

(No Model.)

J. TRIPP & G. D. GARVIE.

SHUTTLE FOR SEWING MACHINES.

No. 361,338.

Patented Apr. 19, 1887.

FIG. 1.

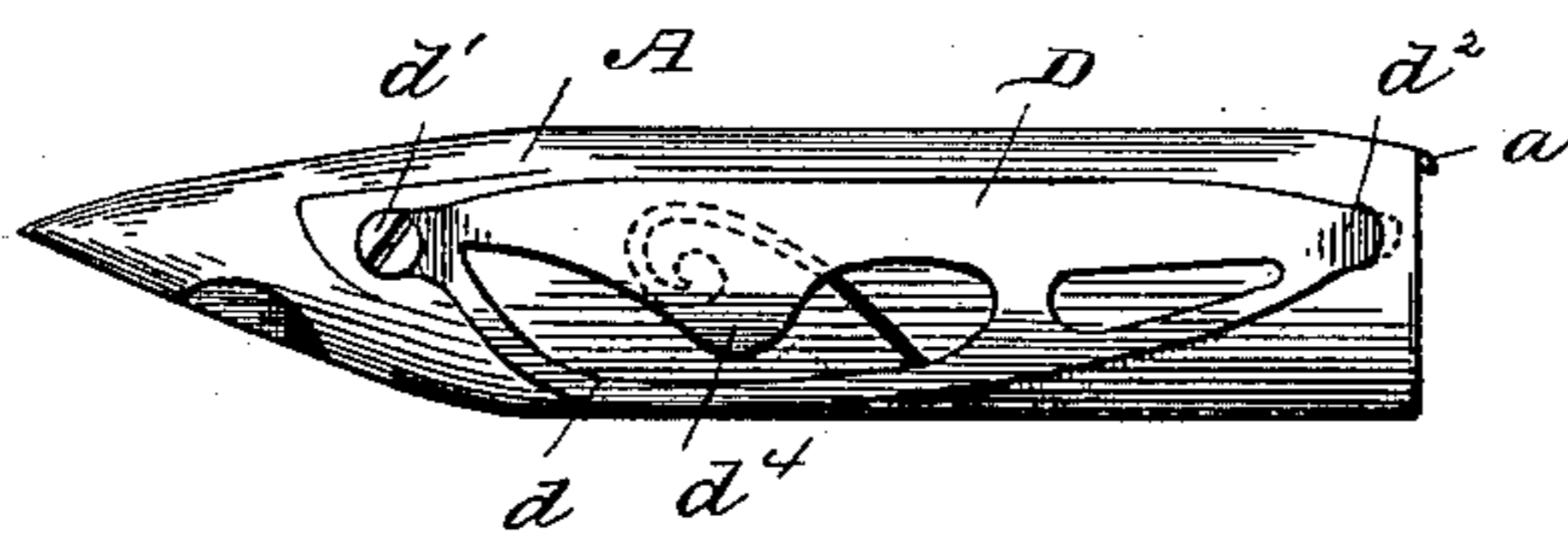


FIG. 2.

