

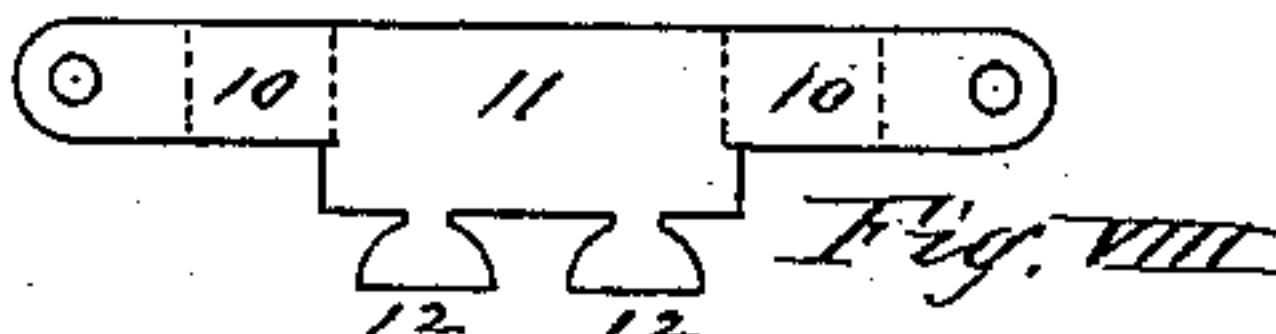
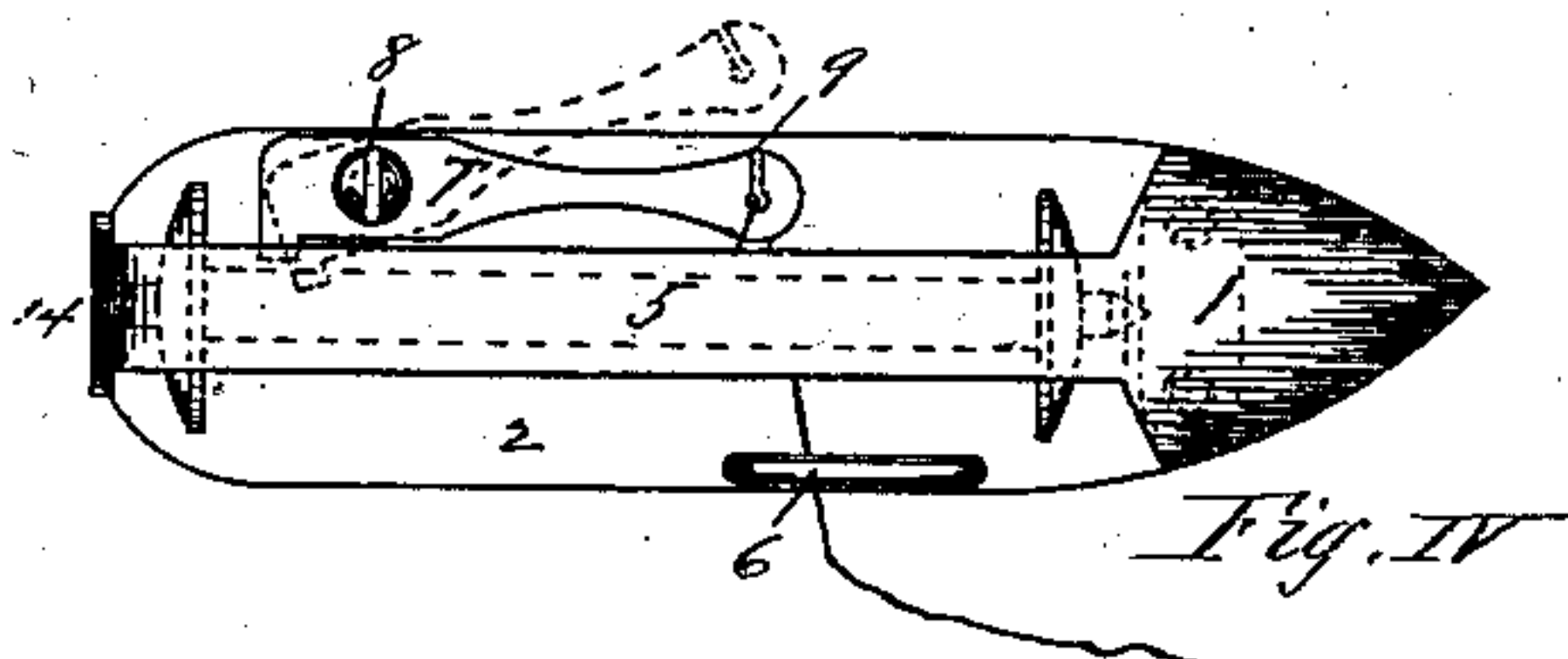
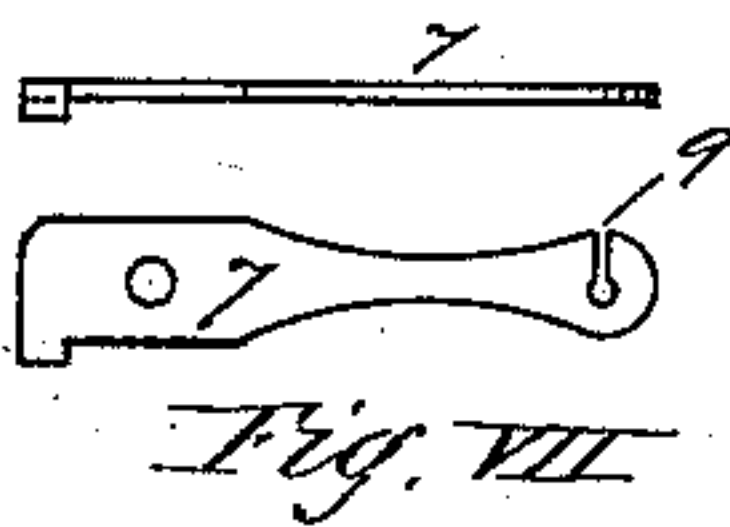
