J. P. WEIS.

WORK SUPPORTING PLATE.

APPLICATION FILED FEB. 1, 1912.

1,145,175. Patented July 6, 1915.

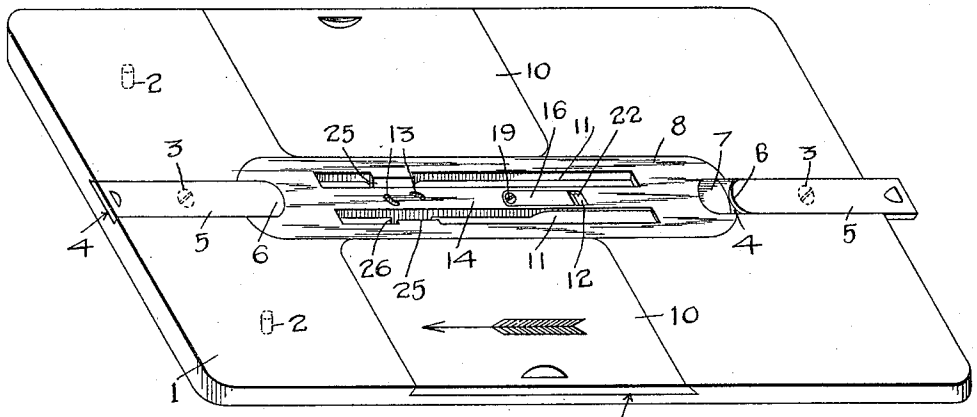


Fig. 1.

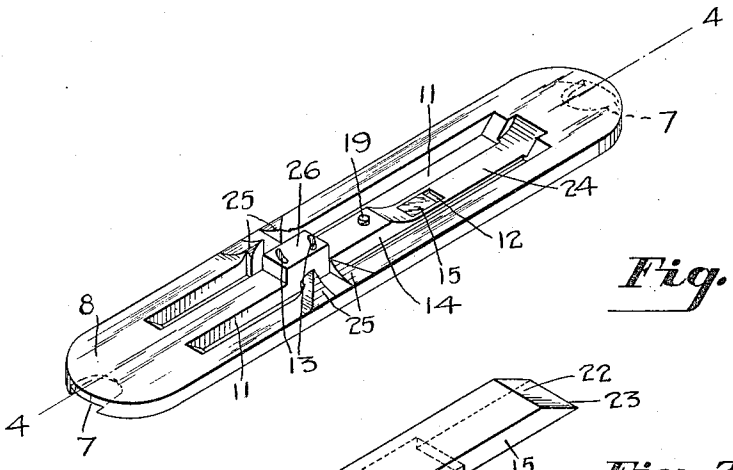


Fig. 2.

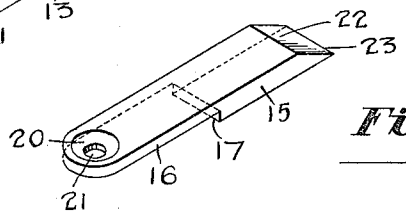
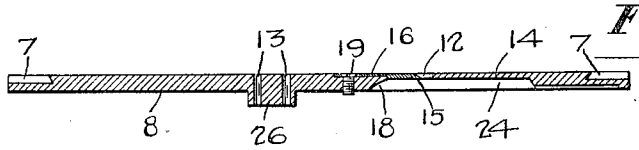


Fig. 3

Fig. 4.



WITNESSES

John C. Kopf

Geo. A. Senior

INVENTOR:

John P. Weis.

BY

Chas. W. C. Cushman

ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN P. WEIS, OF NYACK, NEW YORK, ASSIGNOR TO CHARLES McC. CHAPMAN, OF NEW YORK, N. Y.

WORK-SUPPORTING PLATE.

1,145,175. Specification of Letters Patent. Patented July 6, 1915.

Application filed February 1, 1912. Serial No. 674,791.

To all whom it may concern:

Be it known that I, JOHN P. WEIS, a citizen of the United States, residing in Nyack, county of Rockland, and State of New York, have invented a new and useful Improvement in Work-Supporting Plates, of which the following is a description.

This invention relates to thread-drawing machines and to combination thread-drawing and hemstitching machines, and particularly relates to work-supporting plates for such machines.

