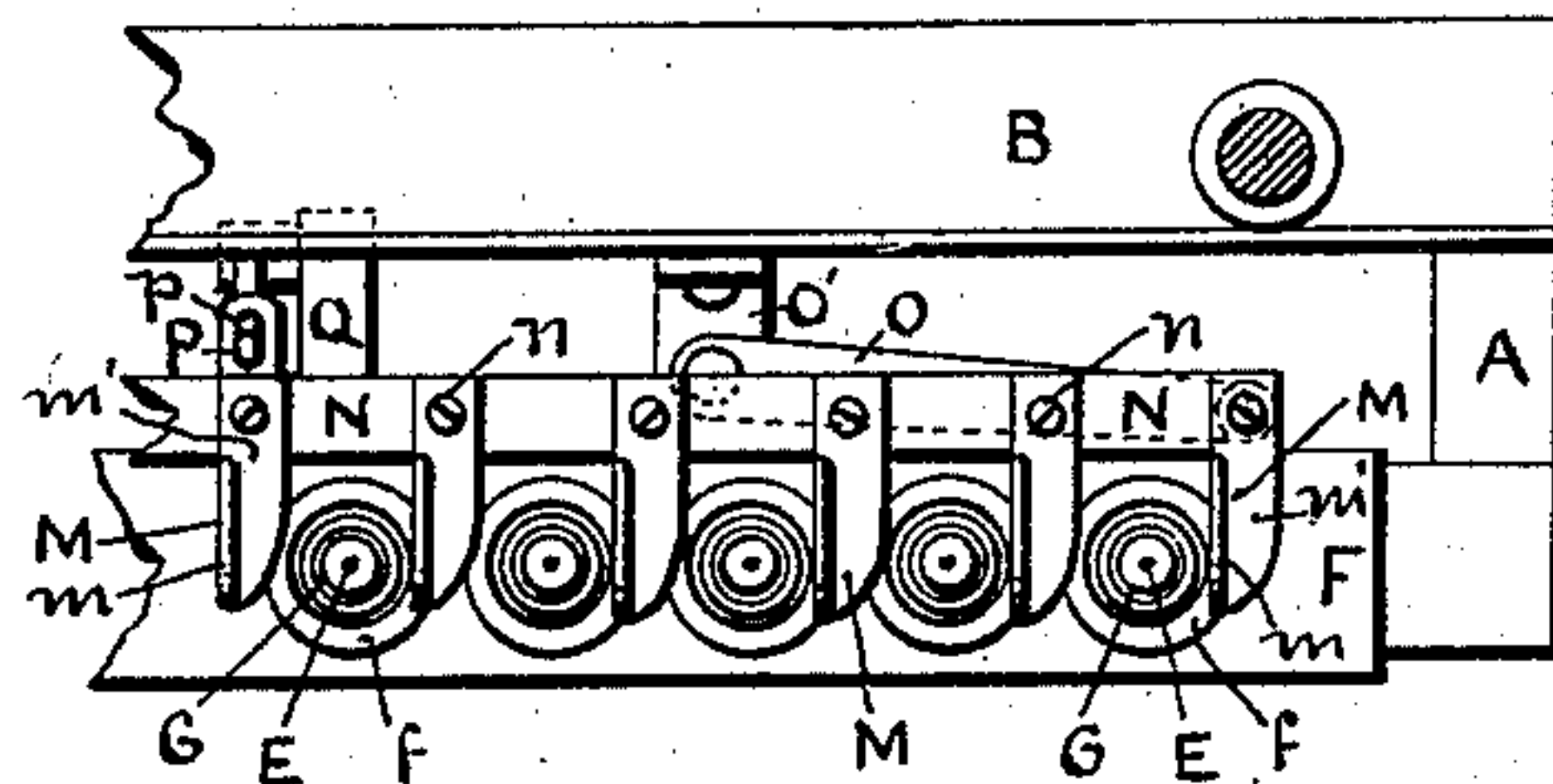


FIG. 4.