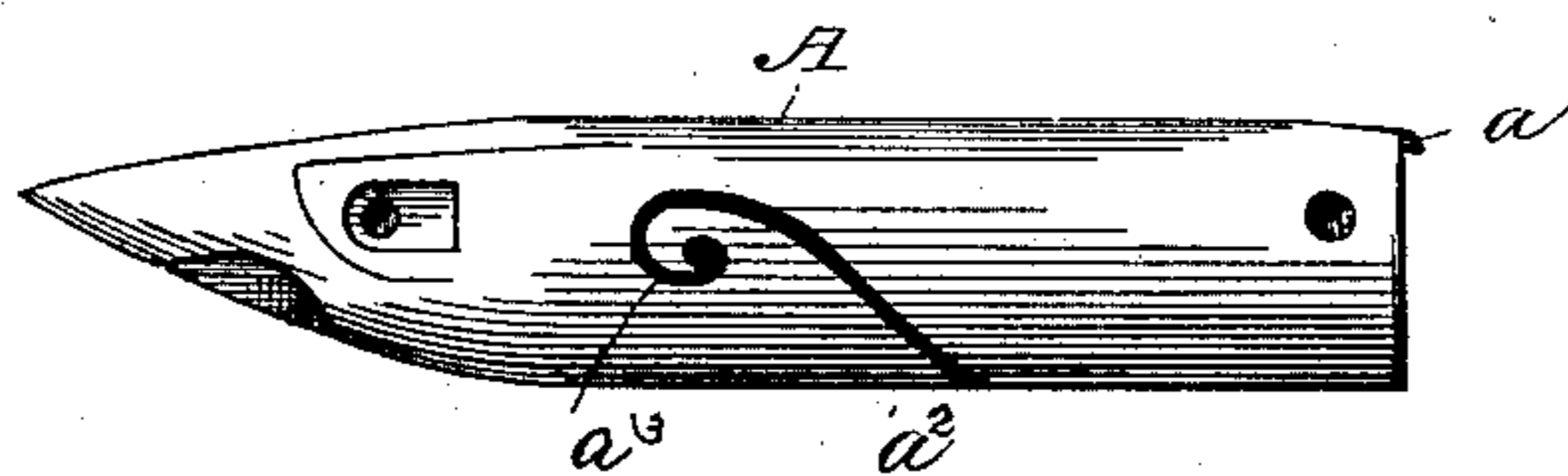


FIG. 3.

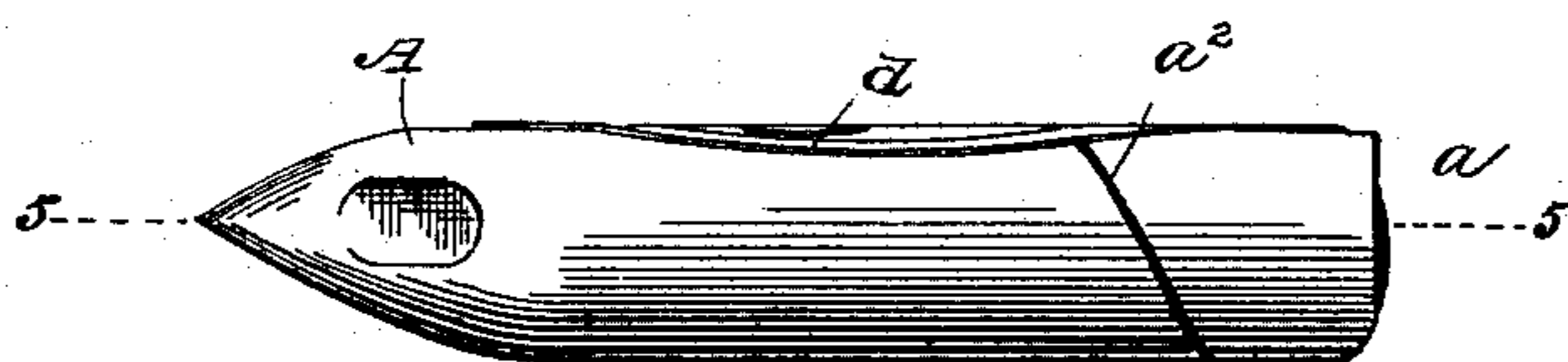


FIG. 4.

