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Patented Jan. 8, 1901.

A. STEWARD.

BINDING ATTACHMENT FOR SEWING MACHINES.

(Application filed Aug. 24, 1899.)

(No Model.)

2 Sheets—Sheet 2.

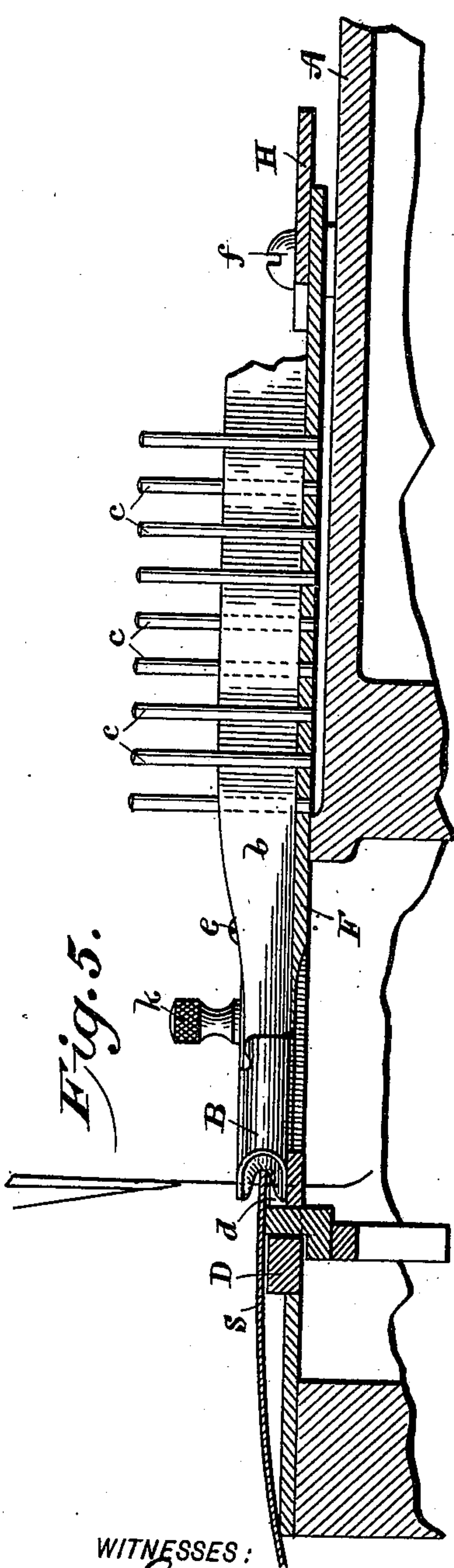


Fig. 5.