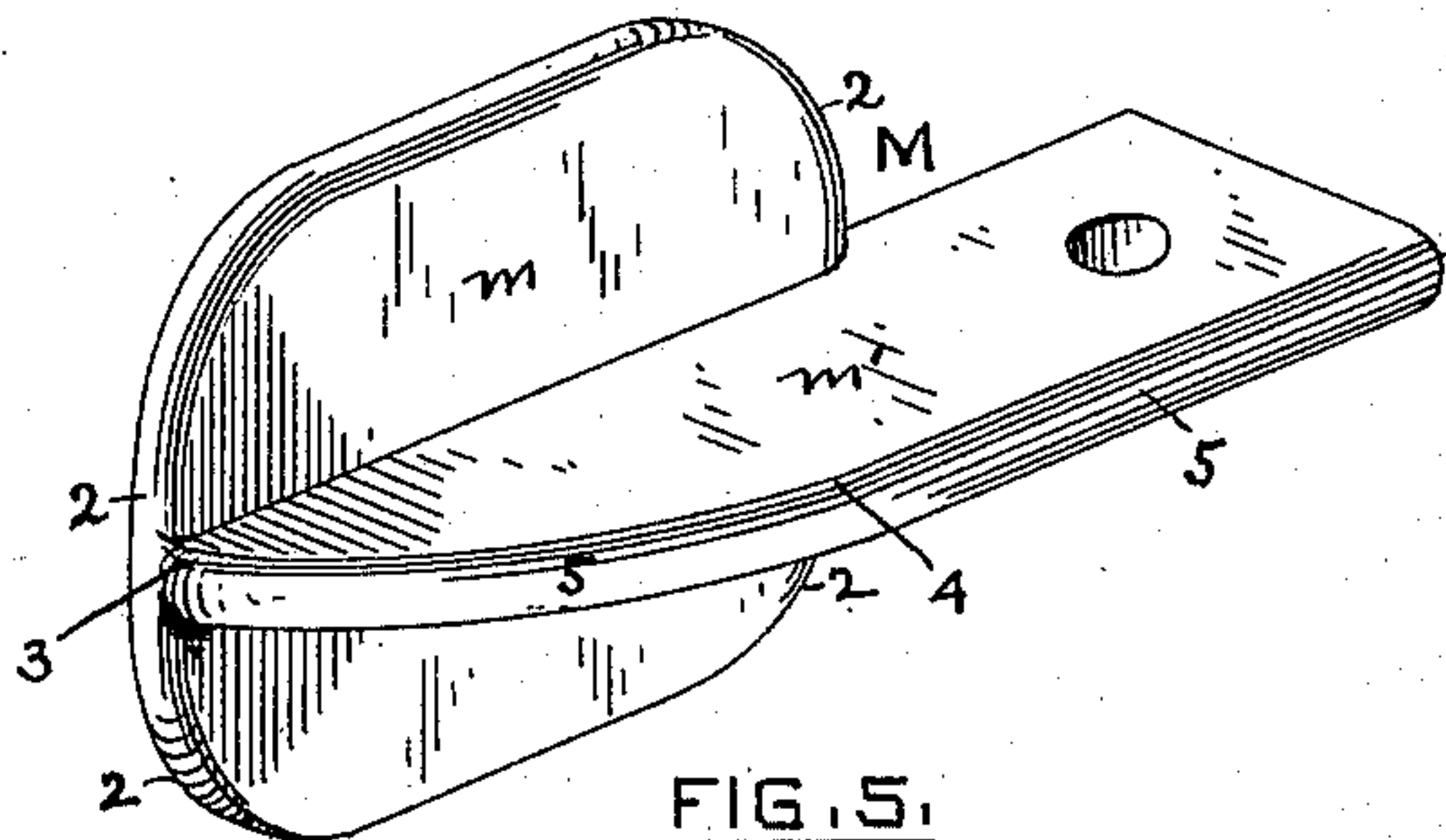


FIG. 5.

