

No. 668,680.

Patented Feb. 26, 1901.

H. C. FOWLER.  
SHUTTLE.

(Application filed Nov. 21, 1900.)

(No Model.)

Fig. 1.

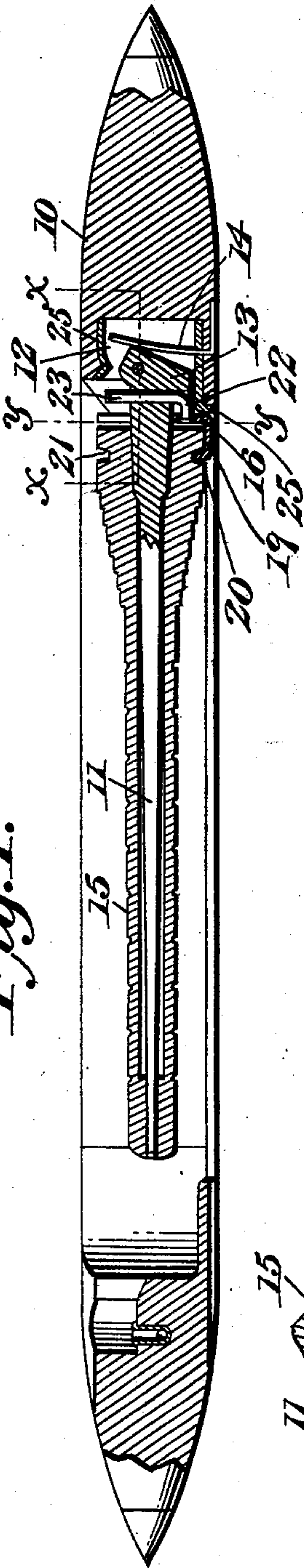


Fig. 2.

