No. 743,971. PATENTED NOV. 10, 1903.

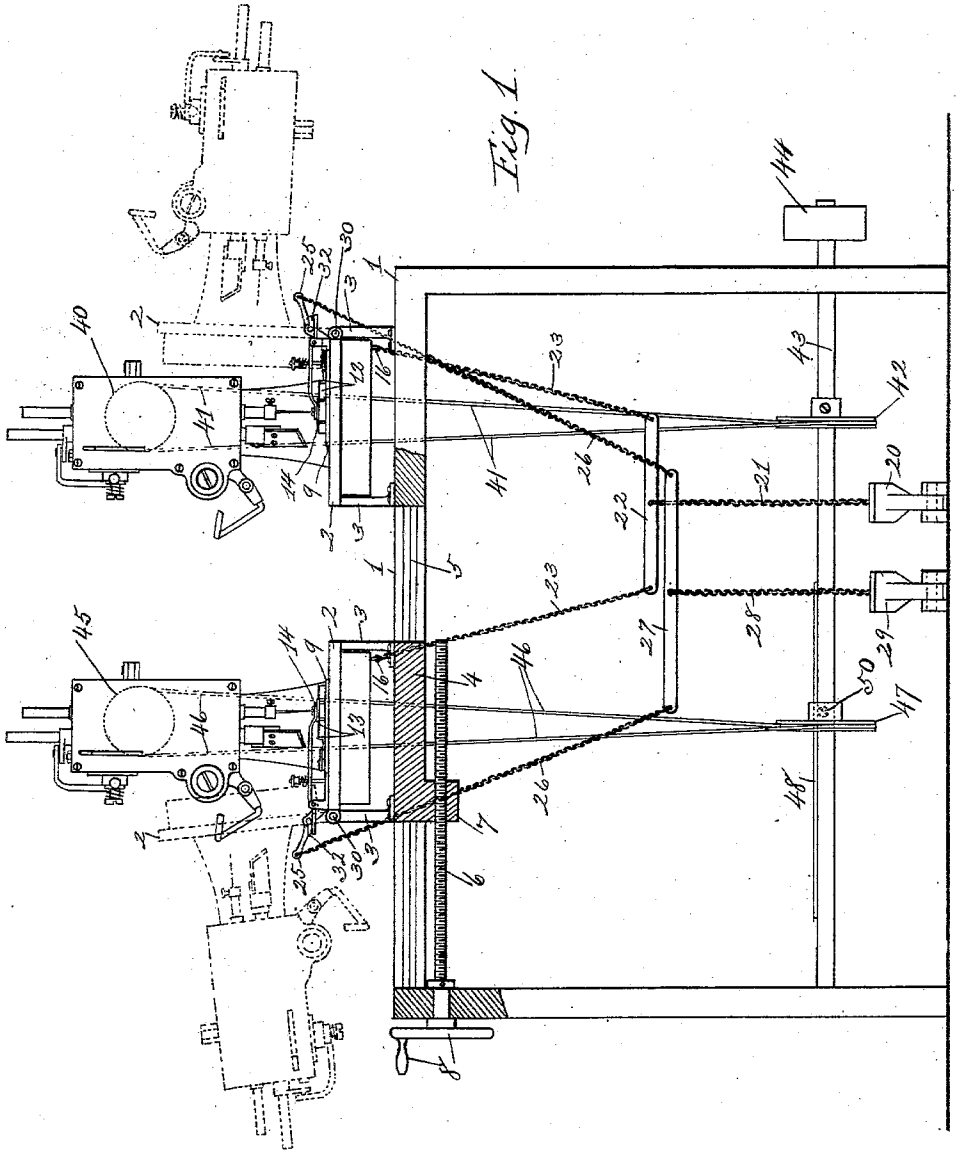
G. H. ARAKELIAN.

MULTIPLE BUTTONHOLE SEWING MACHINE.

