

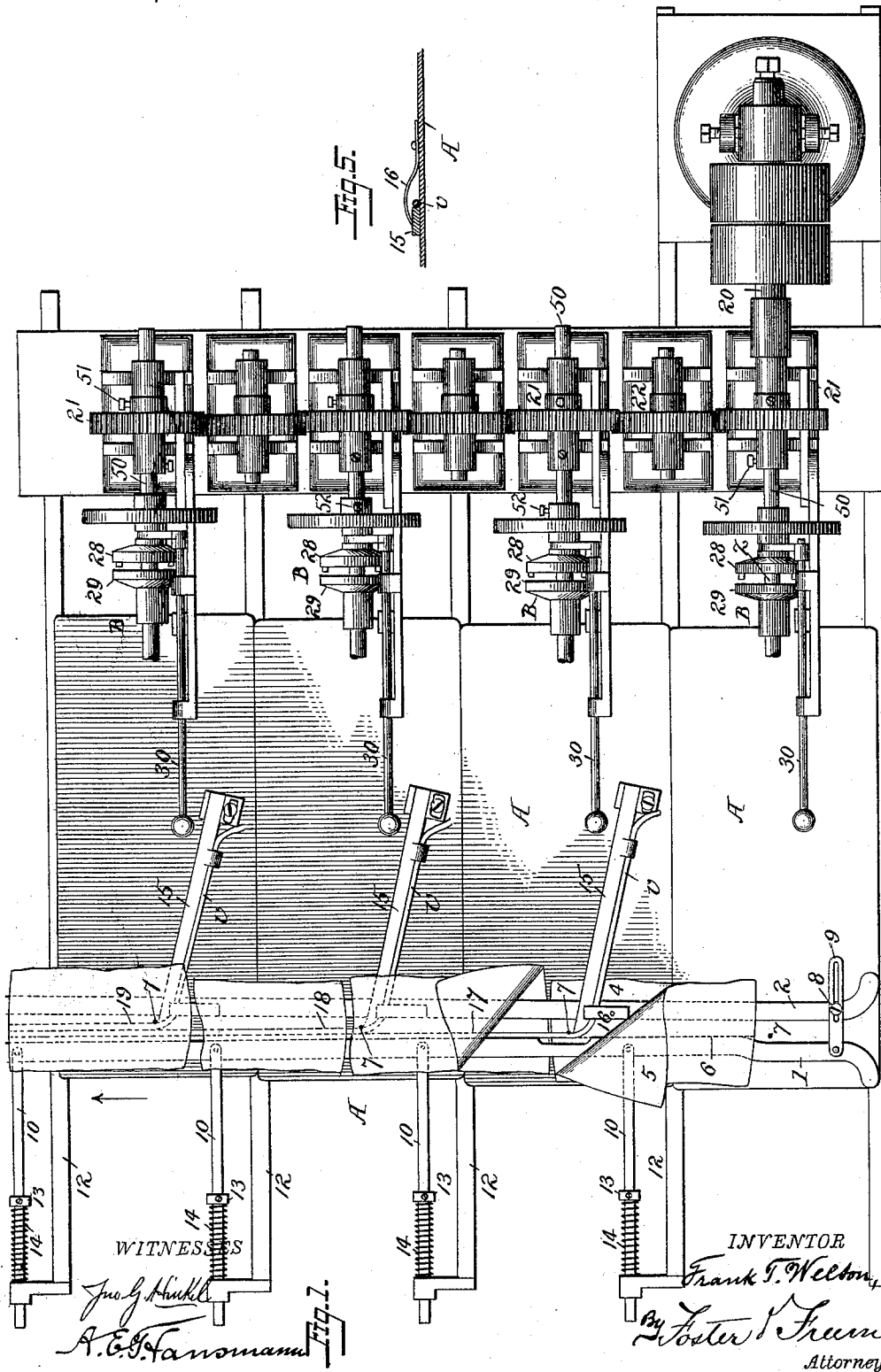
(No Model.)

3 Sheets—Sheet 1.

F. T. WELTON.
SEWING MACHINE.

No. 465,547.

