

No. 759,082.

PATENTED MAY 3, 1904.

H. A. DODGE.
SEWING MACHINE SHUTTLE.
APPLICATION FILED DEC. 24, 1903.

NO MODEL.

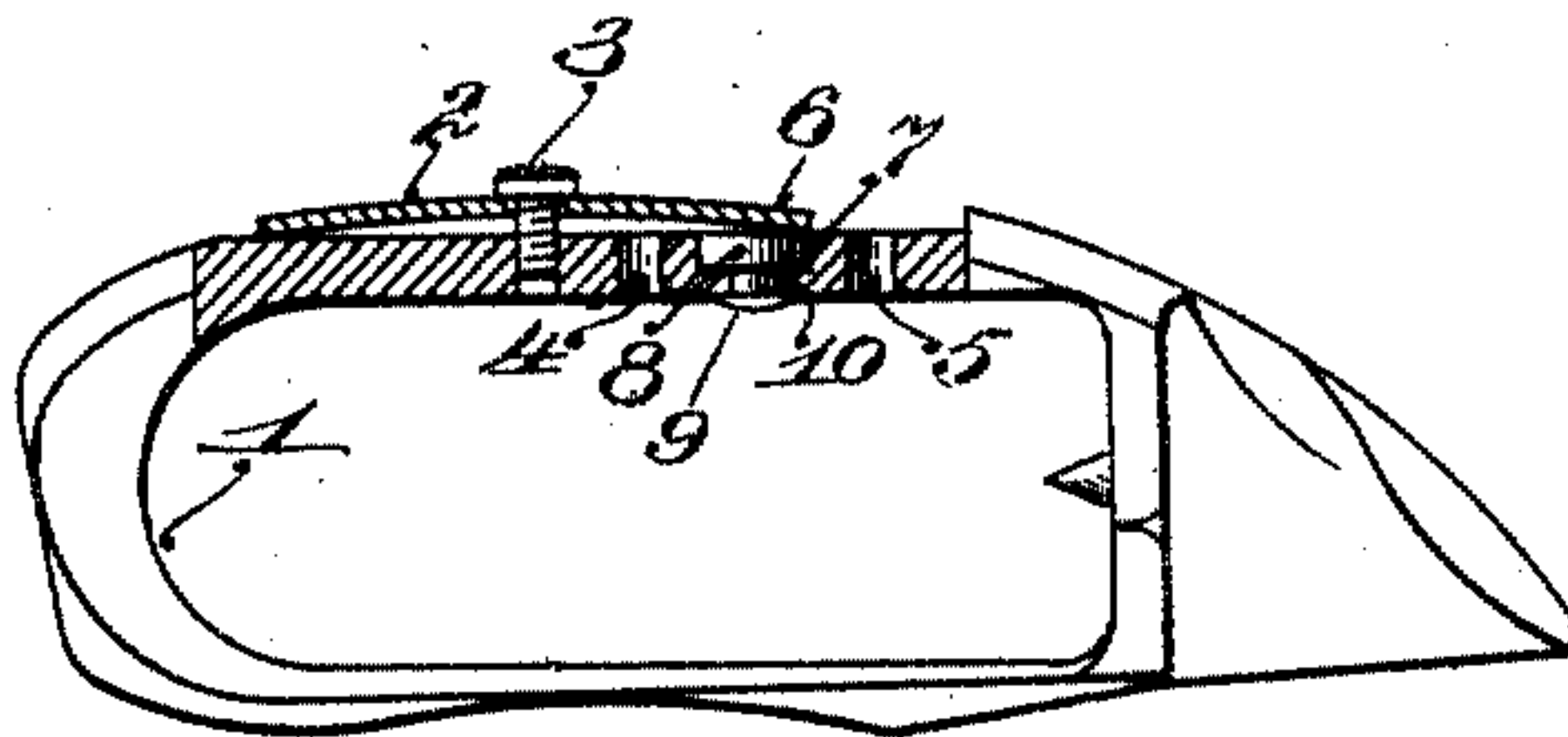


Fig. 1.

