

W. ZABEL.
BLINDSTITCH SEWING MACHINE.
APPLICATION FILED APR. 30, 1910.

1,031,767.

Patented July 9, 1912.

2 SHEETS—SHEET 1.

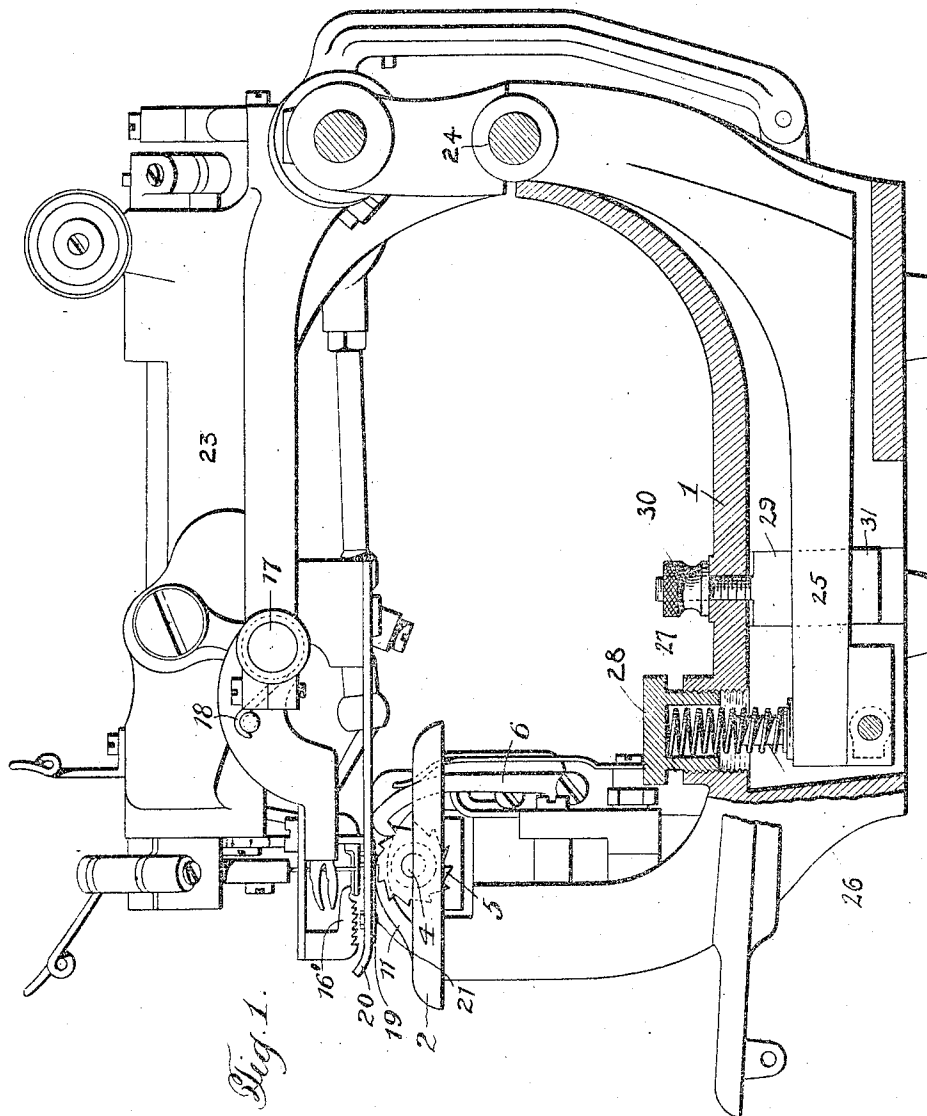


Fig. 1.

Witnesses:

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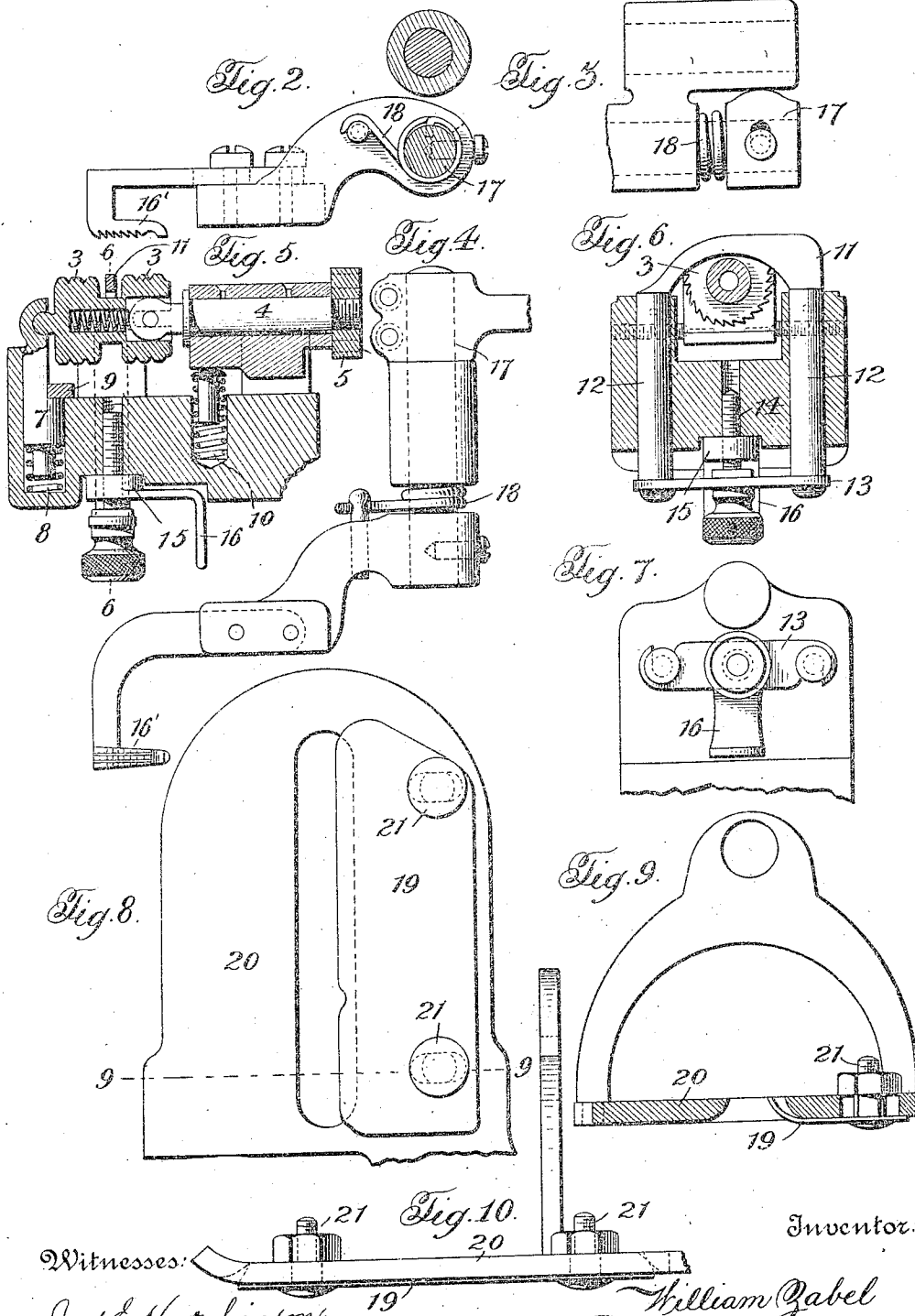
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2 SHEETS—SHEET 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM ZABEL, OF BEAVER FALLS, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WILLIAM H. HAYS, OF PITTSBURGH, PENNSYLVANIA.

BLINDSTITCH SEWING-MACHINE.

1,031,767.

Specification of Letters Patent.

Patented July 9, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM ZABEL, a citizen of the United States, residing at Beaver Falls, Pennsylvania, have invented a certain new and useful Improvement in Blindstitch Sewing-Machines, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view partly in section of my improved blind stitch sewing-machine. Fig. 2 is a detail view of the upper feed-dog. Fig. 3 is a rear elevational view of said feed-dog. Fig. 4 is a bottom plan view of the same. Fig. 5 is a vertical sectional view through the lower feed wheels and associate parts. Fig. 6 is a sectional view on line 6—6, Fig. 5. Fig. 7 is a bottom plan view illustrating means for locking and releasing the back-guide supporting-post. Fig. 8 is a bottom plan view of the presser-foot or plate. Fig. 9 is a sectional view through the same on line 9—9, Fig. 8. Fig. 10 is a side elevational view.