Patented Dec. 22, 1891.



(No Model.)

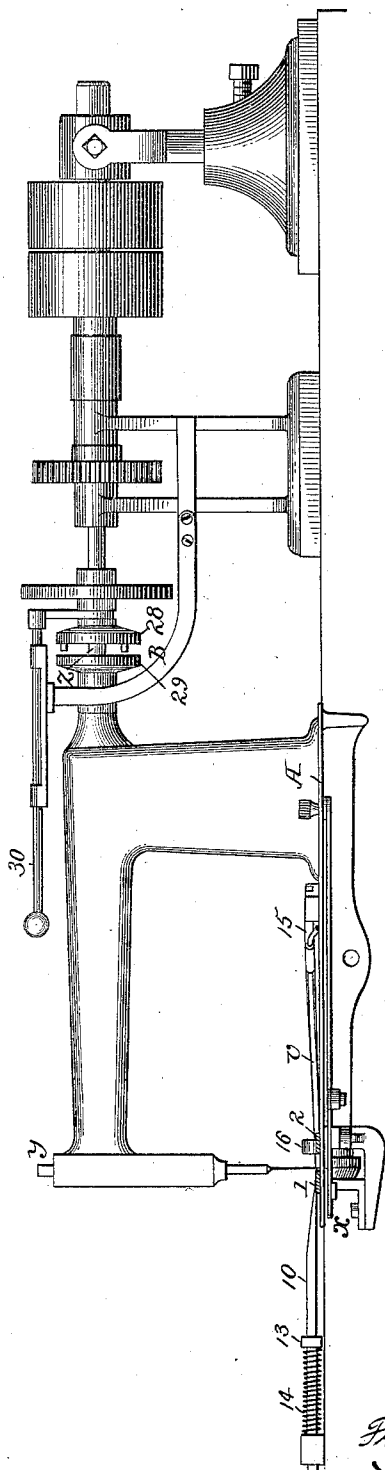
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Fig. 2.



WITNESSES

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Fig. 3.

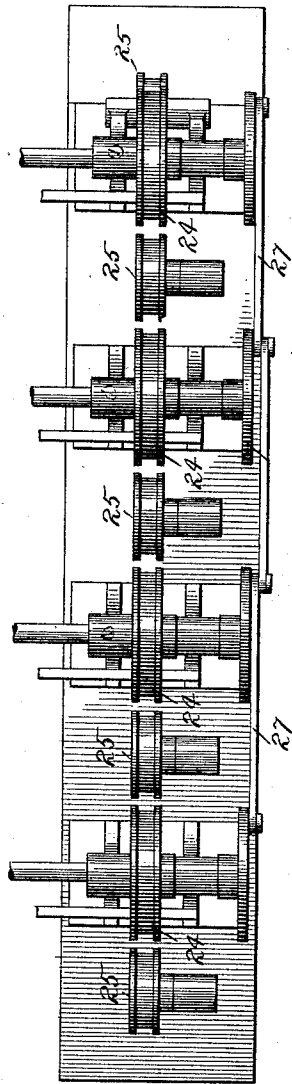
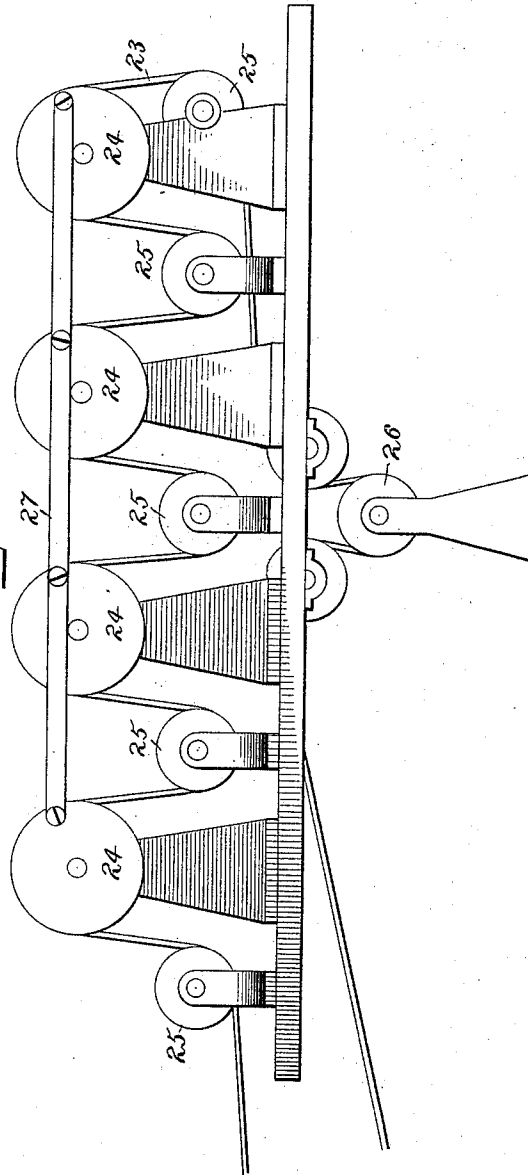