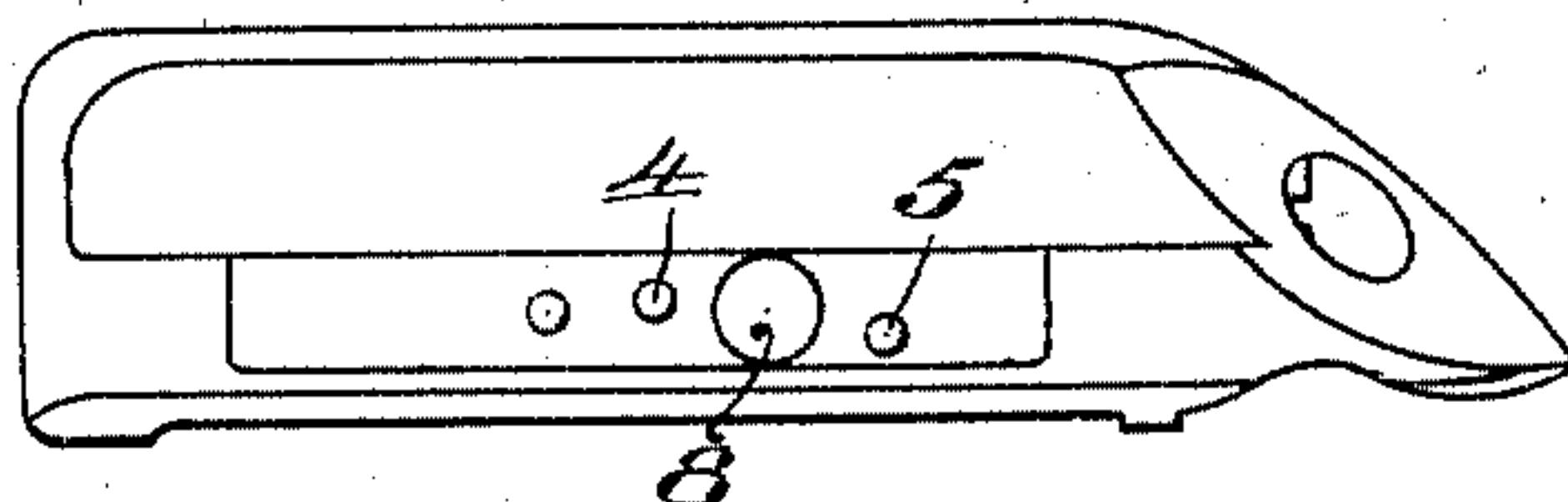


Fig. 2.

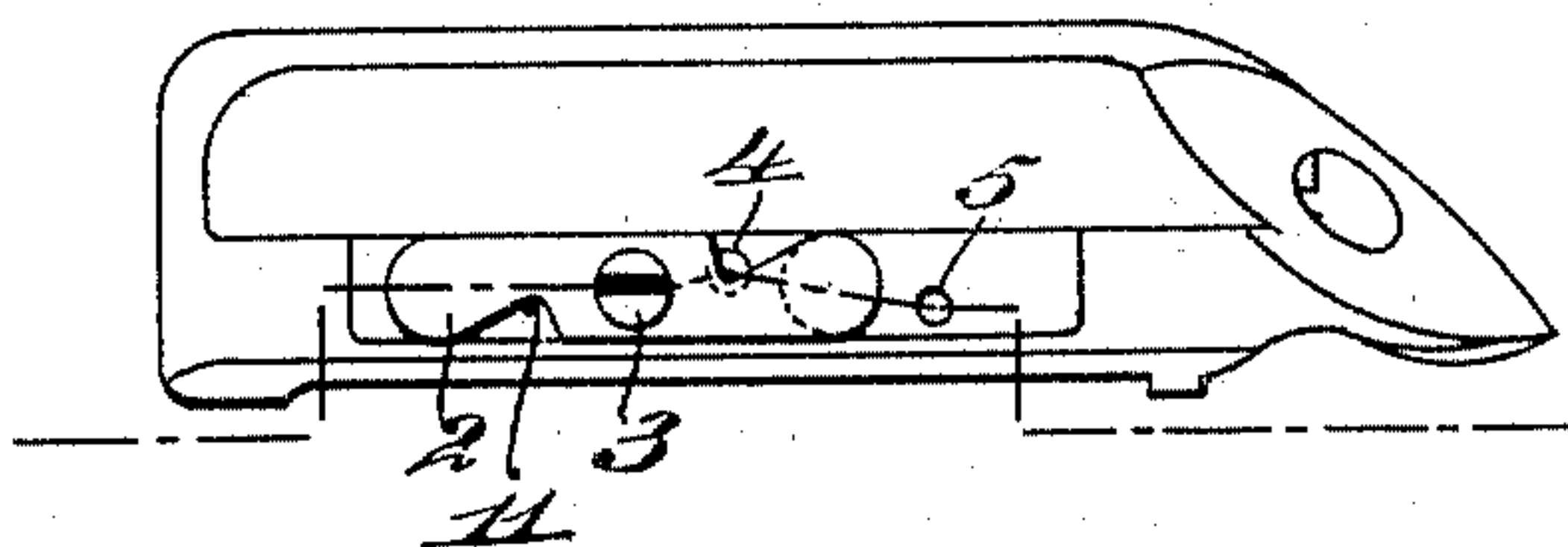


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

HENRY A. DODGE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO CAMPBELL, BOSWORTH MACHINERY COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

SEWING-MACHINE SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 759,082, dated May 3, 1904.

Application filed December 24, 1903. Serial No. 186,452. (No model.)

To all whom it may concern:

Be it known that I, HENRY A. DODGE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Shuttles; and I do hereby 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 ap-
 10 pertains to make and use the same.

This invention relates to an improvement in shuttles for sewing-machines.