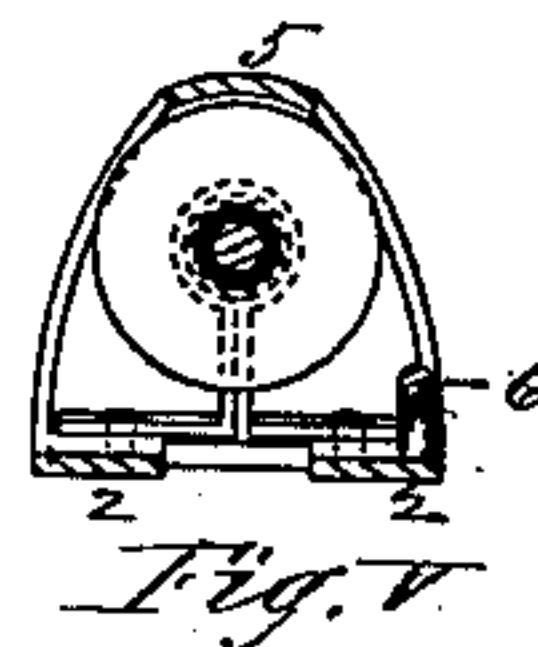
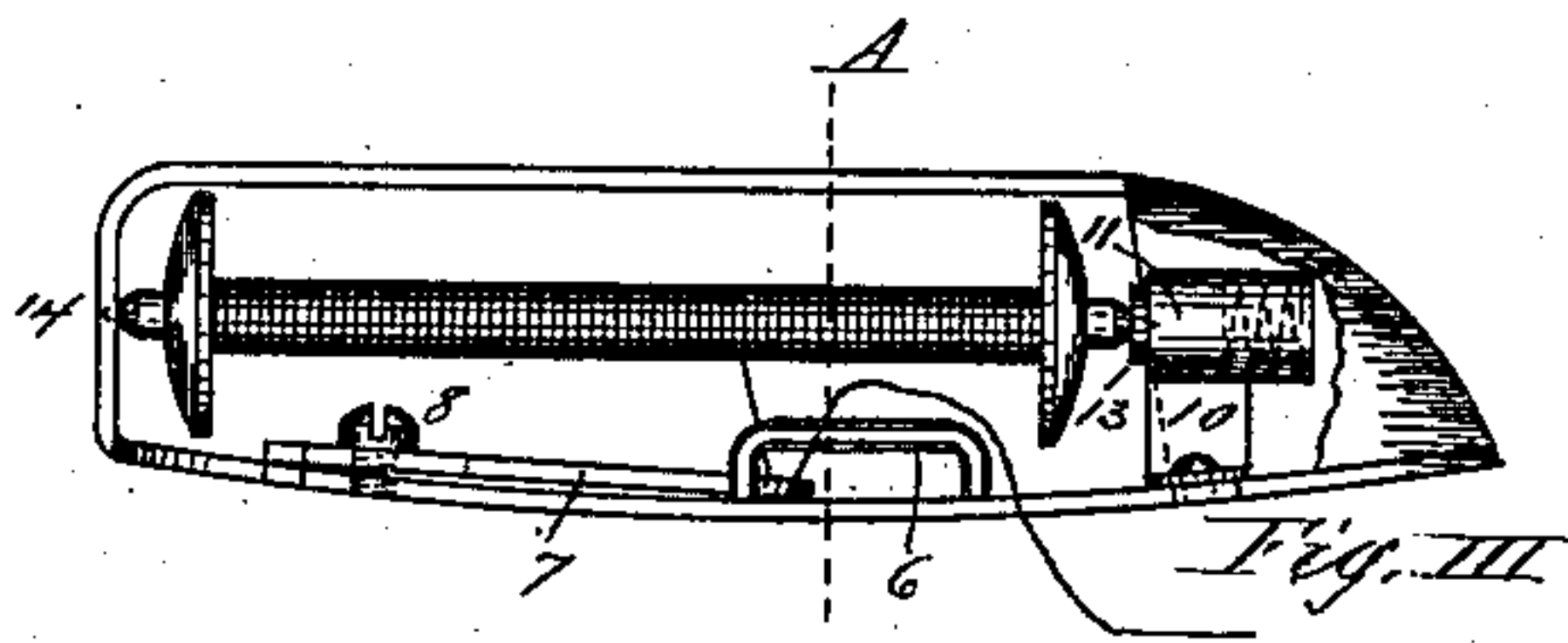
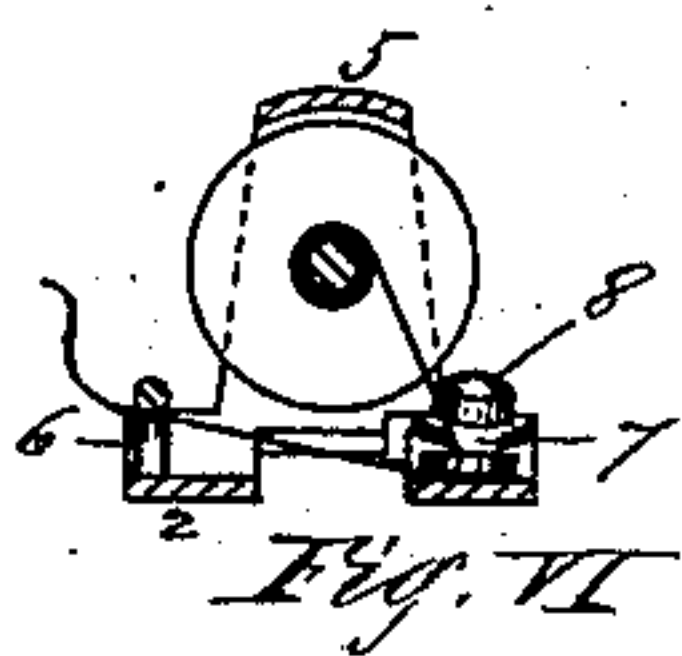