Among the objects of my invention may be noted the following: to provide a simple, cheap, effective and compact structure whereby the work-plate, throat-plate and ledger-blade of a thread-drawing machine, or combination thread-drawing and hemstitching machine may be combined and dissociated rapidly, properly and without trouble, at any time desired, and especially when the ledger-blade is to be sharpened or replaced, or when it is desired, for any reason, to inspect the ledger-blade or the throat-plate, or the parts of the machine beneath the throat-plate; to provide a structure by means of which the throat-plate may be removed from the machine and replaced without the use of tools or the necessity for undoing screws and like usual securing media; to provide a structure of ledger-blade and throat-plate whereby the former may be securely and firmly held in place and prevented from shifting under any circumstances during the operation of the machine; and to provide certain other details of construction which make the work-plate and throat-plate particularly adaptable to machines of the class above noted.

With the above objects in view, and others which will be detailed during the course of this description, my invention consists in the parts, features and elements and combinations thereof, all as hereinafter described and claimed.

In order that my invention may be clearly understood, I have provided drawings wherein: Figure 1 is a perspective view of a work-plate showing the means for holding the throat-plate and ledger-blade in operative position; Fig. 2 is a perspective view of the bottom of the throat-plate; Fig. 3 is a perspective view of the ledger-blade; and Fig. 4 is a section of the throat-plate on the line 4—4 of Fig. 2.

Referring to the drawings, 1 indicates the work-plate which may be of any desired size, according to the character of the machine to which it is to be applied; and which work-plate may be either set in an opening in the table or stand made especially for it, or may be secured on the top of the bed of the machine in proper location by means of one or more pins 2, projecting from the bottom of the plate into holes in said bed and firmly secured in place by means of screws 3, tapped through the work-plate into said bed, the heads of the screws being flush with the bottoms of grooves 4, extending longitudinally of said work-plate, as shown in Fig. 1. The grooves just referred to are made in dove-tail form and receive therein sliding locking-plates 5, the forward ends of which are rounded, as at 6, for coöperation with dove-tail, rounded-end grooves 7, in the surface of the throat-plate 8, in opposite ends thereof. The throat-plate is set down in the surface of the work-plate and extends longitudinally of the latter and terminates preferably equi-distant from the opposite ends thereof. The work-plate is also provided with opposite dove-tail grooves 9, in its upper surface, in which are received cover-plates 10, these plates being adapted to cover the loopers of the two-needle combination thread-drawing and hemstitching machine made the subject of the application of Charles McC. Chapman, Serial No. 487,477, filed April 2, 1909, for which machine the invention herein disclosed was practically constructed. The several plates and grooves just described are so formed and constructed that, when the said plates are all combined as shown in Fig. 1, the surfaces thereof will be absolutely flush and will present a perfectly flat and unbroken surface excepting for the necessary openings through which or in which the feed-dogs, needles and thread-drawing blade operate.

The feed-slots of the throat-plate are indicated by 11, it being understood that said slots are extraordinarily long for the purpose of accommodating feed-dogs which must be extended a considerable distance in front of the opening 12, through which the

thread-drawing blade reciprocates, this being for the purpose of enabling the work to be firmly engaged by the feed-dogs in advance of the action of the blade upon the work. It will be understood, of course, that the feed of the work is in the direction of the arrow shown in Fig. 1. Needle-slots 13 are extended obliquely of the central bar 14 of the throat-plate in rear of the blade-opening 12, said slots being elongated to permit of the vibratory action of the needles and the descent of the latter in different vertical planes.

In Fig. 3, it will be seen that the ledger-blade is composed of the forward thickened part 15, extended into the thinner part 16, thus providing a transverse shoulder 17, which engages a shoulder 18, formed at the rear end of the opening 12 in the throat-plate, the coöperation of these two shoulders effectively locating the ledger-blade in position in the throat-plate for proper co-operative action with the cutting-blade common to thread-drawing machines. The thin portion 16 of the blade rests within a groove in the throat-plate in rear of the opening 12, as shown in Fig. 4 by the difference in shading of the parts, whereby the surface of the blade is flush with the surface of the throat-plate and presents no obstruction to the work in passing over the work-plate. The ledger-blade is held in the central bar 14 of the throat-plate by means of a screw 19, the head of which rests within the countersink 20, at one end of the blade, while the shank of the screw extends through the aperture 21, the blade thus being held securely and firmly in position for operation. The opposite end of the blade is beveled from top to bottom as at 22, thus providing a cutting-edge 23.