The tension device of a shuttle as usually made comprises an adjustable spring arranged
 15 to press the shuttle-thread against a coöperating friction-surface, thereby subjecting it to tension when it is drawn through the device. The friction-surface tends to wear and become grooved, particularly when made of compara-
 20 tively soft material, and where the friction-surface is embodied, as is the common practice, in the body of the shuttle the grooving of the surface by the thread necessitates the renewal of the shuttle-body before it is in
 25 other respects worn out. It is impracticable, moreover, to harden the steel of which the shuttle-body is composed or the part of the shuttle-body carrying the friction-surface, owing to the shocks to which the shuttle is
 30 subjected in its rapid oscillation, which preclude the use of brittle material in the body of the shuttle. To avoid the disadvantages of such a construction, it has been proposed to embody the friction-surface in a removable
 35 tension device comprising a base-plate, which may be renewed when worn. The plate in the proposed construction is seated in a slot in the shuttle-body and is secured in place by screws or rivets, and the tension-spring is se-
 40 cured to this plate by an adjusting-screw. This construction has several serious disadvantages. The separable tension device being of substantial weight is liable to become loosened from the shuttle-body, owing to the
 45 constant vibration, and in such case it may cause serious injury to the machine by falling between moving parts. Moreover, the re-

newal of the entire base-plate of the tension device is necessary when the small part there-
 of subject to wear is worn out. 50

The object of the present invention is to avoid the disadvantages of the constructions above described; and to this end the invention consists in a shuttle having a wear-plate of improved form secured to the shuttle-body in
 55 such a way that it cannot become separated therefrom during the operation of the machine and arranged to be movable so as to present new surfaces without the renewal of the plate.

In the drawings, Figure 1 is a front eleva-
 60 tion of a shuttle embodying the present invention, the tension device being shown in section. Fig. 2 is a plan view of the shuttle with the tension-spring removed, and Fig. 3 is a similar view of the complete shuttle. 65

The illustrated embodiment of the invention has a hollow shuttle-body 1, in which a bobbin of thread may be mounted. A tension-spring 2 of ordinary form is adjustably secured to the body by a screw 3. Holes 4
 70 and 5 in the body serve as guides to direct the thread under the end of the tension-spring, the thread passing out through the hole 4 and thence under the end 6 of the spring and in through the hole 5. Under the end 6 of the
 75 tension-spring a socket 7 is formed in the body, and in this socket is a wear-plate 8, which may be rotated therein, but is secured against displacement therefrom both by the tension-spring and by a stem 9, projecting
 80 from the wear-plate through the perforation 10, located centrally with respect to the socket and headed over on the inside of the body. The tension-spring has notches 11 to aid in
 85 threading the tension device, which is accomplished in the usual manner. The thread is pressed against the face of the wear-plate, and the pressure may be adjusted by turning the screw 3. The wear-plate is preferably made
 90 of steel, the head being hardened and the stem left soft for convenience in heading it. In the preferred embodiment of the invention the wear-plate fits loosely in the socket, and the stem is headed over loosely, so that the

wear-plate is free to turn without the application of any considerable force. Any rotation of the wear-plate will result merely in more uniform wear of its face, and if the plate
 5 remains long enough in one position to become grooved by the thread it may be easily turned to a new position by a screw-driver taking into the groove so produced, the tension-spring being turned aside for the purpose.
 10

The stem 10 serves to retain the wear-plate in place when the tension-spring is removed for any reason; but it is not an essential feature of the invention, for the wear-plate is
 15 secured in its socket during the operation of the shuttle by the pressure of the thread against it. Since the tension-spring is held in place by the adjusting-screw, accidental release of the wear-plate can occur only by the loss of
 20 this screw, which cannot occur, as any loosening of the screw will change the tension and result in an immediate readjustment by the operator.

Although in the preferred form of the invention the wear-plate and socket are round,
 25 this form is not essential, as any symmetrical form which will permit the removal of the wear-plate from the socket and its replacement in a new position presenting new wearing-surface is within the scope of the invention.
 30

Having thus described my invention, what is claimed is—

1. A shuttle for sewing-machines, having, in combination a body provided with a socket, 35 a wear-plate of symmetrical form fitting the socket and arranged to be turned to different positions therein, thread-guiding means arranged to direct the shuttle-thread across the face of the wear-plate, and a tension-spring 40 arranged to press the thread against the wear-plate to subject the thread to tension, substantially as described.

2. A shuttle for sewing-machines, having, in combination, a body provided with a circular socket and a perforation central therein, 45 a circular wear-plate fitting the socket and having a stem passing through the perforation and headed to prevent displacement of the wear-plate from the socket, thread-guiding means arranged to direct the shuttle-thread across the face of the wear-plate, and a tension-spring arranged to press the thread 50 against the wear-plate to subject the thread to tension, substantially as described. 55

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

HENRY A. DODGE.

Witnesses:

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 FARNUM F. DORSEY.