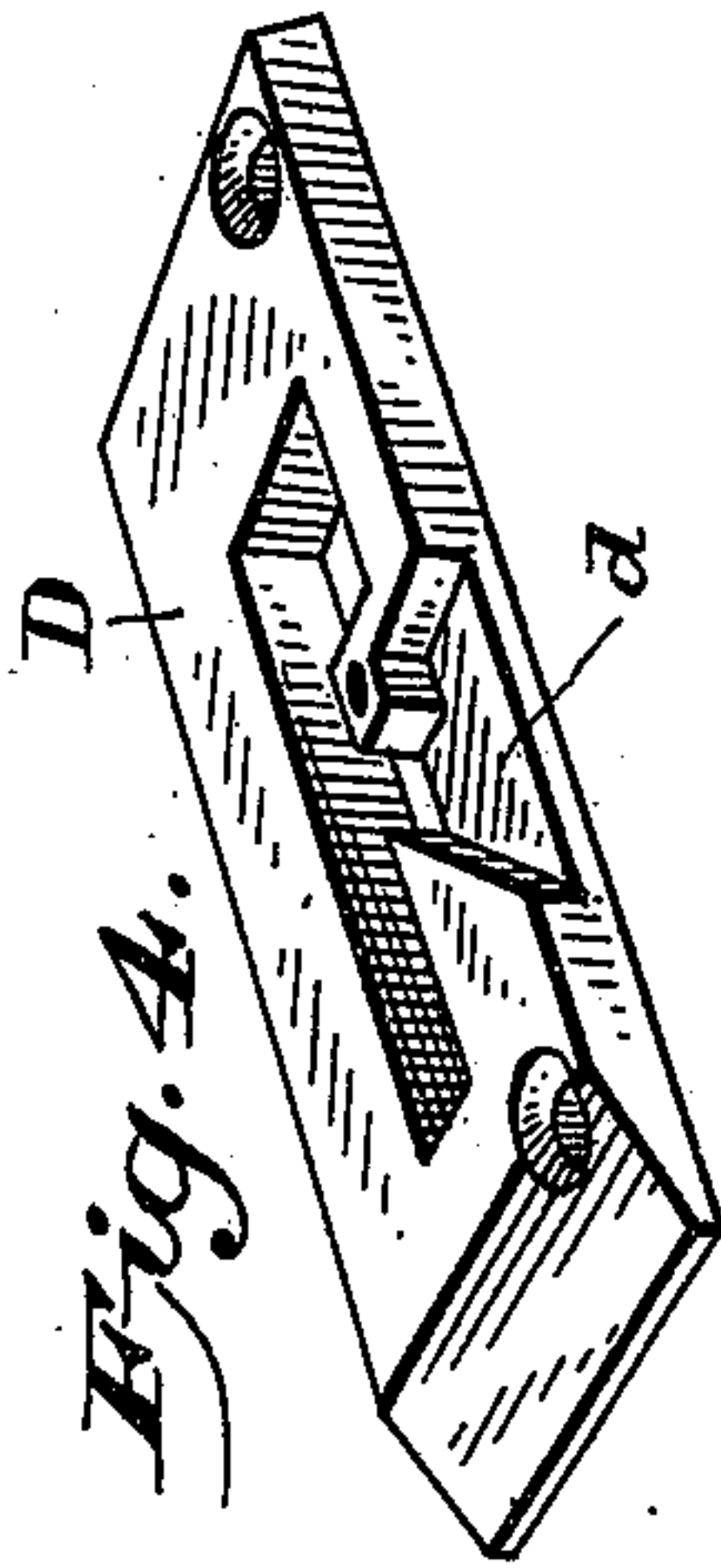


Fig. 4.

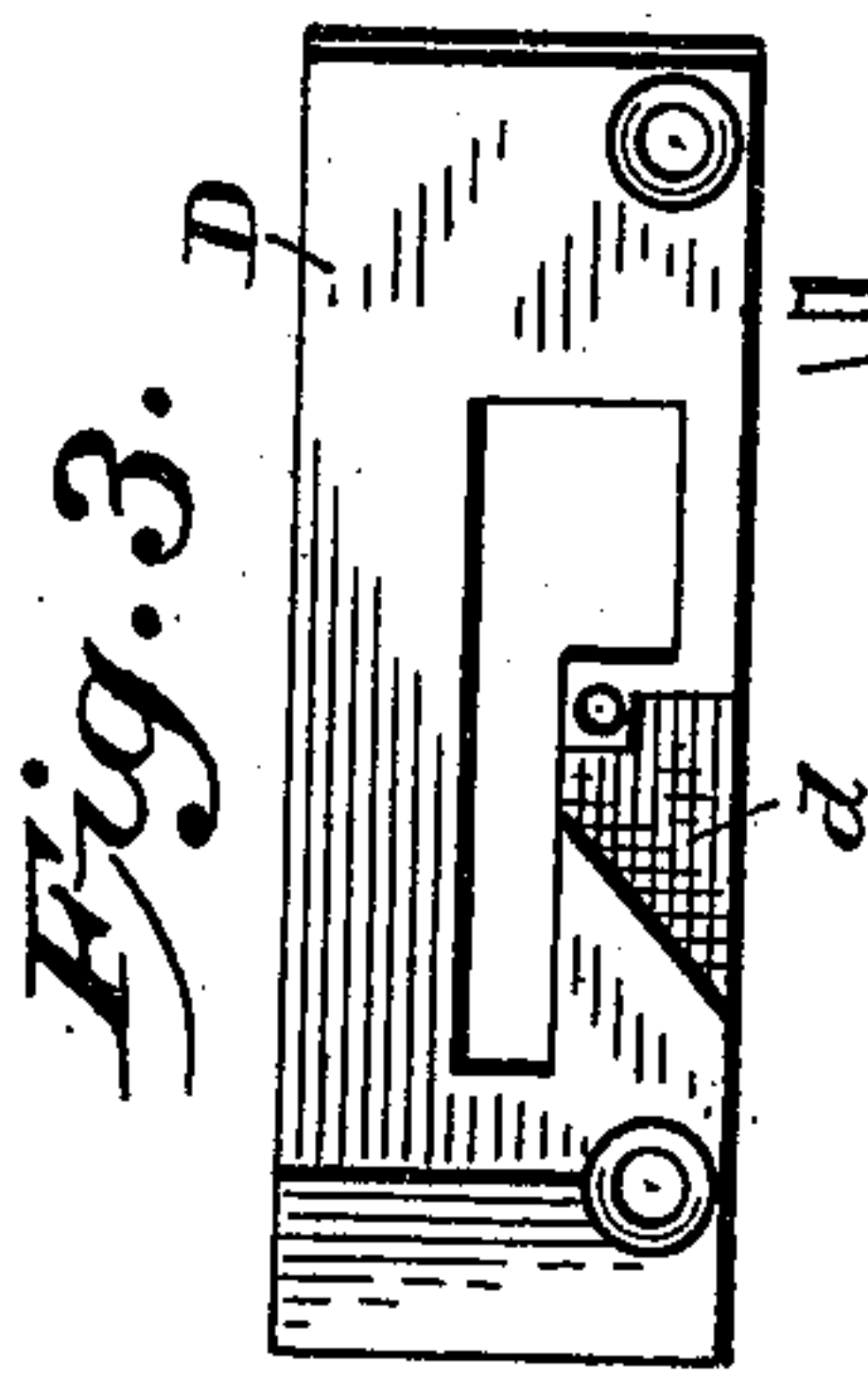
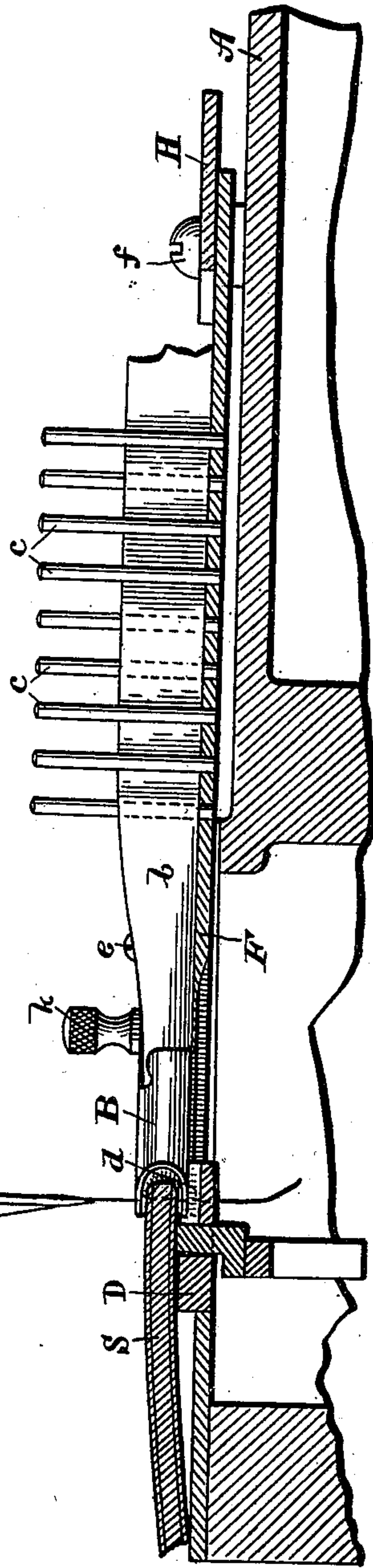