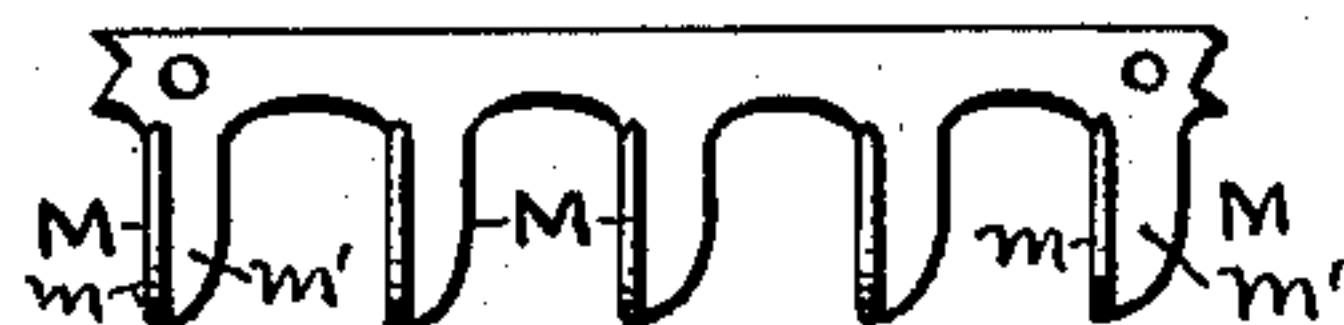


FIG. 6.