From the construction just described, it will be seen that the ledger-blade can be quickly removed, by removing the screw 19, and its cutting-edge sharpened; and that, when the thickened portion 15 of the blade has been completely used up from sharpening and wear, a new blade can be substituted and the old one thrown away without destroying or putting out of use any other part of the work-plate. It will also be understood that the size of the opening 12 is of no great importance except in that it must be sufficiently large to permit the passage of the thread-drawing blade and that, in consequence, the ledger-blade can be used until its thicker portion 15 is practically gone.

It is important in thread-drawing machines that the cutting-edge 23 of the ledger-blade shall be as close to the top surface of the throat-plate as possible and that the coöperative action of the ledger-blade with the cutting-blade shall be as close to the top surface of the throat-plate as possible; it being understood, however, that the arrangement of the ledger-blade and the coöperative action of the said blade with the cutting-blade must be consistent with strength in the central bar 14 of the throat-plate. By using the proper material for the throat-plate, however, the bar 14 can be cut away, as at 24, to substantially a mere web. This permits the cutting-blade to operate so close to the surface of the throat-plate that the threads deflected by the thread-drawing blade will be severed practically at the bottom surface of the work; and it will be understood, of course, that, in the drawings, the various parts are much enlarged in order to fully disclose and clearly portray my invention. The recess 24, in the bottom of the bar 14, is made sufficiently long to permit the free sweep or action of the cutting-blade, whether the latter be caused to rotate, oscillate, or longitudinally reciprocate. The lugs 25, on the bottom of the throat-plate, form recesses in which the bobbin-case-detaining projections enter and the thickened portion 26 of the bar 14, through which the needles operate, is effective in helping to bow the needle-loops for engagement by the nose of the loopers.

From the foregoing description it will be readily seen that I have provided a work-plate which, as a whole, can be adapted to practically any form of machine with little or no change to the latter; also that I have provided a throat-plate which can be quickly removed from a work-plate without the use of tools and by merely sliding the holding-plates 5 from coöperative engagement with the ends of the throat-plate; also that I have provided a ledger-blade for cutters and trimmers, which can be quickly removed from the throat-plate and reset in the latter; and also that the trimming mechanism for functional purposes is approached as close to the work as is consistent with the support of the latter and the structure of the throat-plate. Other advantages of the invention and the mode of operation of the latter will be so obvious from the foregoing description that further statements here are deemed unnecessary.

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

1. In combination with a work-plate, a throat-plate countersunk in said work plate, so that all surfaces are flush, and bodily slidable means carried by one of the plates at opposite points thereof and overlapping the other of the plates, whereby the two plates are securely held in coöperative relation.

2. In combination with a work-plate having a longitudinal slot therein, a throat-plate set in said slot with its top surface flush with the top surface of the work-plate,

said throat-plate being provided with a groove at its opposite ends therein, grooves in the work-plate formed in continuity with the grooves in the throat-plate, holding-plates adapted to slide in the said grooves whereby to hold the throat-plate in position in the work-plate.

3. A throat-plate having a slot therein terminating in a groove in the upper surface of the plate, a blade having a thin portion at rest in the groove and a thick portion suspended in the slot, and means for securing the blade in position in the throat-plate.

4. A throat-plate having a longitudinal slot therein, a blade secured in said slot, and said plate having a recess in its bottom surface extending from in front of said slot to a point in rear thereof, the bottom wall of the recess being flush with the bottom surface of said blade.

5. A work-plate having a throat-plate applied thereto, movable means carried by the work-plate at opposite ends of the throat-plate and coöperating with the latter to hold it in position, cover-plates carried by the work-plate and arranged at opposite sides of the throat-plate and adapted to slide toward and from the latter for coöperation with the sides thereof, all said plates and the movable means having their upper surfaces flush, so as to present a smooth surface over which to slide the work.

6. A throat-plate having parallel slots, a bar separating said slots, said bar having a slot therein, a blade set in said slot, and said bar also having in rear of said blade a plurality of apertures.

7. In combination, a work-plate, a throat-plate carried by the work-plate, said throat-plate having at opposite points a shallow dovetailed groove, and said work-plate having therein shallow dovetailed grooves formed in continuity with the grooves of the throat-plate, and slide plates coöperating with the walls of said grooves and adapted to slide bodily therein, whereby when the slide-plates are in place the throat-plate is firmly secured to the work-plate and may be removed from the latter by withdrawing the slide-plates from engagement with the throat-plate.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN P. WEIS.

Witnesses:
EDWARD L. RUSSELL,
HARVEY W. RUSSELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."