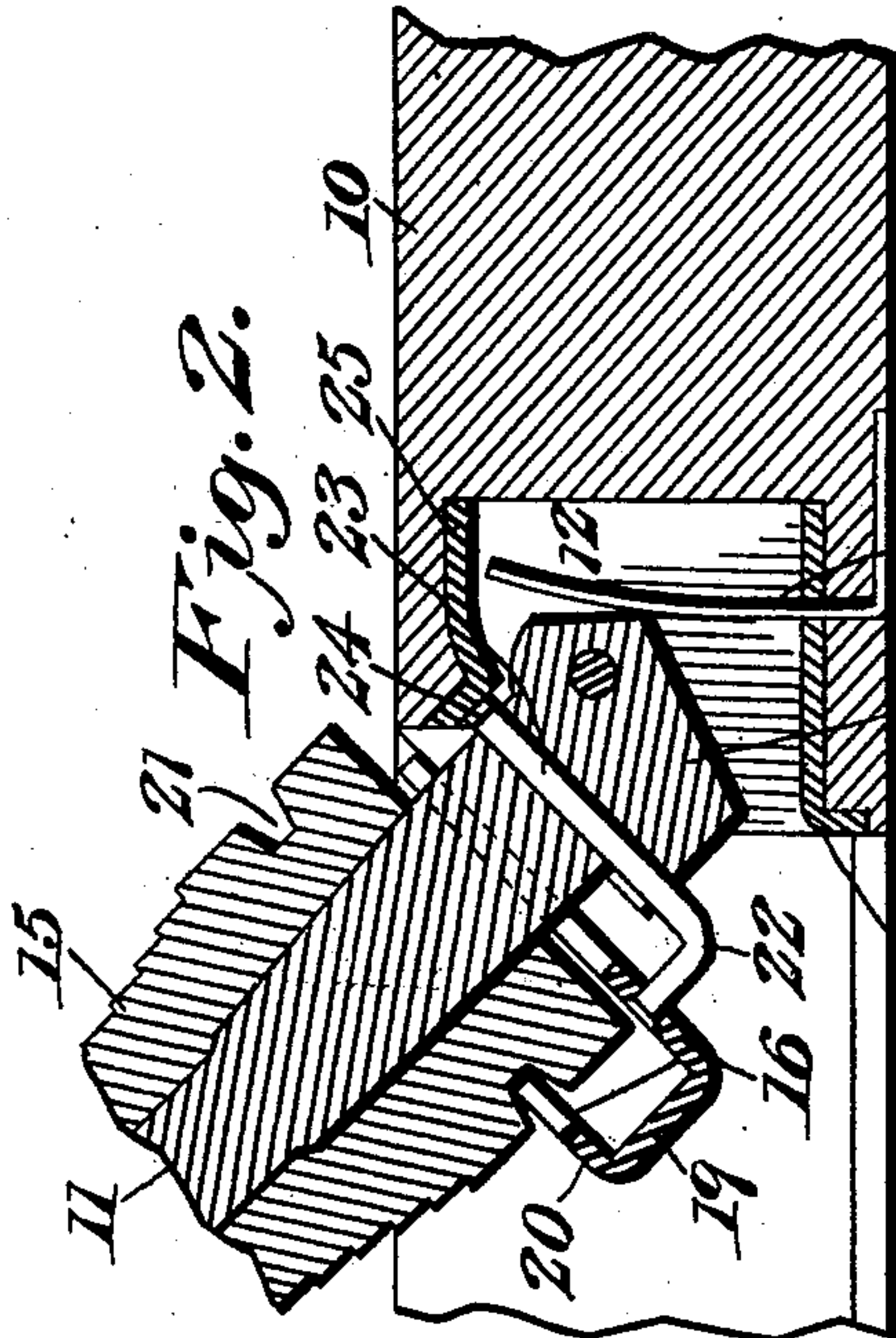


Fig. 3.