Fig. 3.

Fig. 6.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## BINDING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 665,483, dated January 8, 1901.

Application filed August 24, 1899. Serial No. 728,272. (No model.)

*To all whom it may concern:*

Be it known that I, AURELIUS STEWARD, a citizen of the United States, and a resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Sewing-Machines for Binding, of which the following is a specification.

My invention relates to sewing-machines, and has special reference to the construction and adaptation of binders thereto, the object being to produce a binder which will adapt itself and the binding to greatly varying thicknesses and which will not impede, but rather facilitate, the removal and reintroduction of the bobbin in replenishing the under thread in lock-stitch sewing-machines.

In the accompanying drawings, which form a part of this specification, so much only of the sewing-machine is shown as is necessary to illustrate my invention.

Figure 1 is a perspective view showing a portion of the bed-plate, the needle-bar and needle, and the presser bar and foot, together with the binding apparatus as in use. Fig. 2 is a plan view of the same with the bobbin-cover and attached binder-head turned around to permit removal of the bobbin in replenishing the under thread. Fig. 3 is a plan view of the throat-plate only disconnected. Fig. 4 is a perspective view of the same to better show the recess for the point of the binder; Fig. 5, a longitudinal sectional elevation of the apparatus, showing position of binder-head when in use on thin fabrics, and Fig. 6 the same in position assumed when binding thick fabrics, the fabric being shown at S. Figs. 4, 5, and 6 are somewhat enlarged to better show some features of the construction.

The sewing-machine which embodies my invention in this application is of the Wheeler & Wilson vertical-hook pattern, in which the "rotating hook," so called, revolves upon a vertical shaft; but it is equally adaptable to machines employing shuttles or other variety of thread-interlocking mechanism. The binder-head employed is of that class in the passing of which by turning a nearly abrupt angle the binding is changed from a convex to a concave form; but it is equally appli-

cable to the ordinary U-shaped binder in common use.

The bed-plate A of the sewing-machine and its cloth-feeding and stitch-forming mechanism are all of usual construction. The binder-head B and the friction-pins *c c*, &c., are also, under less favorable conditions, in common use, and hence a detailed description of their parts is unnecessary, except in so far as they have been modified in employing them in this invention.