This invention relates to a new and useful improvement in blind stitch sewing-machines which are employed for padding collars and lapels of coats or blind stitching the bottoms of trousers, etc., the objects being to obtain an adjustment of the back-guide or bridge without altering the relative positions of the lower feed-rolls and the top plate or presser-foot; to make the final adjustment of said guide or bridge without the use of a screw-driver, and to lock said bridge securely in position; to arrange means cooperating with the top feed-dog to hold it yieldingly in operative position whereby it has a movement independent of the top plate or presser-foot in permitting seams or various thicknesses of goods to pass therebetween and the back-guide or bridge; to provide an adjustable wall for the slot in the top plate or presser-foot whereby the machine may be adjusted to sew on thin or thick goods.

With these objects in view, the invention consists in the construction, arrangement and combination of the several parts all as will hereinafter be more fully described and set forth in the claims.

In the drawings, 1 indicates the base cast-

ing of the machine from the front end of which rises a standard, upon which standard is arranged a work-table 2.

3 are the feed wheels driven by a universal joint from a shaft 4 on the end of which is a ratchet 5 cooperating with a feed-pawl 6. The outer feed-wheel 3 is provided with a spherical axle arranged in the upper end of a post 7. The post 7 is cylindrical in form, and is supported in its raised position by means of a spring 8. In manufacturing this post it is preferably turned in a lathe, after which the upper end is cut away so as to leave a shoulder and a flat face against which a bridge-piece 9 fits. This bridge-piece not only serves as a stop to limit the upward movement of the post by cooperating with the shoulder thereof, but by cooperating with the flat face the post is prevented from turning in its socket.

A spring 10 is arranged under the bearing in which the shaft 4 is mounted for the purpose of yieldingly holding the feed-wheels to their work, assisting the spring 8 in this function.

11 is the bridge-piece or back-guide over which the material to be blind stitched is fed, said bridge-piece being arranged between the feed-wheels 3 and serving to press the cloth up into the slot of the top-plate or presser-foot so as to form a ridge therein to enable the needle to enter and leave the goods on the same side in forming the stitch. This bridge-piece is carried by the upper ends of two posts 12 slidingly mounted in the overhanging head portion of the standard rising from the base casting. The lower ends of these posts are formed with reduced annuli, with which cooperate the oppositely hooked ends of a plate 13, which plate is pivotally mounted upon a threaded post 14 provided with a knurled head by which it may be turned and screwed into and out of the overhanging head casting carrying with it the said plate 13.

15 is a jam or lock-nut provided with a handle extension 16, said nut being arranged on the post 14 and cooperating with the under side of the overhanging head casting so as to lock the post 14 in adjusted positions.

If it is desired to adjust the bridge 11, the handle 16 is operated to loosen the jam-nut, whereupon the post 14 can be screwed up or down carrying with it the plate 13

and the posts 12. When the proper adjustment is made, the handle 16 is again manipulated and the jam-nut locks the parts in their adjusted positions.

Should it be desired to remove the bridge-piece and posts 12, the plate 13 is turned on its pivot so as to be disengaged from the lower ends of the posts, thus permitting the bridge-piece and its connected posts to be lifted out of the overhanging head.

16' is the upper feed-dog which operates over the bridge to feed the upper layer of goods; and heretofore, this upper feed-dog has been rigid, so that when a cross-seam or increased thicknesses passed over the bridge, the stitch-forming mechanism was raised, changing the relation between the needle and the back guide or bridge, which necessarily affected the blind stitch. According to my present improvement, this feed-dog is mounted on a supporting shaft 17 by means of a slot and pin connection; a coil spring 18 being employed to hold the feed-dog down to its work. By this construction, when a cross seam or increased thicknesses are encountered, the feed dog 16 can rise independently of the stitch-forming mechanism without disturbing the relation between the needle and the back guide or bridge. This yielding characteristic of the upper feed-dog is of special value where more than one thickness of goods passes the back guide, and where the stitch is to penetrate the outer layer of goods at all points. Where cross seams running diagonally across the goods are encountered, the diagonal seam will be first engaged by one feed-wheel which is depressed, then by the upper feed-dog which may be raised, and then by the other feed-wheel which may be depressed. Of course, if the presser-foot is raised, it will be independent of the feed-dog.

Another feature of my present invention is in the provision of an adjustable plate 19 arranged on the under side of the top-plate or presser-foot 20, into whose slot the bridge 11 ridges the goods to be blind stitched. The plate 20 is provided with slots through which the securing screws 21 of the plate 19 pass, whereby the inner curved edge of said plate which extends into the slot, may be adjusted toward and from the opposite wall of the slot, thus enabling the machine to blind stitch thin and thick cloth, according to the width of the slot. This thin plate 19, by being adjusted inwardly, can cause the goods to more firmly press against the bridge, and in this manner insure better blind stitching.