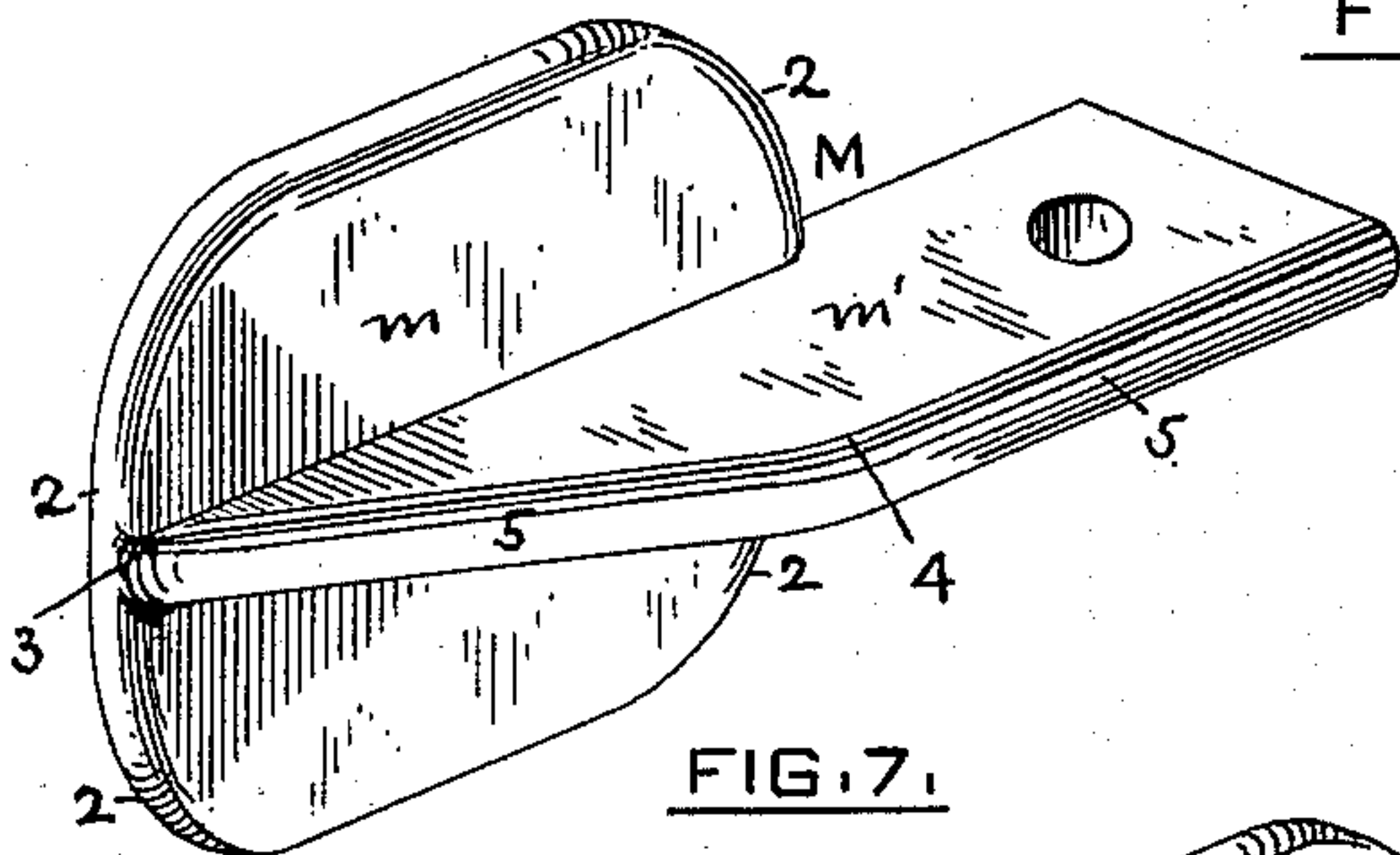


FIG. 7.