The open mouth of the binder-head B is necessarily made of sufficient capacity to allow the free passage of both the binding and the thickest portions of the garment for which it is intended.

The throat-plate D of the sewing-machine is of unusual thickness, and the recess *d* (see Fig. 4) for the tip of the binder-head is of unusual depth for reasons hereinafter explained.

The binder-head is by means of the screws *e e* attached to the plate F, the holes in the stem of the binder-head being elongated to permit of slight longitudinal adjustment. Into the binder-head is also inserted the screw-knob *k*, by which to lift and turn aside plate F, when required. Into the plate F are also inserted a number of friction-pins *c c*, (nine, more or less,) between which the binding *b* may be interwoven to create sufficient tension to cause the binding to always pass smoothly into the binder. The plate F is at its other extremity, by means of the screw *f*, pivotally attached to the bracket H, which bracket is in turn rigidly attached to the bed-plate of the sewing-machine by means of the screw *i*.

The plate F is, where attached to the binder-head B, of just sufficient width to cover the opening in the bed-plate A, and when in operative position, as in Fig. 1, its front end coincides with the edge of the throat-plate D and its edges are embraced within ribs upon the bed-plate A of the sewing-machine, which hold it in position. As the plate F serves the purpose of carrying the binder-head and the friction-pins and also of covering the opening in the bed-plate A, which is left for the insertion of the bobbin, I will term it the "bobbin-cover" F.

While the front end of the bobbin-cover is of sufficient width to serve the purpose its



name would indicate, yet its middle portion is so narrowed down, as seen in Figs. 1 and 2, and the bracket H is of such a width that both shall be somewhat flexible and yielding for purposes hereinafter explained. At the end opposite the binder-head it will be seen that the bobbin-cover has an angular extension. This and the consequent necessary elongation of the bracket H are in order that the pivot-screw *f* may be located on a line with the farther edge of the bobbin-cover. In that location of the pivot it will be seen that the bobbin-cover draws promptly away from the throat-plate and presser-foot on being drawn aside, as seen in Fig. 2. The curvature of the bracket H is in order that its edge may not by contact with the friction-pins too much restrict the withdrawal of the cover. When in operative position, the downward pressure of the bobbin-cover F and bracket H is sufficient to retain the cover between the ribs upon the bed-plate A and press the binder-head B down upon the bottom of the recess *d* in the throat-plate D. As thus located the binder-head is so deeply seated in the deepened recess before referred to in the throat-plate D that the center of its open mouth through which the cloth passes is but slightly above the upper surface of the throat-plate. In this condition if a thin fabric be passed through the binder it enters on a plane even with the upper surface of the throat-plate on which it lies and passes through the center of the aperture in the binder, as may be seen in Fig. 5. If, on the contrary, a thick fabric be passed through or thick places in the fabric occur even to the full capacity of the binder, the binder-head is by its flexible and yielding connection permitted to rise and still present the center of its aperture to the material, as shown in Fig. 6. This is especially beneficial in binding corsets, where the material varies from a single ply to several thicknesses interlaid at frequent intervals with cords, bones, and reeds.

The recess between the ribs upon the bed-plate A is of sufficient depth to prevent displacement of the bobbin-cover F, while permitting the binder-head to rise and fall suffi-

ciently to conform to the different thicknesses of fabric. When the bobbin-thread is to be replenished, however, the operator may by means of the knob *k* lift the bobbin-cover out of the recess and swing it toward him to render the bobbin (shown at L) freely accessible, as shown in Fig. 2. By so doing the binding is not in the least disarranged, as a short stretch of binding is merely drawn through the binder-head from the source of supply, while that between the binder and the fabric is safely held against displacement. When the replenished bobbin has been inserted, it is only necessary to draw upon the slack binding back of the friction-pins to cause all parts to resume their correct position, when the stitching may be continued without any imperfection to indicate that the work has been interrupted.

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

1. In a sewing-machine the combination of stitch-forming mechanism with the resilient pivoted plate adapted to fit within the usual ribs on the sewing-machine bed-plate and carrying the binder-head, the throat-plate provided with a recess within which the nose of said binder-head normally projects, whereby the latter will be depressed within said recess when thin material is being operated upon and allowed to rise for the passage of thick material, substantially as set forth.

2. In a sewing-machine, the combination of stitch-forming mechanism, and a binder-head, with the resilient plate to which said binder-head is secured adapted to fit and be held within the usual ribs on the sewing-machine bed-plate, as described, and a bracket detachably secured to said bed-plate and having said resilient plate pivoted thereto, all substantially as and for the purposes specified.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 21st day of August, A. D. 1899.

AURELIUS STEWARD.

Witnesses:

J. S. FINCH,  
F. S. KING.