The presser foot 20 is mounted on the overhanging arm of the machine in the usual manner, by means of a clamping screw connection as shown in Fig. 1. The opening in the presser foot for this screw is, however, large enough to provide for lat-

eral adjustment of the presser foot, relative to the back guide or bridge.

The overhanging arm 23 upon which is mounted the upper feed dog 16 and presser foot 20 is pivotally connected to the base casting 1 at 24 and has an extension 25 within said casting with a pin 26 projecting at one end thereof. Surrounding this pin and bearing against the extension 25 and an adjustable cap 28 in the casting 1 is a compression spring 27. A stop member 29 is screwed into the casting 1, and held adjustably thereon by means of a nut 30. A projection 31 on the stop extends below the extension 25 to limit the downward movement of said member.

I am aware that minor changes in the construction, arrangement and combination of the several parts of my invention can be made and substituted for those herein shown and described without in the least departing from the nature and principle of the same.

What I claim is:

1. In a machine of the character described, the combination of a part having a circular recess, a cylindrical post fitting in said recess, the upper portion of said post having a flat side so as to provide a shoulder, a bridge piece extending over the recess and cooperating with said shoulder so as to limit the upward movement of said post and also to prevent said post from turning in the recess, a spring under the post, and a feed wheel supported by said post.

2. In a sewing machine, the combination of a back guide, a pivoted arm carrying a slotted presser foot into the slot of which said back guide extends, and an upper feed dog mounted on said pivoted arm and yielding independently of said presser foot.

3. In a sewing-machine, a pivoted arm carrying a slotted presser-foot, a back-guide for ridging the cloth into the slot of said presser-foot, and a yieldingly mounted upper feed-dog operating above said back guide and having a yielding movement independent of said presser-foot.

4. In a sewing-machine, a slotted presser-foot having a yielding movement, a stationary back-guide for ridging the cloth into the slot of said presser-foot, and an upper feed-dog having yielding movement independent of said presser-foot.

5. In a sewing-machine, a slotted presser-foot capable of yielding upwardly, a stationary back-guide for ridging the cloth into the slot of said presser-foot, an upper feed-dog having yielding movement independent of said presser-foot, and feed-wheels arranged to cooperate with the cloth on the under side of the presser-foot, said feed-wheels also having a yielding movement.

6. In a blind stitch sewing machine, a work table having parallel guiding openings therein, posts mounted in said openings and

connected together at their lower ends, means cooperating with the connection between the posts for simultaneously adjusting said posts in said openings, and a back guide connected to the upper ends of said posts.

7. In a blind stitch sewing machine, a work support, a back guide having posts connected thereto operating in openings in the work support, a plate connected to the posts and a screw threaded into the work support, and attached to the plate to be rotated therein only.

8. In a blind stitch sewing machine, a work support, a back guide having posts connected thereto operating in openings in the work support, a plate connected to the posts, a screw threaded into the work support, and attached to the plate to be rotated therein only, and means for locking the screw after adjustment.

9. In a sewing machine, a work table having parallel openings formed therein, posts mounted in said openings, a back guide supported by said posts at their upper ends, a connection between said posts at their lower ends, means for disconnecting said connection from said posts whereby said posts and their carried back guide may be removed.

10. In a sewing machine, a work support, a back guide mounted to project therefrom, a threaded post connected therewith adapted to adjust the back guide, and means fixedly connected to the threaded post allowing the

back guide to be disconnected from said threaded post without disturbing the post.

11. In a sewing machine, a slotted presser foot, a back guide for ridging the cloth up into the slot of said presser foot, and a plate secured to said presser foot and constituting one wall of said slot, the ends of said plate being independently adjustable.

12. In a sewing-machine, the combination of a back-guide and a slotted presser foot capable of lateral adjustment, and an adjustable plate constituting one wall of said slot.

13. In a sewing machine, a slotted presser foot, means whereby said presser foot may be laterally adjusted, a laterally adjustable plate having a curved inner edge constituting one wall of the slot in said presser foot, means for locking said plate in adjusted positions and a back guide for ridging the cloth up into the slot of the pressure foot.

14. In a blind stitch sewing machine, a work support, a back guide having posts connected thereto, operating in openings in the work support, and means for simultaneously moving said posts to adjust said back guide.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this twenty-sixth day of April, 1910.

WILLIAM ZABEL.

Witnesses:

A. B. ROE,

EARL R. LEYDA.