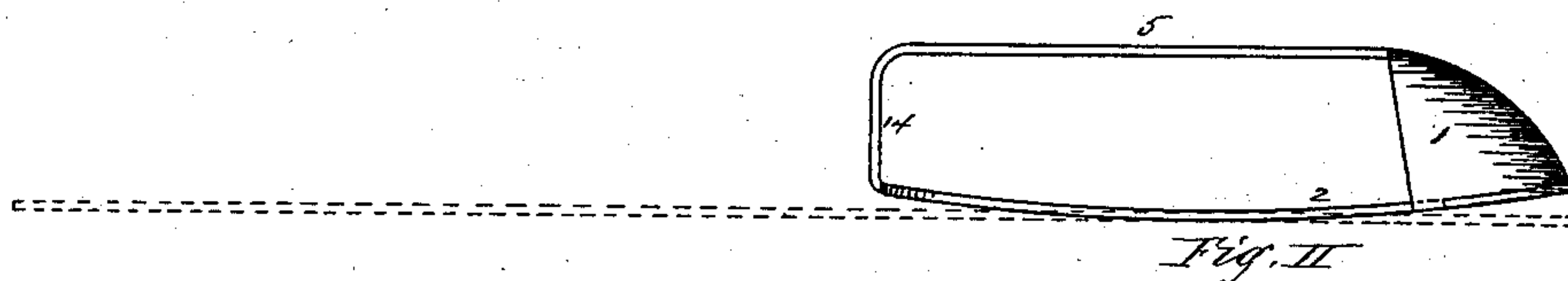
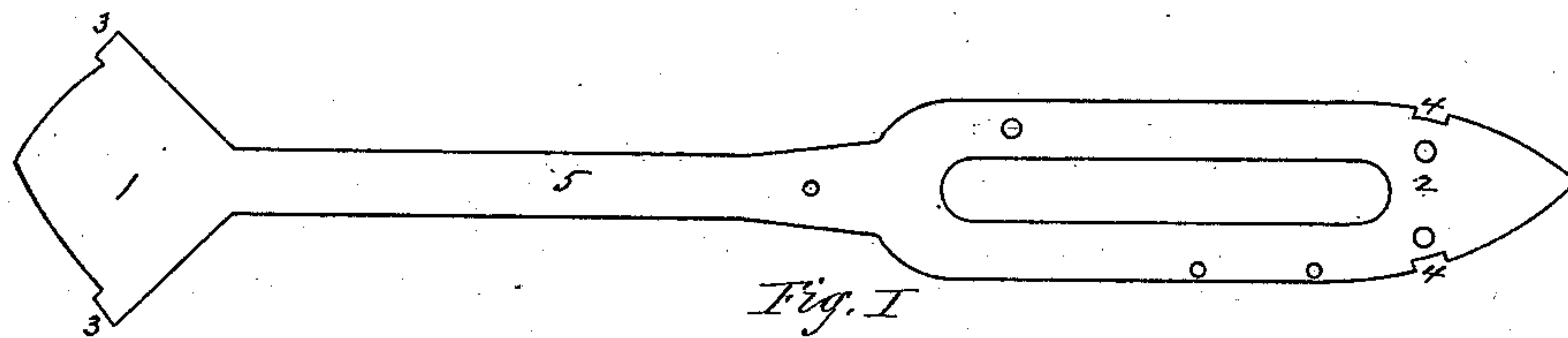
(No Model.)