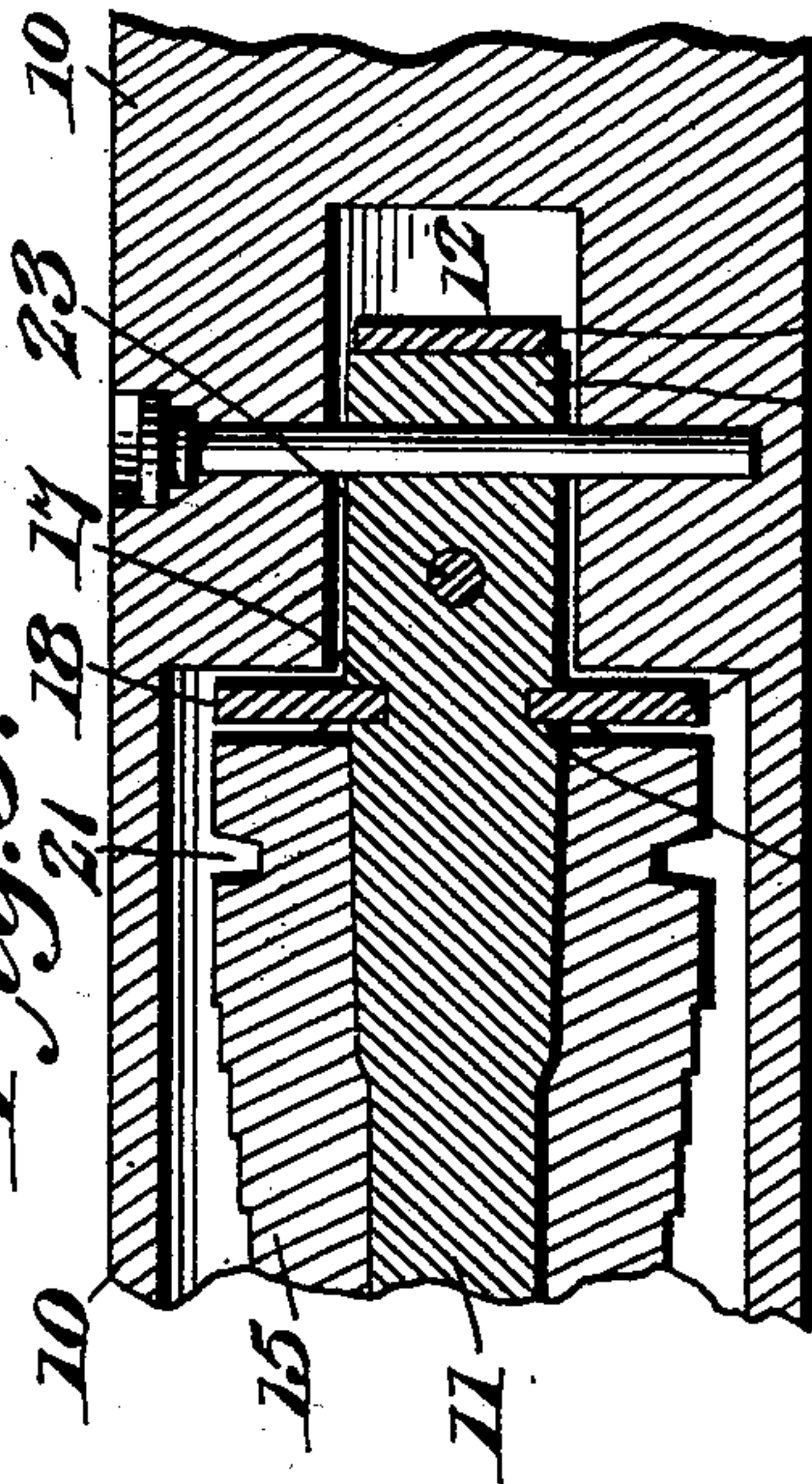
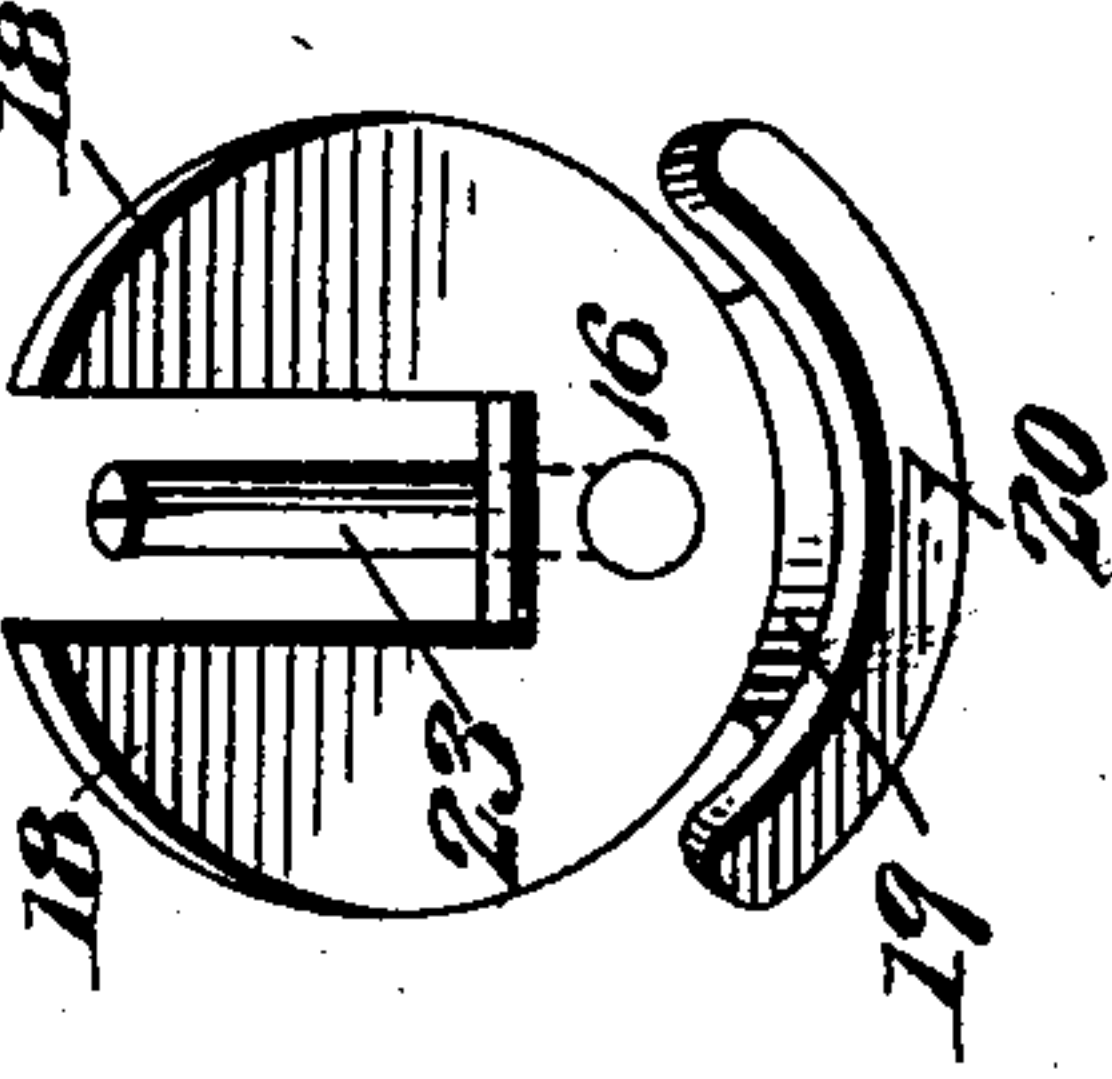