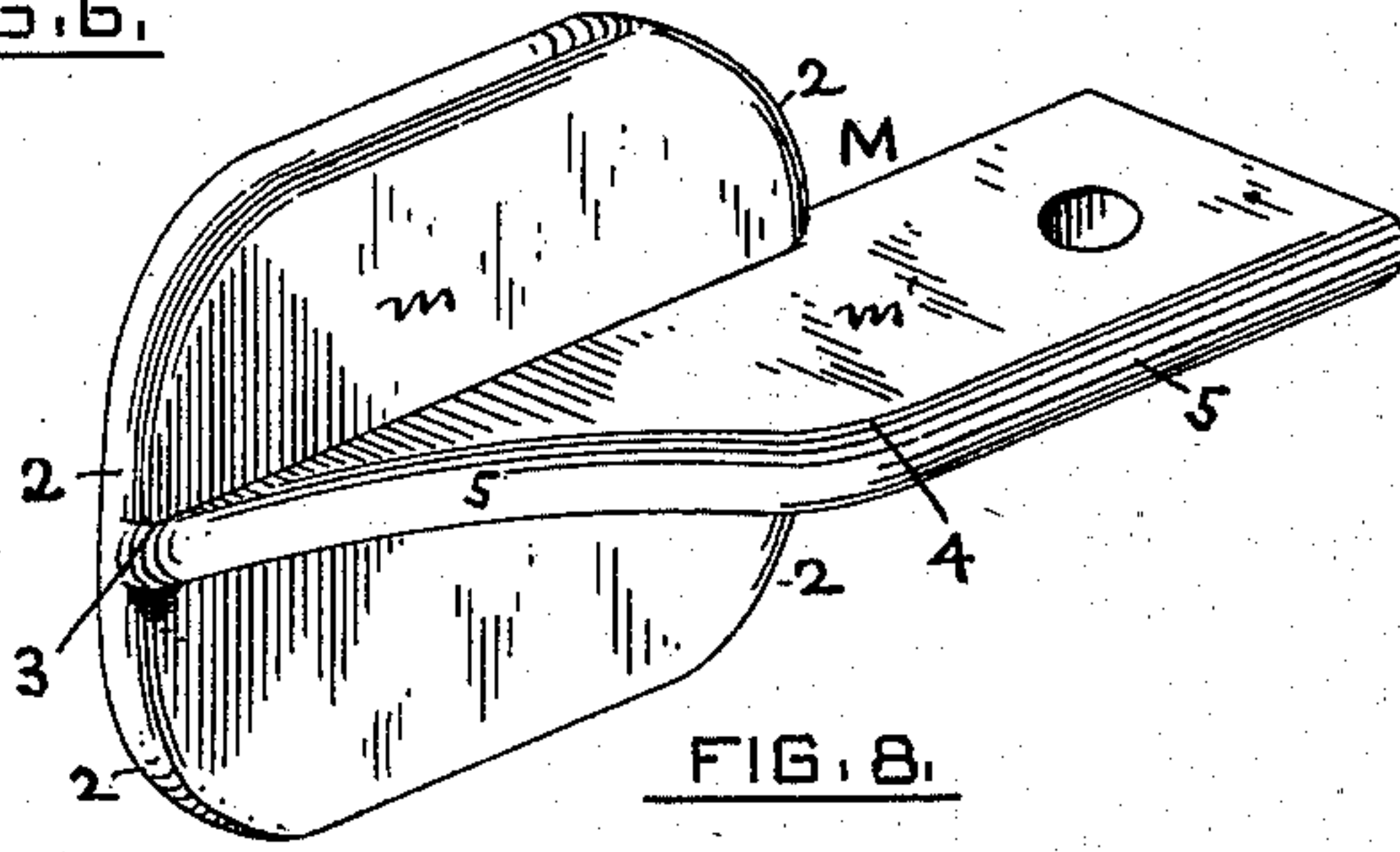


FIG. 8.

