No. 681,956. Patented Sept. 3, 1901.

H. A. DODGE & W. WILSON.

THROAT PLATE FOR SEWING MACHINES.

(Application filed May 23, 1901.)

(No Model.)

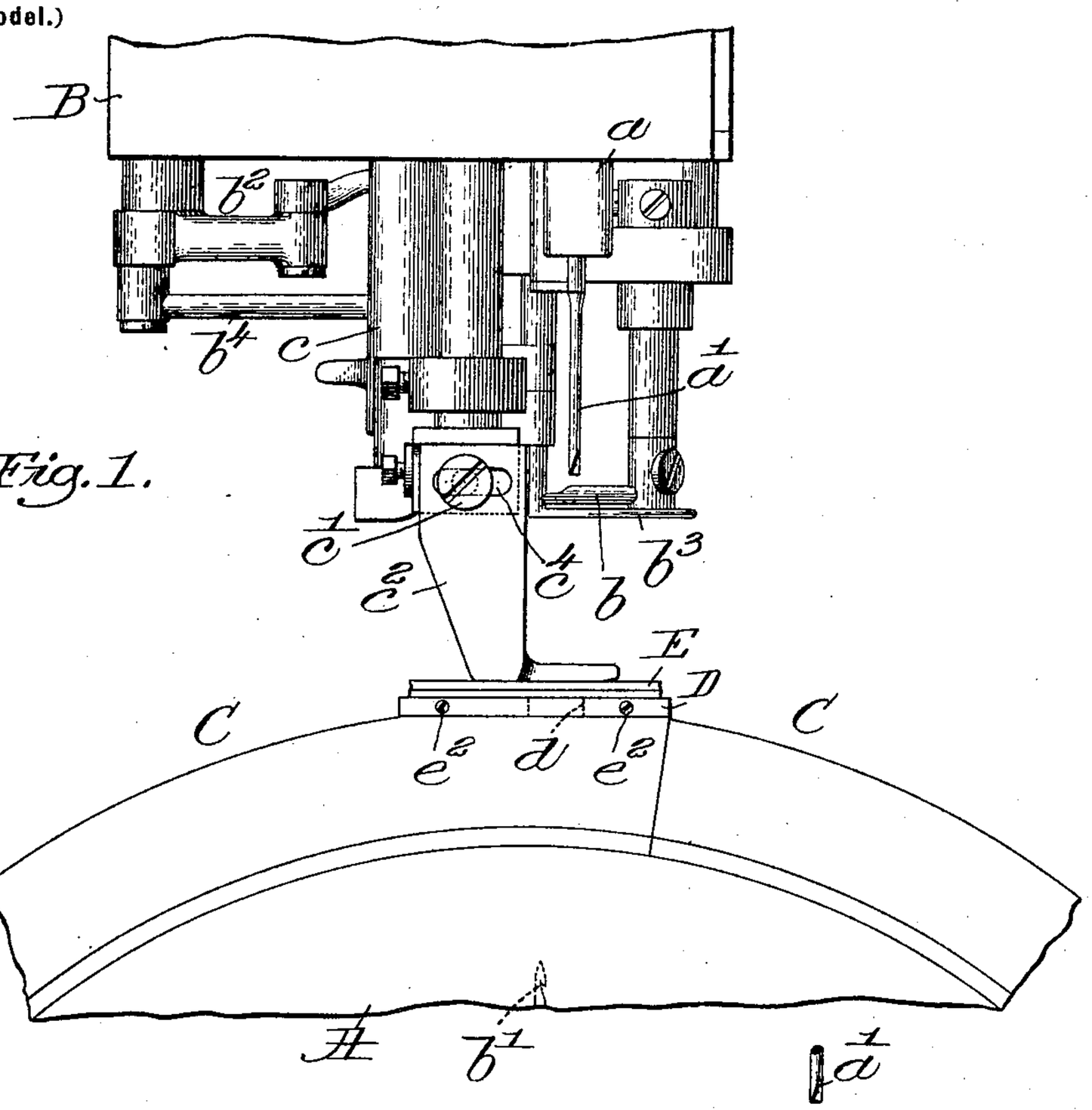

Fig. 1.

