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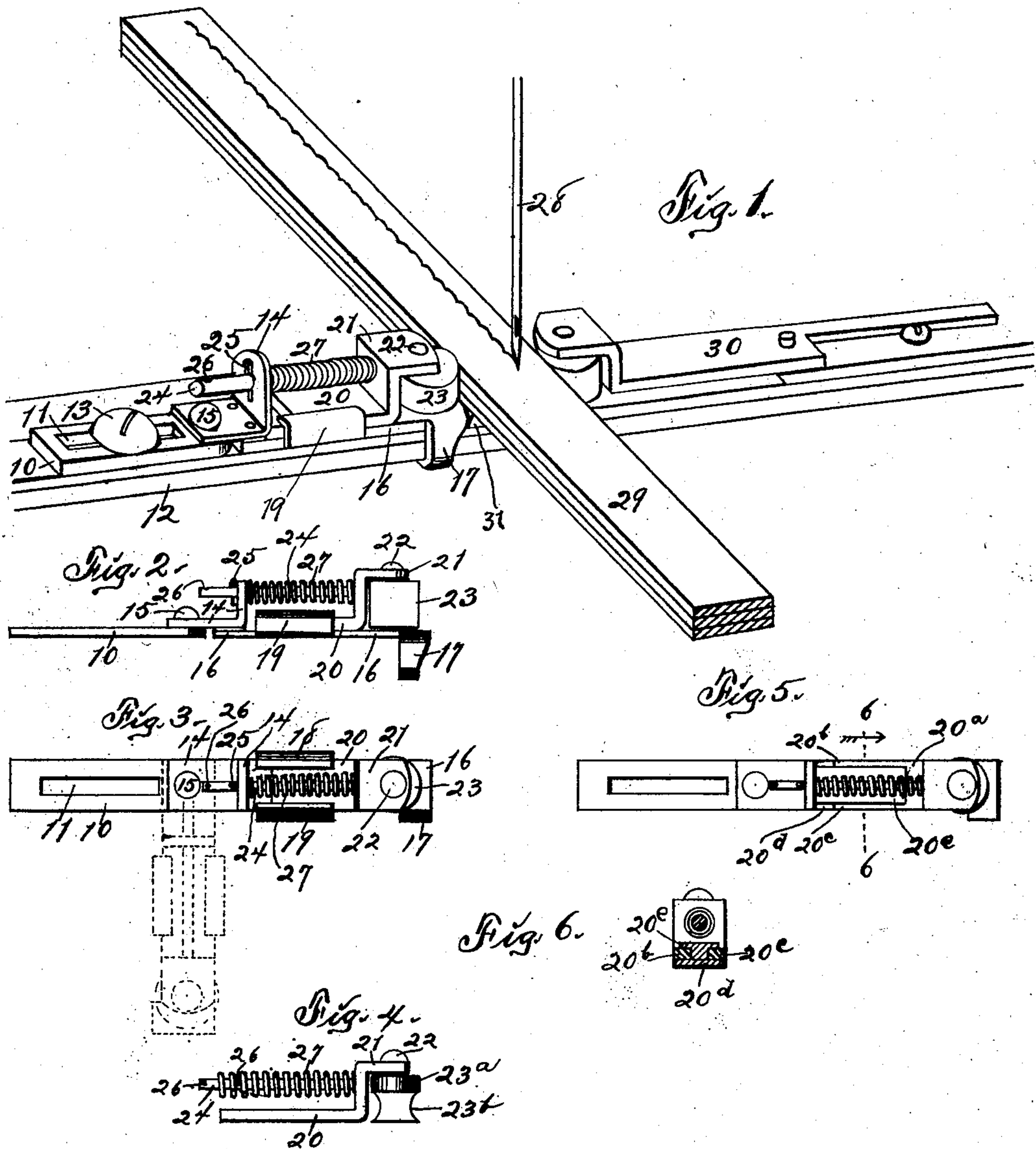
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ROLLER GUIDE FOR LEATHER STITCHING MACHINES.

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NO MODEL.



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UNITED STATES PATENT OFFICE.

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ROLLER-GUIDE FOR LEATHER-STITCHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 751,398, dated February 2, 1904.

Application filed March 4, 1903. Serial No. 146,109. (No model.)

To all whom it may concern:

Be it known that I, JUDSON HUGHES, a citizen of the United States of America, and a resident of Fremont, Dodge county, Nebraska, have invented a new and useful Roller-Guide for Leather-Stitching Machines, of which the following is a specification.