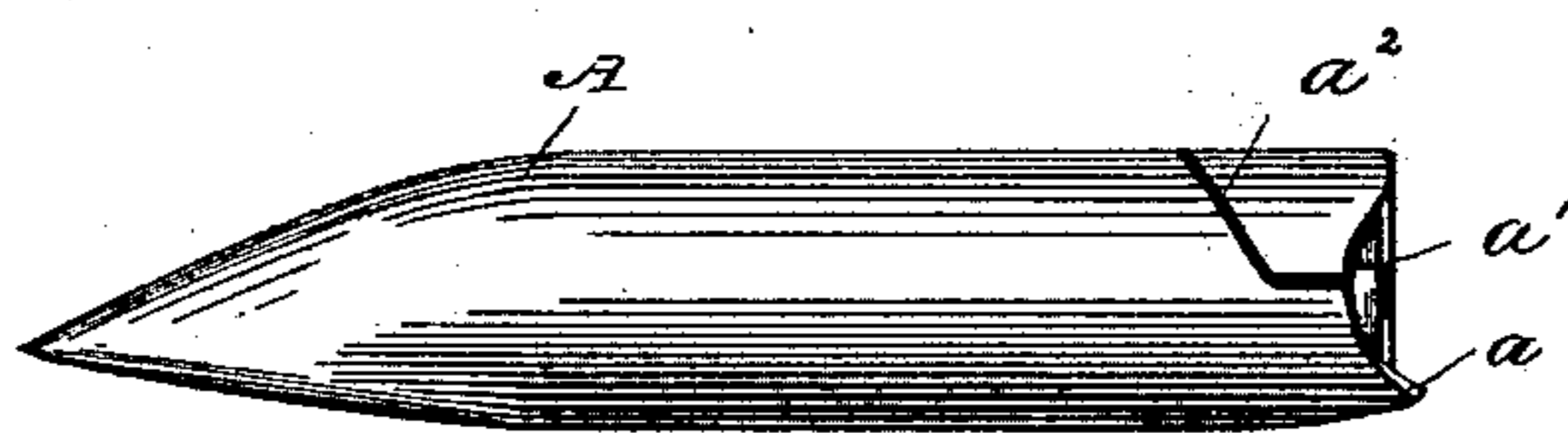
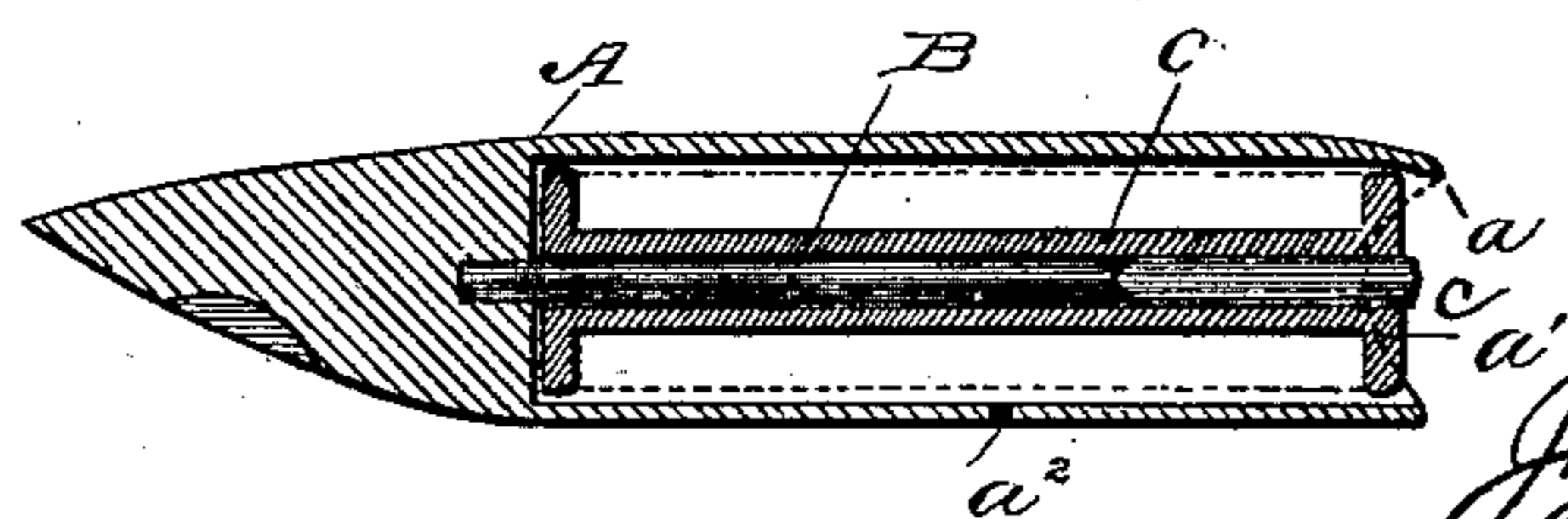


FIG. 5.