APPLICATION FILED JUNE 12, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



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By Mosher & Curtis
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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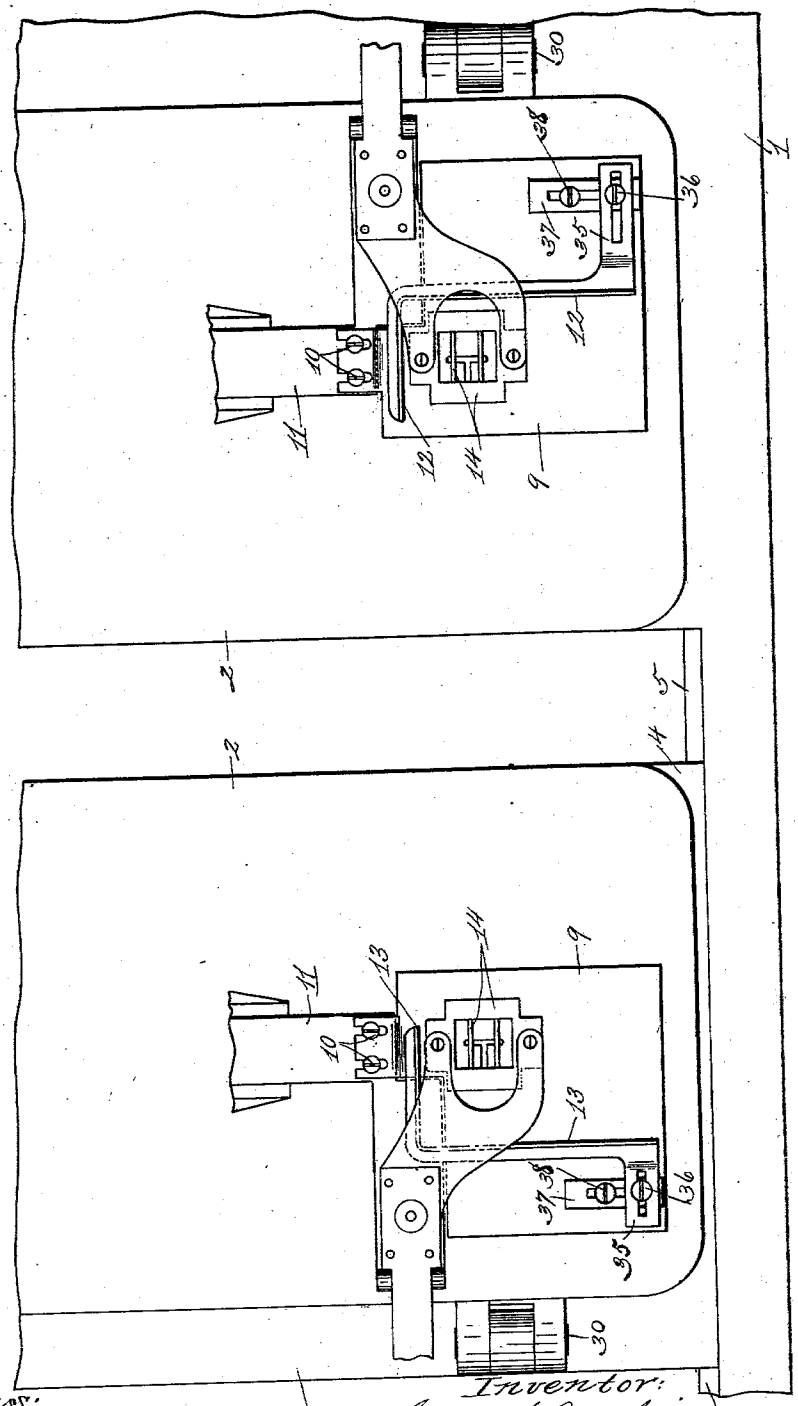


Fig. 2.

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No. 743,971. Patented November 10, 1903.

UNITED STATES PATENT OFFICE.

GEORGE H. ARAKELIAN, OF TROY, NEW YORK, ASSIGNOR TO CLUETT, PEABODY & CO., OF TROY, NEW YORK, A CORPORATION OF NEW YORK.

MULTIPLE BUTTONHOLE-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 743,971, dated November 10, 1903.

Application filed June 12, 1903. Serial No. 161,194. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. ARAKELIAN, a citizen of the United States, residing at Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Multiple Buttonhole-Sewing Machines, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in both figures.

Figure 1 of the drawings is a view in front elevation of the improved multiple buttonhole-sewing machine with the bed partly broken away and shown in section. Fig. 2 is a top plan view of the same, partly broken away, showing in plan the front ends of the bases of the sewing-machines and the work guides and clamps.

The principal object of this invention is to utilize for simultaneous operation upon different parts of the same article two sets of buttonhole-sewing mechanisms each complete and operative in itself to make a buttonhole, whereby machines of well-known types can be utilized without reconstruction of their stitch-forming and buttonhole-cutting mechanisms, and more particularly to adapt such machines for simultaneous operation upon the opposite ends of a cuff by arranging them in proper relation to each other and providing them with corner-guides opening one toward the other and both toward the front of the machine adapted to receive and guide the inner side edge and opposite end edges of the cuff, whereby buttonholes can be formed therein at definite distances from said edges, respectively.

Other objects of the invention will appear in connection with the following description.