The object of this invention is to provide means for guiding a piece of work through a leather-stitching machine and in so doing hold said work yielding to the given path of travel.

My invention consists in the provision of a yielding-mounted guide arranged to engage and hold a piece of work in its passage through a leather-stitching machine, the guide yielding to variations of the width of the piece of work.

My invention consists, further, in the provision of a hinged guide arranged for mounting on the table of a leather-stitching machine and mounted yieldingly relative to the path of travel of a piece of work through said machine.

My invention consists, further, in the construction, arrangement, and combination of elements hereinafter set forth, pointed out in my claim, and illustrated by the accompanying drawings, in which—

Figure 1 is a perspective illustrating the application of my improved devices to the table of a leather-stitching machine and the relative location of such devices in respect of a piece of work traveling through said machine. Fig. 2 is a side elevation of my improved roller-guide detached from the machine. Fig. 3 is a plan of my improved roller-guide detached from the machine, the dotted lines indicating the open position of the guide. Fig. 4 is a side elevation of a modified form of guide detached from its supporting devices. Fig. 5 is a plan of a modified form of supporting device and a roller-guide mounted therein. Fig. 6 is a cross-section on the indicated line 6 6 of Fig. 5.

In the construction of the devices as illustrated in Figs. 1, 2, and 3 the numeral 10 designates a plate formed with a longitudinal slot

11 and arranged to be mounted upon a table 12 of a leather-stitching machine. The plate 10 is retained on the table 12 in position for longitudinal adjustment by means of a screw 13, traversing the slot 11 and seated in a screw-seat of the table. An angle-plate 14 is pivoted, by means of a rivet 15, to one end portion of the plate 10 and extends beyond the extremity of said plate. A guide-plate 16 is fixed at one end to the angle-plate 14 and extends along the table 12 a material distance. A hook 17 is formed on and extends downwardly from the front margin of the free end portion of the guide-plate 16 and is designed to overlap and engage the forward margin of the table 12 and limit and determine the rearward movement of the guide-plate relative to the table and also relative to the slotted plate 10. Ears or flanges 18 19 are formed on and extend upward and inward from opposite margins of the guide-plate 16 and provide slide-bearings thereon. A guide-bracket 20 is provided and has its body portion extended within the slide-bearings formed by the flanges or ears 18 19 on the guide-plate 16 in advance of the vertical portion of the angle-plate 14. An offset flange or ear 21 is formed on the forward end portion of the guide-bracket 20 parallel with and spaced apart from the upper surface of the free end portion of the guide-plate 16. The offset flange 21 of the guide-bracket 20 is apertured near its extremity for the reception of a pivotal pin 22, extending through said flange toward the free end portion of the guide-plate 16. A guide-roller 23 is mounted for revolution on the pin 22 and lies within the space between the lower surface of the offset flange 21 and the upper surface of the free end of the guide-plate 16 adjacent the hook 17. A pin 24 is fixed to the offset flange 21 and extends through the vertical portion of the angle-plate 14. By means of the pin 24 the guide-bracket 20 is connected loosely and arranged for rectilinear reciprocation relative to the angle-plate 14, and such movement of rectilinear reciprocation is limited in one direction by a key or cotter-pin 25, extended through one or another of apertures 26 in the

pin 24 at the rear of the vertical portion of the angle-plate, and the movement of reciprocation is limited in the opposite direction by an expansive coil-spring 27, mounted on the pin 24 between the flange 21 and said vertical portion of the angle-plate. By means of the coil-spring 27 impinging at its opposite ends against the flange 21 and angle-plate 14 the guide-bracket 20 tends to separate from the angle-plate, and the roller 23 is yieldingly held toward the path of travel of a piece of work through the machine. The needle 28 of the stitching-machine reciprocates vertically at a point somewhat in advance of and beyond the guide-roller 23, and a piece of work 29, such as a trace or tug made of laminated leather, is moved rearwardly across the table 12 beneath and in position to be penetrated by said needle.