F. N. HATHAWAY & C. A. LOOMIS.

SEWING MACHINE SHUTTLE.

No. 256,318.

Patented Apr. 11, 1882.



Witnesses.

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UNITED STATES PATENT OFFICE.

FRANK N. HATHAWAY AND CHARLES A. LOOMIS, OF SPRINGFIELD, MASS.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 256,318, dated April 11, 1882.

Application filed February 3, 1882. (No model.)

To all whom it may concern:

Be it known that we, FRANK N. HATHAWAY and CHARLES A. LOOMIS, both of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and useful Improvement in Shuttles for Sewing-Machines, of which the following is a specification and description.

The object of our invention is to provide a shuttle which is light, durable, and strong, and which will move in the raceway of the machine with the minimum amount of noise, cheap in its construction, and whose thread-controlling devices are effective, and are easily made and adjusted; and we accomplish this by the mechanism and construction substantially as hereinafter described, and illustrated in the accompanying drawings, in which—

Figure I is a plan view of the sheet-metal blank from which our improved shuttle is made. Fig. II is a side view of the blank after being bent up to form the shuttle. Fig. III is a side view of the shuttle with a portion of the nose broken away, and showing the thread-controlling appliances secured and adjusted in place. Fig. IV is a top view of Fig. III. Fig. V is a transverse section at line A of Fig. III, looking toward the nose of the shuttle. Fig. VI is a transverse section at the same line, looking toward the heel or rear end of the shuttle. Fig. VII is a plan and edge view of the tension-spring. Fig. VIII is a plan view of the blank from which the bobbin-spring holder is formed, and Fig. IX is an end view of the bobbin-spring holder after being formed from the blank.