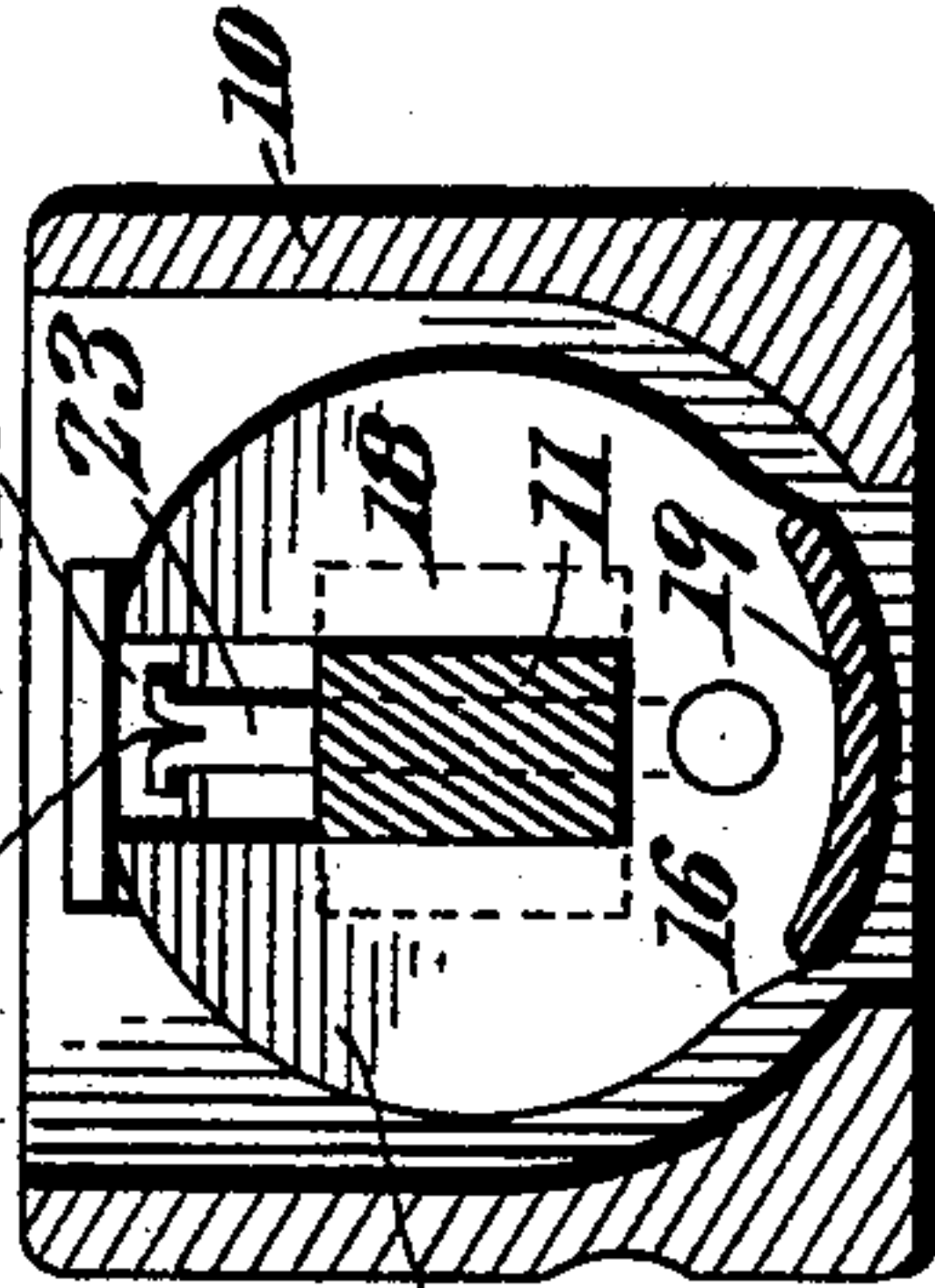