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRANK T. WELTON, OF BIRMINGHAM, CONNECTICUT, ASSIGNOR OF ONE-HALF TO LEOPOLD KRAUS, OF SAME PLACE.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 465,547, dated December 22, 1891.

Application filed October 25, 1890. Serial No. 369,330. (No model.)

To all whom it may concern:

Be it known that I, FRANK T. WELTON, a citizen of the United States, residing at Birmingham, New Haven county, State of Connecticut, have invented certain new and useful Improvements in Machines for Stitching Fabrics, of which the following is a specification.

In the manufacture of many articles of dress in which it is desirable to stitch between or upon fabrics a series of parallel cords or braids or form bone-pockets &c., it is common to stitch first one row in position and then another against and parallel thereto by separate operations, involving repeated manipulations of the article, with corresponding loss of time and increase of cost.

My invention consists in means whereby to avoid these objections, as fully set forth hereinafter, and as illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of sufficient of a stitching or cording machine to illustrate my improvement. Fig. 2 is a side sectional elevation. Fig. 3 is a plan illustrating a modified mode of gearing together the different driving-shafts. Fig. 4 is a side elevation of Fig. 3. Fig. 5 is an edge view of part of the guides.

The machine may be provided with a single continuous work-plate; but, as shown, the work-plate consists of the several base-plates or work-plates A of a series of sewing-machines arranged upon the same horizontal level and so adjusted that the needles of the several machines will be located and act successively upon different parallel lines transverse to the work-plates. With each needle co-operates the usual feed *x*, Fig. 2, which, together with the needle-bar *y*, is driven by a shaft *z*, these parts being constructed and connected to operate in any of the well-known methods common in ordinary sewing-machines and requiring no further description. Upon the work-plate are secured, preferably so as to be adjustable, two guides 1 2, in the shape of thin blades or plates, which extend transversely across the work plate or plates, being connected thereto only at the ends, so that one section 4 of the article to be stitched may pass freely beneath the guides, while the

overlying section 5 can pass freely above the guides, and the guide 1 is so set or adjusted that its inner edge 6, Fig. 1, will be in line with the first needle 7, so that as the article passes from said needle the seam sewed by the latter will bear against the inner edge of the guide 1, which thereby serves to direct the article properly in its course across the work-plate.

As shown, the guides 1 and 2 are provided with a slotted clamp 9 and set-screw 8, which holds them in their relative position, allowing guide 1 to be adjusted. To the guide 1 are also connected rods 10, supported at the outer ends by brackets 12 and having collars 13 secured adjustably and bearing upon springs 14, each collar being so set that its springs will act with just sufficient tension to secure the work being held against the guide 1 without any yielding of the latter. The guide 2 serves to prevent the overlying section from being folded in at the ends or coming together. The guide 2 is secured to guides 15 by spring-clamps 16, which guides 15, one for each needle, are firmly secured to the bed-plates A and act as supports for guide 2. The guides 15 are adjustable on the bed-plates A and each constructed so as to properly direct by its inner end the width of the row to be stitched, or, if cords or braid are to be used, to guide the same into position within the space between the sections 4 and 5 and against the seam previously formed. In order to prevent the material from catching upon the guide 15, each clamp 16 is connected to the guide 2 and extends over the guide 15 and over the cord carried thereby.