This invention contemplates no change in the stitch-forming mechanism, cutting mechanism, operating machanism, and starting and stopping mechanisms, all of which are of the usual type in my improved machine.

For a more complete understanding of this invention reference may be had to the patent granted May 15, 1900, to J. T. Hogan, No. 649,870, which shows and describes one form of such mechanism which may be employed in my improved machine.

In carrying out my invention in its preferred form two sets of buttonhole-sewing mechanisms—each, for example, like that shown in said patent—are arranged side by side upon a bed or table 1, the base 2 of each of said machines or sets of mechanisms being supported upon brackets or standards 3, erected from the bed. The standards 3 which support one of said machines are preferably fixed upon the bed proper, which is stationary, while the standards which support the other of said machines, as the machine shown at the left of Fig. 1, are fixed upon a movable section 4 of the bed movable along slideways 5 toward and from the machine shown at the right in said figure. The two machines thus mounted may be located at any desired distance apart by means of the screw 6, rotatively mounted in the stationary portion of the bed and engageable with the nut 7 on the sliding section of the bed, said screw being adapted to be operated by a hand-wheel 8. Each of the machines thus mounted is provided with a work-plate 9, secured by screws 10 to the usual operating-plate 11, to which movements are automatically imparted to cause the work held upon the work-plate to be presented to the needle in such successive positions that a series of zigzag stitches will be inserted along the opposite sides of the buttonhole-line, as described and shown in said patent. Each of these work-plates is provided with a corner-guide for the work, both of said guides opening toward the front of the machine and each opening toward the other—that is, the guide 12 on the right-hand machine opens toward the left, while the guide 13 on the left-hand machine opens toward the right. These guides are thus complementary each to the other and together adapted to receive and guide the opposite ends of the same cuff by engaging the inner side edge and the respec-

tive end edges thereof, whereby the buttonholes are formed at different distances from said edges, respectively. The work is held securely in place upon the work-plate in the position determined by the corner-guide by means of the work-clamp 14, which can be raised by means of the cam 32, operated by the lever 25 in the usual manner. The corner-guides may be constructed and mounted in any known manner, it being necessary in buttonholing cuffs only that they should be arranged to engage the inner side edge and opposite end edges of the cuff to properly locate the same upon the work-plates until the clamps are brought into engagement therewith preliminary to the stitching operation. I have shown the corner-guide made in a single angular piece, one member thereof being adapted to engage the inner side edge of the cuff and the other member adapted to engage the end edge thereof at the neighboring corner. Each of the corner-guides shown is provided with a slotted shank 35, secured by a screw 36 inserted through its slot into the slotted plate 37, secured by screw 38 inserted through its slot to the work-plate 9, whereby the corner-guide is rendered universally adjustable upon the work-plate for the purpose of regulating the distance of the buttonholes from the respective edges of the cuff.

By moving the movable section 4 of the bed in one direction or the other by means of the screw 10 the distance between the two buttonholing mechanisms can be varied and the corner-guides thereof adapted to receive cuffs of different sizes. The space between the two buttonholing mechanisms is wholly unobstructed, so that they can be brought so closely together that their bases will engage each other, permitting the greatest possible range of adjustment for different sizes.

As a means for simultaneously starting the operation of both buttonholing mechanisms I provide a treadle 20, connected by a link connection 21 with an intermediate portion of the cross-bar 22, the opposite ends of said cross-bar being connected by link connections 23 with the respective starting-levers 16 of the two machines, which operate, as shown in said patent, to start the machines, the connections being such that depression of the treadle will operate both of said starting-levers in the various positions of adjustment of the two machines. In like manner the respective work-clamp-operating levers 25 of the two machines are connected by link connections 26 with the opposite ends of cross-bar 27, an intermediate portion of which is connected by link connection 28 with a treadle 29, whereby said clamps can be simultaneously operated. The table is cut away where necessary to permit the passage therethrough of the chains 23 and 26.

In the use of buttonholing mechanisms it is necessary to frequently oil the various working parts, many of which are exposed on the under side of the base 2, to facilitate access to which I provide each of said bases with a hinge connection at 30 along its outer side with the supporting standards or brackets 3 on that side, whereby said bases and the parts mounted thereon are adapted to be swung outwardly away from each other, as indicated by dotted lines in Fig. 1, without interference with each other in any position of adjustment of the two machines, whereby the parts mounted on the under side of the bases can be exposed for oiling or other purposes without interfering with the adjustment of the machines.