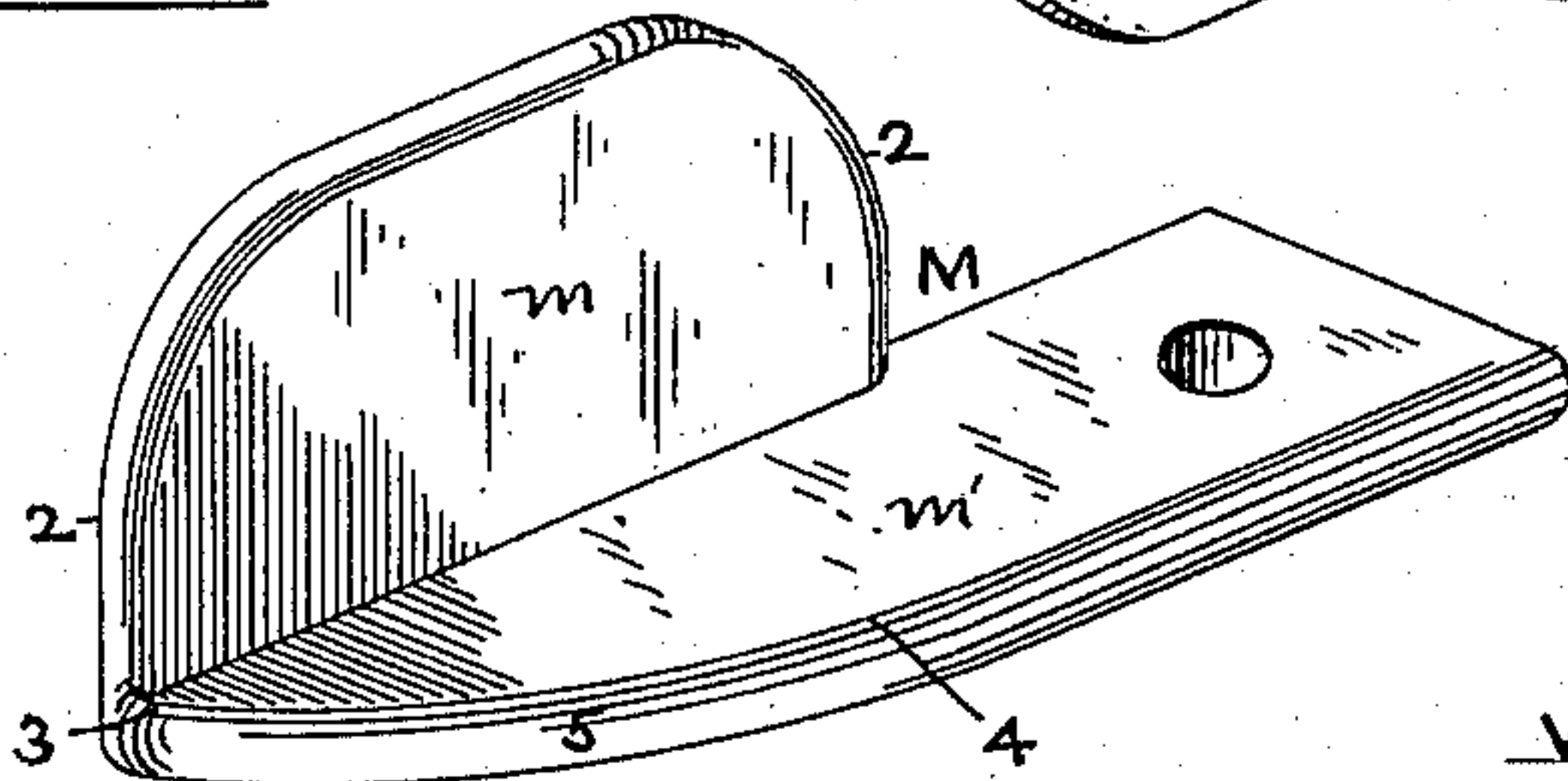


FIG. 9.

WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM E. SHARPLES, OF FALL RIVER, MASSACHUSETTS.

RING-SPINNING FRAME.

SPECIFICATION forming part of Letters Patent No. 410,255, dated September 3, 1889.

Application filed August 30, 1888. Serial No. 284,147. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. SHARPLES, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Ring-Spinning Frames; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a description thereof.

This invention relates to what are known as the "separators" of a spinning-frame, which are used to prevent the threads from whipping together while being wound upon the bobbins; and it relates, also, to the means for retracting the separators to allow the ring-rail to rise to its full height and for returning the separators to normal position when the rail falls.

The invention consists in certain features of construction and arrangement hereinafter described and claimed.

Referring to the drawings, Figure 1 represents a front view of such a portion of a ring-spinning frame embodying the invention as is necessary to an understanding of the same. Fig. 2 is a vertical transverse section of the frame on line *x x* of Fig. 1. Fig. 3 shows a top view of a portion of the connecting-rod, having a cam-block thereon, and a horizontal section of the lever operated by said block, the block being about to act upon the lever. Fig. 4 represents a top view of a portion of the frame with the drawing-rolls and guide-wire board and blocks removed and the separators in normal position. Fig. 5 shows in perspective a single separator. Fig. 6 represents a top view of several separators combined or made integral with each other. Figs. 7, 8, and 9 show in perspective other single separators embodying the invention.

A A are parts of the frame of the machine. B is the roller-beam. C C are the drawing-rolls. D are the guide-wire blocks, and *d* the eyes thereon. E are the spindles. F is the ring-rail, and *f* the rings. G are the bobbins. H is the step-rail. I I are the lifting-rods, through which the ring-rail is raised. J J are levers which engage the lifting-rods, and are secured to transverse rock-shafts J' J', respectively. J² J² are supports for said shafts. K K are arms also secured to said rock-shafts. L is a rod connecting the arms K K, which

rod is moved longitudinally in opposite directions by mechanism (not shown in the drawings) in a perfectly well understood way to cause the levers J J to raise the ring-rail. All the foregoing parts of a spinning-frame are well known to makers and operators of such machinery.

M are the separators, which are made of metal or other suitable material, one for each spindle. Preferably each separator is made distinct from its neighbor, and all are secured to a bar N by means of screws or bolts *n*, as shown in Fig. 4. Normally the separators overlie the ring-rail, being located in a horizontal plane above the rings, and prevent adjacent threads from coming in contact with each other. Each separator is composed of a plate portion *m*, preferably having one of its faces or sides smooth or without any rib or projection thereon, and a rib portion *m'*, which projects laterally from the opposite face or side of said plate portion, as shown in Fig. 5, the said rib portion extending rearwardly to enable the separator to be attached to the bar N. Preferably the ends 2 2 of the plate portion are rounded, and the perimeter is also preferably rounded transversely, so as to offer the least resistance to the passage of the thread.

As shown in Fig. 5, that portion of the rib *m'* between the points 3 4 has a convex inclination; but the inclination may be a straight bevel, as shown in Fig. 7, or may be concave, as shown in Fig. 8, such inclination, whether convex, concave, or straight, serving gradually to move or force the ballooning thread inward toward the spindle, and the rib portion helping to keep the threads apart. The edge 5 of the rib is preferably rounded, so as to offer the least resistance to the passage of the thread.