Witnesses:-

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UNITED STATES PATENT OFFICE.

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SHUTTLE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 361,338, dated April 19, 1887.

Application filed October 1, 1886. Serial No. 215,096. (No model.)

To all whom it may concern:

Be it known that we, JAMES TRIPP and GEORGE D. GARVIE, citizens of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Sewing-Machine Shuttles, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to that class of sewing-machine shuttles known as "open-ended" and "self-threading," and it is our object to provide shuttles of the class referred to from which the bobbins will not accidentally escape when the shuttles are being handled, which may be easily and quickly threaded, and from which the thread will run with a smooth and uniform tension.

In carrying our invention into effect we provide our shuttle with an interior pin or spindle, which is fixed to the forward part of the shuttle, and which is preferably somewhat shorter than the hollow bobbin, into which it extends. The heel of the shuttle is provided with an inwardly-projecting lip, which is preferably on the "face" side of the shuttle, or that side thereof which comes against the race when the shuttle is in the carrier. The said lip, the exterior of which is preferably curved, extends inward just far enough to engage the flange of the bobbin slightly, and thus prevent the latter from accidentally falling out of the open-ended shuttle when the latter is being handled; but when sufficient pressure is applied to the bobbin the spindle which enters the same will yield slightly to permit the flange of the bobbin to pass said lip in inserting the bobbin into the shuttle or removing it therefrom. The hollow bobbin has a short pivot-pin at its rear end, which abuts against the shuttle-spindle when the bobbin is in place in the shuttle. The shuttle-body is provided with a self-threading or open-ended slot extending from the under side of the shuttle at the heel spirally forward and upward to the upper side of the shuttle, where, at a point which is overlaid by the tension-spring, it curves rearwardly, thus forming a hook which securely retains the thread in place without necessitating the delicate thread-fingers on the tension-spring heretofore extensively in use, but which are objectionable for the reason that

they are liable to become bent so that they will not properly perform their functions.

In the drawings, Figure 1 is a plan view of a shuttle embodying our invention. Fig. 2 is a similar view with the tension-spring removed. Figs. 3 and 4 are side and bottom views, respectively, of the same; and Fig. 5 is a longitudinal section of our shuttle with the bobbin therein, on line 5 5, Fig. 3.

A denotes the body or shell of the shuttle, and B the interior pin or spindle fixed to the forward part thereof, said spindle being preferably shorter than the interior bore of the shuttle, so as to extend about three-fourths the length of the hollow bobbin C. The shell A is provided at its heel with a lip, *a*, which projects inwardly just far enough to slightly engage the rear flange of the bobbin when the latter is in its normal position on the spindle B, said lip thus preventing the bobbin from accidentally falling out of the shuttle when the latter is being handled.

In placing the bobbin in the shuttle the forward flange of the former is not obstructed by the lip *a*, owing to the fact that the spindle B does not extend to the rear end of the shuttle, the bobbin-flanges being, as usual, slightly less in diameter than the bore of the shuttle, so that the bobbin, until it engages the said spindle, need not be quite central within the shuttle. When the bobbin is nearly in place and the rear flange thereof comes into slight contact with the lip *a*, a slight pressure against the bobbin will cause the spindle B to spring a little, so that the said flange can pass the said lip as the bobbin is forced into place. In removing the bobbin from the shuttle a notch or recess, *a'*, at the heel of the latter enables the thumb or finger nail of the operator to be engaged with the inside of the said rear flange to force the latter past the lip *a*, the spindle springing slightly, as in inserting the bobbin, to let the flange pass the lip.