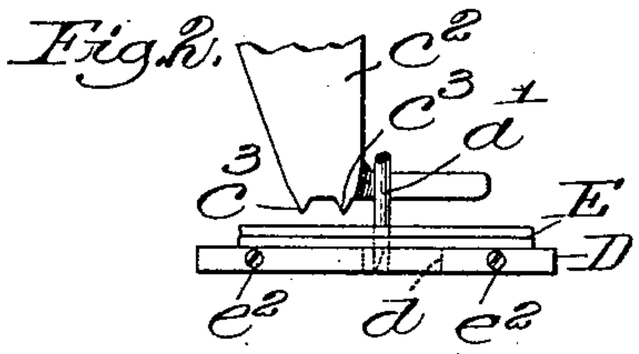

Fig. 2.

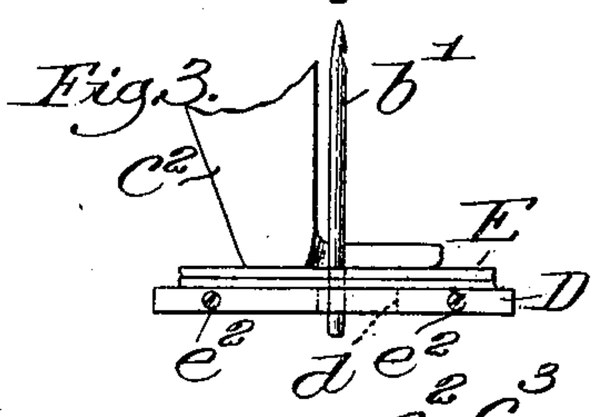

Fig. 3.

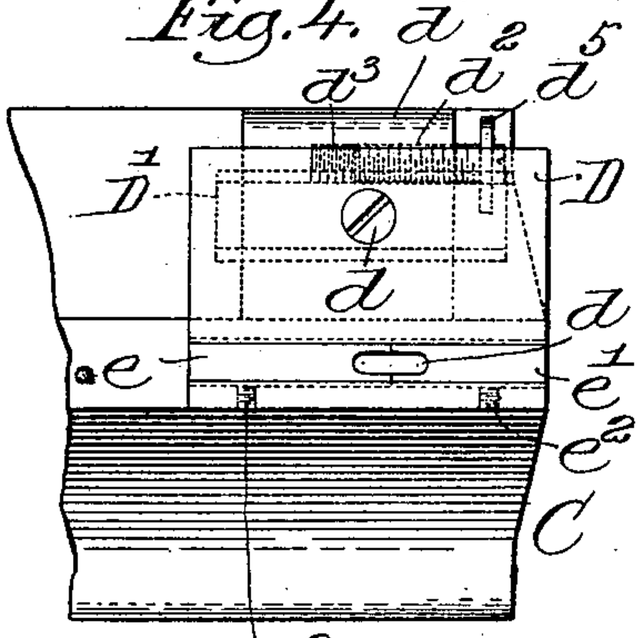

Fig. 4.

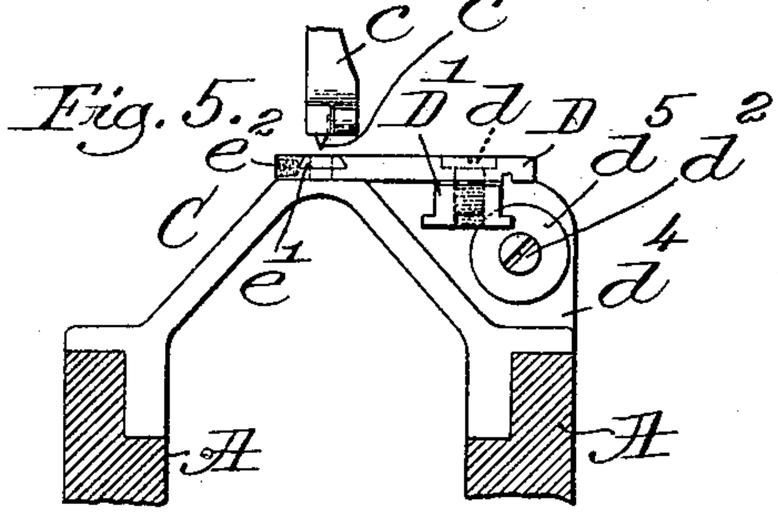

Fig. 5.