The plate portion *m* of the separator may be of any proper width, and the rib portion *m'* may be centrally located thereon, as shown in Figs. 5, 7, and 8, or be located near or at the bottom of said plate, as shown in Fig. 9. Each form of separator shown in these figures will work satisfactorily. By making one face or side of the plate portion *m* of the separator smooth or without any rib or projection thereon, as hereinbefore described, said face or side of the plate portion can be brought into closer

proximity to the bobbin adjacent to said face than would be possible had said face a projecting rib, thereby enabling the thread running to the bobbin to be confined closer to the bobbin and the amount of ballooning to be reduced. The bar N lies in a horizontal plane and is pivoted to crank-arms O, which are pivoted upon brackets O', secured to the roller-beam, as shown in Figs. 1, 2, and 4. The means for retracting the bar N and the separators M, so the ring-rail can rise to its highest point, consist of a lever P, which is pivoted to a bracket Q, secured to any convenient support, as the rail H, Figs. 1 and 2, (or to the rail Q', as shown by dotted lines in Fig. 2,) the upper end of which lever is connected with the bar N in any preferred manner, as by passing through a slot in a finger p, secured to and projecting rearwardly from the bar. The lower end of said lever lies in the path of a block R, secured to and projecting laterally from the rod L, which block is furnished with an inclined plane r and a straight portion r' . At the proper time during the movement of this rod in the direction of the arrows, Figs. 1 and 3, to cause the levers J J to raise the ring-rail, the inclined plane r will engage the lever P and swing the bar N and its separators M rearwardly on the crank-arms O the desired amount, as shown by dotted lines in Fig. 2, and the separators will be held in a rearward position by the straight portion r' of the block R. The movement of the rod L in the opposite direction allows the ring-rail to fall, and when the rail has descended sufficiently to allow the separators to move forward the lever P will pass down the inclined plane r , and a weight S or a spring S' (shown by dotted lines in Fig. 2) will cause the separators to move forward to normal position between the spindles.

Any preferred form of stop may be used to limit the forward movement of the separators, as lugs T on the hubs of the crank-arms O and pins t on the brackets O', with which pins the lugs come in contact, Fig. 1, when the separators have attained their normal position.

Instead of making the separators distinct from each other and securing each to the bar M, a series of separators may be made integral by joining the rib portions m' therefor, as shown in Fig. 6, and such integral series be secured to the bar N or be pivoted directly

upon the crank-arms O and the bar N be dispensed with. In this latter case the lever P will be connected with the series of separators in any preferred manner, as will be readily understood, as by furnishing the series of separators with a slotted finger, through which the upper end of the lever shall pass.

In place of employing a weight S or spring S', or in addition to such means for moving the separator forward to normal position, the block R may have an arm or portion r^2 , separated from the faces r r' sufficiently to allow the lower end of the lever to pass between said faces and said bar, and be furnished with an inclined portion r^3 to force the lower end of the lever rearward, as shown by dotted lines in Fig. 3.

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

1. The combination, with the ring-rail and its rings, of a series of separators, each composed of a plate portion m and a rib portion m' , projecting laterally from the plate portion, and having its edge inclined, as described, between the points 3 4, the said separators being located above the rings, whereby both the plate and rib portions can act upon the threads, and a support for the separators, substantially as set forth.

2. The combination, with the ring-rails, the lifting-rods, the levers J J, rock-shafts J', the arms K, and the connecting-rod L, of a series of separators, the crank-arms O, for supporting the separators, a lever P, connected with the separators, and a block R, located on the rod L, for engaging the lever P and moving the separators rearwardly, said block having an inclined plane r and face r' , substantially as set forth.

3. The combination, with the ring-rail, the lifting-rods, the levers J, rock-shafts J', arms K, and connecting-rod L, of a series of separators, crank-arms O, for supporting the separators, a lever P, connected with the separators, a block R, located on the rod L, for engaging the lever P and moving the separators backward, said block having an inclined plane r and face r' , and means, substantially as described, for returning the separators to normal position, substantially as set forth.

WILLIAM E. SHARPLES.

Witnesses:

GEO. T. WILEY,

HERBERT H. HORTON.