The outer side of the lip *a* is preferably curved inwardly, as more clearly shown in Fig. 5, this construction facilitating the passage of the heel of the shuttle by the needle-recess in the shuttle-race without liability of catching in said recess, as sometimes occurs with shuttles as heretofore made.

The open-ended threading-slot *a*² extends from the lower side of the heel of the shuttle

spirally upward and forward past the line of tension at the top of the shuttle, (but not entirely across the tension-spring,) whence it re-
 5 curves rearwardly, as at a^3 , in the form of a hook, this construction insuring the retention of the thread in place beneath the tension-spring D. The said spring has the usual thread-guard, d , and is secured to the shuttle-body by an attaching and regulating screw,
 10 d' , and a downwardly-projecting lip, d^2 , entering a hole in the shuttle-body, as is common. Near the middle of the said spring is a wide portion or lip, d^4 , which extends over the hooked part of the threading-slot and bears
 15 on the thread running rearward from said slot to give the tension to the thread.

The hollow bobbin C has at its rear end a short pivot-pin, c , the outer end of which will hold the rear flange of the bobbin out of con-
 20 tact with the rear horn of the carrier, and the inner end of which will engage the rear end of the spindle B, and thus prevent the forward flange of the bobbin from coming in contact with the interior of the front wall of the
 25 bobbin-chamber. Thus the bobbin can turn readily on its supporting-spindle, so that the tension of its thread will not be disturbed by undue friction thereon when the shuttle is in operation, and the thread will consequently
 30 run therefrom with a smooth and uniform tension.

In Fig. 4 the extreme rear end of the threading-slot a^2 is shown as being straight; but this is immaterial, it being only essential that the
 35 open-ended threading-slot should commence at the heel of the shuttle at the under side of the shuttle-body.

The term "of less length than the bobbin-chamber" used in the claims, and having ref-
 40 erence to the pin or spindle D, will be understood to mean that that portion of the spindle which projects within the said chamber is of less length than the latter, the said term thus not necessarily having reference to the entire
 45 length of the pin or spindle.

Having thus described our invention, we claim and desire to secure by Letters Patent--

1. An open-ended cylindrical sewing-machine shuttle provided with a fixed interior
 50 pin or spindle, and having at its heel a rigid

inwardly-projecting lip to co-operate with said pin or spindle in retaining the bobbin in the shuttle.

2. An open-ended cylindrical sewing-machine shuttle provided with a fixed interior
 55 pin or spindle, and having at its heel on its face side a rigid inwardly-projecting lip having a curved outer surface.

3. An open-ended cylindrical sewing-machine shuttle provided with a fixed interior
 60 pin or spindle of less length than the bobbin-chamber, and having at its heel a rigid inwardly-projecting lip.

4. An open-ended cylindrical sewing-machine shuttle having an inwardly-projecting
 65 lip at its heel and an interior pin or spindle of less length than the bobbin-chamber, combined with a hollow bobbin having a short fixed pin at its outer end adapted to abut against said pin or spindle in the shuttle, sub-
 70 stantially as set forth.

5. A cylindrical sewing-machine shuttle provided with an interior spindle of less length than the bobbin-chamber, and having at its heel an inwardly-projecting lip and a finger-
 75 recess, a' , substantially as set forth.

6. A sewing-machine-shuttle shell provided with an open-ended threading-slot extending from the heel of the shuttle, at the under side thereof, spirally forward and upward to the
 80 upper side of said shell and curving thence rearwardly in form of a hook, combined with a tension-spring having a wide portion or lip overlying the hooked portion of the said slot, substantially as set forth.
 85

7. A sewing-machine-shuttle shell provided with a threading-slot extending from the rear end of said shell forward, and having a rearwardly-curved portion at the upper side of said shell to form a hook, combined with a ten-
 90 sion-spring having a wide portion or lip overlying the hooked portion of the said slot, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES TRIPP.
 GEO. D. GARVIE.

Witnesses:

HENRY CALVER,
 GEORGE C. HUNTING.