In the drawings, Fig. I represents our shuttle-blank punched out in a single piece from suitable sheet metal—sheet-steel of the desired thickness being preferred—and the end, as 1, of this blank is of such form that when the blank is bent into the form shown in Fig. II the outer edges of the part, as 1, will fit properly the pointed end of the part 2, the edges of the part 1 being bent down all around to meet the edges of the pointed end of the part 2, as shown in Fig. II. The part 1 then forms the nose of the shuttle, the part 2 forms the face-plate, and the part 5 forms the frame and heel of the shuttle.

If desirable, in forming up a shuttle in this manner from sheet-steel small projections, as 3, may be made on the edges of the part 1 of the blank to enter corresponding recesses, as 4, in the edges of the pointed end of the blank; and the edges of the part 1 may be secured to the pointed end of the blank by brazing, or in any other desired manner. We also punch out from suitable thin sheet-steel or other metal a blank whose form is clearly shown in Fig. VIII, and upon which are the two projections, as 12, which are bent inward at right angles to the part 11, and the part 11 is bent into a cylindrical form, with the two parts, as 10, extending parallel therefrom for a short distance; and then outward and away from each other, and with a hole near each end. When thus bent into form its shape is shown in Fig. IX, in which 11 is a cylinder, open at one end and closed at the other by the projections, as 12, which extend inward, each about half the diameter of the cylinder, toward each other. A small cylindrical plug, as 13, (shown in Fig. III,) with a small cavity in the end, is inserted in the open end of the cylinder, with a small spiral spring inside, and the parts, as 10, are riveted or otherwise secured to the inside of the face-plate, inside the cavity formed by the part 1, as shown clearly in Fig. III. The small cavity in the end of the plug, as 13, receives one of the conical ends of the bobbin, and a small cavity is made on the inside of the frame at 14 to receive the other conical end of the bobbin, and the spiral spring within the cylinder 11 of Fig. III forces the plug, as 13, against the bobbin, and the latter against the opposite end of the shuttle, so that the bobbin is always firmly held in place. A tension-spring, as 7, is pivoted by a screw, as 8, to one edge of the face-plate of the shuttle, on the inside, said spring being provided with a thread-notch, as 9, and a distributing-bar, as 6, is secured to the opposite edge of the inside of the face-plate.

The tension-spring, as 7, may be swung outward on its pivot, as shown in dotted lines in Fig. IV, and the bobbin being secured in the shuttle, the thread is passed from the bobbin over into the thread-notch, as 9, and then backward beneath the tension-spring, and the lat-

ter being swung inward into place, the thread is held between the spring and the face-plate more or less firmly, according as the spring is held more or less firmly against the face-plate by its screw, as 8. The thread then passes to the opposite edge of the face-plate and out through the distributing-bar, as 6, and thence to the needle.

To remove the bobbin from the shuttle, the former is pressed against the plug, as 13, forcing the latter into the cylinder, as 11, when the opposite end of the bobbin is free from the cavity in the shuttle, and another bobbin is inserted by placing its conical end in the cavity in the plug, as 13, pressing the latter in, and securing the opposite conical end in its cavity in the shuttle.

If greater tension is desired on the bobbin-thread, the screw, as 8, is turned in more or less until the desired tension is obtained.

It will be perceived that this shuttle is very light, and will consequently move in the race-way of the machine with less noise than the ordinary heavier shuttles, and it will move with a certain amount of elasticity, as it is made of thin sheet metal, which possesses a certain degree of elasticity which cast metal does not possess.

Having thus described our invention, what we claim as new is—

1. An improved shuttle for sewing-machines, made of a blank punched in a single piece from sheet metal, and bent into form and its ends secured together, substantially as described.

2. The combination, in a shuttle for sewing-machines, of a tension-spring, as 7, provided with a thread-notch, 9, and pivoted at one end to swing outward, and adapted to be adjusted against the inside of the face-plate with more or less pressure, an adjusting-screw, 8, for adjusting the said spring, and a bobbin-holder and spring secured to the face-plate of the shuttle at the pointed end, and a distributing-bar, as 6, secured at both ends to the face-plate of the shuttle, substantially as described.

3. In an improved shuttle for sewing-machines, a bobbin-spring holder formed up from a thin sheet-metal blank in a single piece, and secured to the face-plate and provided with a cylinder adapted to contain a spring, and a plug to receive the end of the bobbin and hold the latter in place, substantially as described.

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