The various needle and feed operating mechanisms are connected together, so that each needle and each feed operates precisely in the same manner at the same time.

In the practical operation of this machine the section 4 of one article is placed beneath the guides 1 and 2, and the section 5 directly above it upon said guides of the first machine and then passed beneath the needle and fed by the feed, forming a line of stitches upon the line 6, Fig. 1, and as one of these articles passes from the action of the first machine a second article is placed upon the first machine and operated upon in like manner until finally a series of articles is traveling

across the bed-plate of the machines, arranged in the line of the guides in the direction of the arrow, Fig. 1. As the second needle is upon a different line parallel to the line 6 and in a position beyond the end of the first guide 15, it sews a second seam on the line 17 upon the inner side of the row already stitched, and the third needle, being farther within the line of the first, sews a third seam 18 at the inner side of the second row stitched, and the fourth needle, still farther from the line of the needle 7, sews a fourth seam 19 at the inner side of the third row, and so on, according to the number of pockets required and needles employed, each article finally leaving the machine with a series of pockets or cords arranged in a series of parallel rows formed by stitching the upper and lower sections of the material together.

When articles are formed with rows of a different width, the guides 15 are adjusted according to the width of the rows required.

While, as before described, the bed-plate may be made of a continuous piece and all the driving-shafts z connected to operate in a single machine specially constructed throughout for the purpose for which my machine is intended, I prefer to reduce the cost of manufacture by combining a series of ordinary sewing-machines, as illustrated in the drawings, each machine being complete in itself and all being secured together side by side and so adjusted that the first may project slightly beyond the second, the second beyond the third, and so on, as illustrated in Fig. 1, this adjustment being necessary to bring the needles into different parallel horizontal lines, as described. In such case the shafts z of the different machines should be so coupled together as to be driven from the main driving-shaft 20. This coupling may be effected in different ways by means of gears 21 upon the driving-shafts of the machines and intermediate gears 22, or, as shown in Figs. 3 and 4, by means of a traveling belt 23, passing over pulleys 24 on the different driving-shafts, and under intermediate deflecting and guide pulleys 25, and under a weighted take-up or tightening pulley 26, the pulleys 24 being connected by a connecting-rod 27 so as to secure the synchronous moving of the needles.

Inasmuch as it is sometimes desirable to omit one or more rows of a series—as, for instance, when the article is to be stitched with several parallel rows, then an intermediate space, and then another series of rows—I provide means whereby one or all the needles may be temporarily thrown out of operation. Any suitable shifting or detaching mechanism may be employed for this purpose. Thus each driving-shaft z may be in two sections adapted to be connected and detached by means of the sections 28 29 of a clutch B, the shifting section 28 by an ordinary shifting-bar 30, and the teeth of each clutch being so set as to engage only when the connected needle is in the same position as the needle of the other section of the machine.

The gears 21 are adjustable on their shafts 50 by splines and keys or by means of set-screws 51, thus permitting the different machines to be set forward or back to vary the distances between the rows of stitching. The clutches are also adjustable by set-screws 52, or otherwise, to accommodate the different positions of the machines.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. In a stitching-machine, a series of needles set upon different transverse lines, a corresponding series of feeding devices, mechanism for imparting simultaneous movement to the needles and feeding devices, a work-plate, and a single guide extending along the work-plate adjacent to the entire series of needles, substantially as described.

2. In a stitching-machine, a series of needles set upon different transverse lines, a corresponding series of feeding devices, mechanism for imparting simultaneous movement to the needles and feeding devices, a work-plate, and guides 1 and 2, and series of guides 15, substantially as described.

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

FRANK T. WELTON.

Witnesses:

E. D. F. SHELTON,
W. S. DOWNS.