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UNITED STATES PATENT OFFICE.

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THROAT-PLATE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 681,956, dated September 3, 1901.

Application filed May 23, 1901. Serial No. 61,487. (No model.)

To all whom it may concern:

Be it known that we, HENRY A. DODGE and WILLIAM WILSON, citizens of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Throat-Plates for Sewing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve that class of sewing-machines using an awl and a hooked needle, of which United States Patent No. 374,934, dated December 20, 1887, is a type.

Machines of the class referred to are employed for stitching various articles, among which we will name harnesses, horse-boots, hoof-pads, &c., and work wherein it becomes necessary to change the throat-plate that it may properly sustain the work to be stitched whatever its shape.

One part of this invention consists in providing for the easy and quick removal of one throat-plate and the application of another throat-plate of the proper shape and for the adjustment of the throat-plate of whatever form to adjust it to the awl and presser-foot used.

Figure 1, in front elevation, shows a portion of a sewing-machine with our improvements added to enable our invention to be understood. Fig. 2 is a detail showing the throat-plate, stock thereon, and the awl and presser-foot, the latter being elevated. Fig. 3 shows the presser-foot resting on the stock with the needle elevated preparatory to being supplied with thread. Fig. 4 is a plan view of the throat-plate shown in Fig. 2. Fig. 5 is an elevation looking at Fig. 2 from the right.

The framework of the sewing-machine, (represented at A B,) the raceway-cover C, the awl-bar a, having an awl a', the thread-guide b for supplying the hooked needle b' with thread, the vibrating arm b^2 for moving the thread-guide, the thread-controller b^3, the link b^4 for moving it, and the presser-foot-carrying bar c are and may be all as common to United States Patent No. 374,934, dated December 20, 1887, and said parts may be actuated by means fully provided for in said patent. The bar c has connected with it adjustably, as by screw c', a presser-foot c^2, it having at its under side suitable projections c^3 to enable the foot to act as a stitch divider or separator. The screw c' enters a slot c^4 in the presser-foot, so that the foot may be adjusted to adapt it to the position of the awl and needle as the latter are adjusted in alinement for sewing.

The throat-plate is now commonly connected with a cast-iron cover-plate or other cast-metal frame of the machine by means of two small screws entering threaded holes in the cast-metal part, and the workman in setting up these screws frequently turns them so hard as to break the cast-metal threads or split and injure the heads of said screws. If the threads are broken, the plate cannot be thereafter held properly, and to provide for breaking the heads, which is not infrequent, a number of screws have to be kept on hand. We have aimed to do away with the cast-metal threaded part to be entered by the screw and in doing so have connected the throat-plate D by a larger and stronger screw d than heretofore employed, said screw entering a threaded hole in a hardened-steel carriage D', whereby one throat-plate may be readily removed and another put in its place, depending upon the character of work to be done, without liability of injury to the screw-threads or screw-head.