Power may be transmitted to the two sets of buttonhole-sewing mechanisms in any known manner. In the preferred construction shown in the drawings the belt-pulley 40 on the stationary machine is connected by belt 41 with a grooved pulley 42, fixed upon the shaft 43, to which power is transmitted by a belt (not shown) applied to the pulley 44, fixed thereon. In like manner the belt-pulley 45 of the adjustable machine is connected by belt 46 with a grooved pulley 47, mounted upon the shaft 43 to slide longitudinally thereof and connected with said shaft by the feather 48, whereby said pulley is caused to partake of the rotary movement of the shaft. The shaft 43 is parallel with the slideways 5 and parallel with the line of movement of the adjustable machine, so that the position of the pulley 47 can be adapted by sliding movement thereof upon said shaft and the feather 48 to the adjusted position of the machine mounted upon the movable section 4 of the bed.

If desired, the sliding pulley 47 can be locked in adjusted position by means of a set-screw, (indicated by dotted lines 50.)

By connecting the clamp-operating mechanism of both machines with a common treadle or foot-lever by means of flexible connections, such as the chains shown and described, I provide for the simultaneous operation of both clamping mechanisms, while permitting either clamp to be operated at will independently of the other in the ordinary or usual manner. In like manner by connecting the starting-levers of both machines with a common treadle or foot-lever by means of flexible or chain connections I provide for simultaneously starting the operation of both machines, while permitting either machine to be started independently of the other, to accomplish which the operator simply reaches beneath the table and pulls upon the chain connected directly with the starting-lever of the machine which he desires to operate independently of the other.

I am aware that corner-guides for a square cuff have been proposed for use on a single buttonhole-machine. My improvement contemplates the use of two similar machines placed side by side, each having a corner-guide complementary to the guide on the other, the general purpose being to stitch simultaneously a hole at each end of the cuff by means of known buttonhole-machines of

light construction. I am also aware that it has been proposed to place two machines on a base, both of which were hinged at the side and movable one toward the other lengthwise on said base, the needles and their connected devices being carried on the proximate ends of the machines. My improvement contemplates that two similar machines be arranged side by side and reversely hinged at their ends to carry the machines directly away from each other when turned on said hinges.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a machine of the class described, and in combination, a bed; two independent sets of buttonhole-sewing mechanisms mounted upon said bed, each complete and operative in itself to make a buttonhole, each set having a movable work-plate, a clamp-plate and a corner-guide, the corner-guide of each set opening toward and being complementary to the corner-guide of the other set, said guides being provided with means by which they are adapted to receive a cuff therebetween and each engage the same on two adjacent sides, the clamp-plates being coöperative to secure the cuff in position relatively to the guides; and common means for simultaneously starting both sets of sewing mechanisms, substantially as described.

2. In a machine of the class described, and in combination, a bed; two independent sets of buttonhole-sewing mechanisms mounted upon said bed, each complete and operative in itself to make a buttonhole, each set having a movable work-plate, a clamp-plate and a corner-guide, the corner-guide of each set opening toward and being complementary to the corner-guide of the other set, said guides being provided with means by which they are adapted to receive a cuff therebetween and each engage the same on two adjacent sides, the clamp-plates being coöperative to secure the cuff in position relatively to the guides; and common means for simultaneously starting both sets of sewing mechanisms, and means for adjustably moving one of said sets of sewing mechanisms toward and from the other, substantially as described.

3. In a machine of the class described, and in combination, a bed; two independent sets of buttonhole-sewing mechanisms mounted upon said bed, each complete and operative in itself to make a buttonhole, each set having a movable work-plate, a clamp-plate and a corner-guide, the corner-guide of each set opening toward and being complementary to the corner-guide of the other set, said guides being provided with means by which they are adapted to receive a cuff therebetween and each engage the same on two adjacent sides; means for raising the clamp-plates in opposite directions whereby they recede from each other; and common means for simultaneously starting both sets of sewing mechanisms, substantially as described.

4. In a machine of the class described, and in combination, a bed; two independent sets of buttonhole-sewing mechanisms mounted upon said bed, each complete and operative in itself to make a buttonhole, each set having a movable work-plate, a clamp-plate and a corner-guide, the corner-guide of each set opening toward and being complementary to the corner-guide of the other set, said guides being provided with means by which they are adapted to receive a cuff therebetween and each engage the same on two adjacent sides; and means for simultaneously starting both sets of sewing mechanisms, comprising a treadle a cross-bar connected to said treadle and connections between said cross-bar and the starting-levers of both sets of sewing mechanisms, substantially as described.

In testimony whereof I have hereunto set my hand this 26th day of May, 1903.

GEORGE H. ARAKELIAN.

Witnesses:

FRANK C. CURTIS,

E. M. O'REILLY.