Fig. 4.



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# UNITED STATES PATENT OFFICE.

HENRY CLAY FOWLER, OF BURLINGTON, NORTH CAROLINA, ASSIGNOR OF  
ONE-HALF TO J. M. FOWLER, OF SAME PLACE.

## SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 668,680, dated February 26, 1901.

Application filed November 21, 1900. Serial No. 37,288. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY CLAY FOWLER, a citizen of the United States, residing at Burlington, in the county of Alamance and State of North Carolina, have invented a new and useful Shuttle, of which the following is a specification.

The present invention relates to loom-shuttles, and more particularly to the means for securing the bobbin in operative position therein; and one object is to provide simple and inexpensive means for positively locking the bobbin upon the spindle when the latter is in operative position and positively unlocking it when said spindle is thrown to inoperative position to permit of its ready removal.

A further object is to so construct this locking mechanism that it may be readily removed for the purpose of repair or renewal and as readily replaced.

In order that a complete understanding of the invention may be obtained, one manner of carrying the same into effect is described in the following specification and illustrated in the drawings which accompany and form a part of the same; but it will be understood that the construction shown and described is open to change and modification within the scope of the claims hereto appended.

In the drawings, Figure 1 is a longitudinal sectional view of a loom-shuttle embodying the preferred form of construction and showing the bobbin locked in operative position. Fig. 2 is a detail sectional view, on an enlarged scale, of the pivot end of the spindle and bobbin, showing the same thrown to an inoperative position and the latter unlocked. Fig. 3 is a horizontal section, on an enlarged scale, taken on the line X X of Fig. 1. Fig. 4 is a cross-section on the line Y Y of Fig. 1. Fig. 5 is a detail perspective view of the locking device detached.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

In the drawings an ordinary loom-shuttle is illustrated, the numeral 10 designating the body having the usual longitudinal opening, within which is mounted the spindle 11, being pivoted at one end in a socket 12 of the body 10, that opens into the longitudinal

opening. The pivoted end of the spindle is provided with an angular enlarged head 13, against which bears a flat leaf-spring 14, that holds the spindle within or projecting out of the longitudinal opening, as is readily understood. Upon this spindle is detachably mounted the bobbin 15. This portion of the construction forms no part of the present invention and is shown for the purpose of more clearly illustrating the application and operation of the invention. It may be changed and modified as desired.

The invention consists in the means for locking the bobbin upon the spindle and in the construction illustrated is as follows: A guide-plate 16 is mounted and transversely slidable upon the spindle 11, contiguous to its pivoted end. This is preferably accomplished by bifurcating the plate, providing the spindle with opposite transverse notches 17, and slidably mounting the arms 18, formed by the bifurcation of the plate, in said notches. The edge of the plate 16 opposite the bifurcation is provided with a projecting portion 19, having an upturned end forming a circular flange 20, that is adapted to engage the usual annular groove 21 in the adjacent end of the bobbin.