The throat-plate has a slot d' for the passage of the awl and needle, and to adapt the machine for its various uses in stitching and that it may properly support the stock the stitch of which is to be set up and shaped by the presser-foot we have provided means for adjusting the throat-plate longitudinally of the seam being stitched, so that the plate will sustain the under side of the stock directly opposed to the projection at the under side of the presser-foot; otherwise the stock might be pushed by the said projection into the slot d'. To enable this adjustment to be made, we have provided an adjusting device, herein represented as a screw d^2, having its shank inserted in a threaded hole d^3 of a lug d^4, connected with or forming part of the cover-

plate. The screw d^2 has a projecting collar d^5, which, as shown, enters a suitable notch in the carriage D′, so that whenever the screw d is slackened a little the workman by a screw-driver or other tool may engage the screw d^2 and rotate it freely without strain and slide the carriage engaged by the collar d^5 of said screw in either direction, that depending upon the direction of rotation of the adjusting device. The throat-plate may be adjusted easily whenever the screw d is slightly slackened, and the carriage may be moved in the groove in the block d^4, in which the carriage is free to be slid. The throat-plate having been properly adjusted, the screw d is turned in to draw the carriage against the block d^4 and to force the under side of the throat-plate frictionally upon said block, thus locking the carriage in its adjusted position. The slot d' for the awl and needle is shown in Figs. 4 and 5 as adapted to be enlarged in the direction of its length, which may be desirable at some times and in connection with some kinds of work, either with or without adjusting the throat-plate longitudinally parallel with the seam to be sewed. This is accomplished by providing the throat-plate D with two slides e e', suitably notched at their contiguous ends. These slides are held in their adjusted position by means of suitable screws e^2, the screws abutting against the edges of the slides, as in the detail Fig. 5. When a presser-foot of the class shown in the present drawings or any presser-foot having a projection to act as a set-up or shaper for the stitch is used, it is essential that the projections c^3 contact with the upper side of the stock at a point where the stock is fully supported by the throat-plate, and it is essential for proper work that a solid part of the throat-plate underlie the projection or else there is a tendency for the projections to force the stock into the slot d', hence the importance of making the throat-plate adjustable longitudinally of the seam being stitched, which we believe has never before been done.

We have shown one practical way of adjusting the throat-plate longitudinally of the seam; but this invention is not limited to the particular devices herein shown to effect that object, as we may vary the construction of the adjusting means without departing from our invention. Herein the stock is represented at E as resting upon the throat-plate. It is to be noted also that the combined adjustability of the slot d' and the throat-plate enables the slot to be regulated in size and character to the awl and needle being used at the time and the throat-plate then adjusted to bring the slot in proper position relative to the presser-foot, as before described.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a sewing-machine, a presser-foot having at its under side a projection to enter the stock when the foot is lowered, combined with a throat-plate having provision for locating the slot therein for the awl and needle relatively to the projection of the presser-foot to obviate the depression of the stock by the presser-foot into said slot.

2. In a sewing-machine, the combination of a throat-plate, a carriage independent of the throat-plate and movable on the machine-frame, means to detachably connect the throat-plate to the carriage, and separate means for longitudinally adjusting the carriage and the throat-plate carried thereby.

3. In a sewing-machine, a throat-plate, a carriage, means to adjust the carriage longitudinally, and means independent of said adjusting means to positively clamp the throat-plate and carriage in adjusted position.

4. In a sewing-machine, a throat-plate, a carriage to which the throat-plate is detachably connected, a groove to receive said carriage, an adjusting-screw operatively connected with said carriage whereby said carriage may be moved in the direction of movement of the screw.

5. In a sewing-machine, a block, an adjustable carriage sustained by the block, a throat-plate having a slot, a screw to unite said throat-plate with said carriage, the screw when turned into the carriage positively clamping the carriage and plate to said block.

6. In a sewing-machine, a throat-plate having a slot for the awl and needle, provisions for varying the length of the slot, and means for adjusting the throat-plate.

7. In a sewing-machine, a throat-plate having a slot for the awl and needle, provisions for varying the length of said slot to suit the character of awl or needle, a carriage on which the throat-plate is mounted and means for adjusting the carriage and consequently the throat-plate in a direction longitudinally of the seam.

8. In a sewing-machine, a throat-plate having a slot for the awl and needle, provisions for varying the length of the slot to suit the character of awl and needle, a carriage and means for detachably connecting the throat-plate and carriage.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HENRY A. DODGE.
WILLIAM WILSON.

Witnesses:
GEO. W. GREGORY,
AUGUSTA E. DEAN.