The plate 16 is adapted to engage the bobbin when the spindle is in operative position and disengage the same when raised, and to accomplish this operation and also secure the plate to the spindle a holding-pin 22 is secured at one end to the plate and has an angular extension 23, spaced from and substantially parallel to the plate, that passes through and has its free end projecting above the spindle. This end is preferably bifurcated and spaced apart, as shown at 24, to prevent its slipping through the spindle. By this means it will be seen that a sufficient sliding movement of the plate 16 is permitted, but that this movement is limited between the opposite ends of the extension 23, and this extension forms the means for holding the plate upon the spindle. Further than this, however, the lower end of the extension is arranged to come in contact with the lower edge of the socket 12 when the spindle is brought into operative position, forcing the locking-flange 20 into the groove 21 of the



bobbin, as shown in Fig. 1, and rigidly holding it therein, thus positively locking the bobbin in place. The upper or free end of the pin extension is also arranged to be brought  
 5 in contact with the upper edge of the socket 12 when the spindle is brought out of the opening, as shown in Fig. 2, and the locking-flange 20 is therefore forced out of the groove 21 and held in its inoperative position until  
 10 the spindle is again thrown back. Suitable wear-plates 25 are provided at those portions of the edges of the sockets upon which the pin 22 bears.

The operation of the device will be readily  
 15 apparent. When the spindle is thrown to the position shown in Fig. 2, the end of the pin will engage the edge of the socket 12, forcing down the plate, and consequently disengaging the flange from the groove of the  
 20 spindle, which can be readily removed and replaced. Upon throwing the spindle to the position shown in Fig. 1 the opposite portion of the pin comes into contact with the opposite edge of the socket, raising the plate, and  
 25 consequently throwing the flange into the groove of the spindle, where it will be rigidly and positively held against movement until the spindle is again raised. Furthermore, should it become necessary from any cause  
 30 to remove the locking device it is only necessary to bring the bifurcated ends of the holding-pin together and raise the spindle, whereupon the entire device may be readily removed.

35 From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape,  
 40 proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

45 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a shuttle, the combination with a body and spindle pivotally mounted upon the body,  
 50 of a bobbin-locking device slidably and detachably mounted upon the spindle and adapted to engage different portions of the body to move said locking device into and out of engagement with a bobbin placed upon the  
 55 spindle when the latter is thrown to operative and inoperative positions respectively.

2. In a shuttle, the combination with the body and spindle pivotally mounted thereon, of a bobbin-engaging device slidably mount-

ed upon the spindle, and an operating-pin 60 connected with the engaging device, and arranged to alternately engage opposite portions of the body as the spindle is alternately thrown to operative or inoperative position to operate the bobbin-engaging device. 65

3. In a shuttle, the combination with the body and spindle pivotally mounted thereon, of a bobbin-engaging device slidably mounted upon the spindle, and an operating-pin 70 connected with the engaging device, and arranged to alternately engage opposite portions of the body as the spindle is alternately thrown to operative or inoperative position, to operate the bobbin-engaging device, said pin also forming means for fastening the bob- 75 bin-engaging device in place upon the spindle.

4. In a shuttle, the combination with the body and spindle pivotally mounted thereon, of a guide-plate slidably mounted upon the 80 spindle and arranged to engage a bobbin placed thereon, and means connected to said plate and alternately engaging opposite portions of the body as the spindle is alternately thrown to operative or inoperative position, 85 to move the plate into and out of engagement with the bobbin.

5. In a shuttle, the combination with the body and spindle pivotally mounted thereon, of a guide-plate slidably mounted upon the 90 spindle and arranged to engage a bobbin placed thereon, and a pin connected to the plate and arranged to alternately engage opposite portions of the body as the spindle is alternately thrown to operative and inopera- 95 tive positions to move said plate into and out of engagement with the bobbin.

6. In a shuttle, the combination with the body and spindle pivotally mounted thereon, of a bifurcated guide-plate slidably embracing the spindle and having a projecting portion adapted to engage a bobbin placed on the spindle, and a combined holding and operating pin connected to the plate and passing through the spindle, said pin being adapt- 105 ed to alternately engage opposite portions of the body as the spindle is alternately thrown to operative or inoperative positions to move the projecting portion of the guide-plate respectively into and out of engagement with 110 the bobbin.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY CLAY FOWLER.

Witnesses:

CHAS. E. MCLEAN,  
 ANNIE SHOFFNER.