There is already in use on some of the leather-stitching machines now upon the market a roller-guide 30, (illustrated in Fig. 1 of my drawings,) and the piece of work 29 travels with one edge in contact with the roller of said guide. It is the function of the roller-guide 30 to determine the distance between the right margin of the piece of work and the row of stitching made by the needle 28, and it is common practice in the use of such machines to hold the work in contact with the roller of said guide by hand. Provision heretofore has been made for duplicating the guide 30 at the left of the piece of work or providing a rigid guide arranged for longitudinal adjustment only at the left of the piece of work. Once set for operation upon a piece of work of a given width the rigid guide at the left holds the work against the roller of the guide 30 rigidly and tenaciously, but does not yield in any respect to irregularities in the width of the work being stitched. Consequently if the work at some point or points is of slightly less width than it is intended to be such work may swerve from the roller of the guide 30 and make an irregular line of stitching result from the operation of the needle 28, and if the work is of slightly greater width than it is designed to be it will bind and crowd in the space between the rollers and the guides and in some instances buckle or flex transversely and either destroy the neatness and regularity of the stitching, break the needle, or become detached from the machine. I have found it desirable to mount the roller-guide at the left of the work under the influence of yielding pressure devices, such as the spring 27, whereby the roller 23 may be held to the work yieldingly and give or retract under extraordinary widths of work and extend or project when the work is narrower than it is intended to be. In either instance the yielding or spring mounting of the roller-guide effects the function of holding the work snugly to the periphery of the roller of the

guide 30 without any tendency on the part of the work to crowd, buckle, or bend. When it is desired to turn the work end for end or to stitch across the end, the guide-plate 16 and devices supported thereby may be sprung forwardly into a position at right angles to the plate 10, as illustrated by dotted lines in Fig. 3 of my drawings, and in such position the roller 23 is detached from and swung out of the way of the piece of work 29 being operated upon. I have provided two apertures 26 in the outer end portion of the pin 24 in order that the cotter-pin 25 may be positioned in the inner aperture when it is desired to stitch a relatively wide piece of work in the machine and be positioned in the outer aperture when it is desired to stitch a relatively narrow piece of work in the machine. This provision is made for the reason that the free end portion of the guide-plate 16 may be limited in its forward movement toward the piece of work by engagement with a plate 31 now on the machine beneath the work, and at times it is desirable to project the roller 23 over said plate when stitching a very narrow piece of work. Adjustments for the treatment of extra wide pieces of work may be effected through the medium of the screw 13 and slot 11 in the plate 10, and ordinary irregularities or variations of width may be compensated for by the expansion and contraction of the spring 27. However, I have found it desirable to provide various lengths of springs 27—two, at least—to be mounted on the pin 24 under varying adjustments of the cotter-pin relative to the apertures 26.

Sometimes the leather-stitching machine is employed to stitch pieces of work having convex or rounded margins, and under such circumstances a roller is employed, such as is shown at 23^a in Fig. 4. The roller 23^a is formed with an annular groove 23^b in a portion of its periphery, which annular groove is concaved in cross-section and shaped and designed to engage the convex or rounded margin of a piece of work and hold said piece of work to its desired position on the machine. There is no other difference of construction illustrated in Fig. 4.

In Figs. 5 and 6 I have illustrated a guide-bracket 20^a, having its body portion forked to produce arms 20^b 20^c, which arms embrace a rib 20^d, formed on or fixed to and rising from the guide-plate 16. Flanges 20^e are formed on and project laterally from the upper portion of the rib 20^d and overlap the arms 20^b 20^c of the bracket 20^a. In this instance the rib 20^d and its flanges perform the same function that the ears 18 19 perform in the construction illustrated in Figs. 1, 2, and 3—viz., retain the guide-bracket to its seat on the guide-plate and at the same time provide for the rectilinear reciprocation of said guide-bracket. Otherwise the structure defined in

Figs. 5 and 6 is identical with that illustrated in Figs. 1, 2, and 3.

I claim as my invention—

5 A roller-guide for leather-stitching machines, comprising a supporting-plate 10 arranged for longitudinal adjustment, an angle-plate 14 pivoted by its horizontal member to the supporting-plate and apertured in its vertical member, a guide-plate 16 fixed at one
10 end of said angle-plate; a stop 17 on said guide-plate arranged to engage a table and limit oscillation of the guide-plate and angle-plate relative to the supporting-plate, flanges 18, 19
15 formed on and extending upward and inward from the side margin of said guide-plate, a guide-bracket 20 offset intermediate of its ends and having an end portion slidingly mounted on the guide-plate and confined by said flanges, the opposite end portion of the guide-bracket

spaced apart from the guide-plate and aper- 20
tured, a pin mounted in the aperture of the guide-bracket, a guide-roller mounted on said pin, a pin 24 fixed to the offset portion of the guide-bracket and extending through the aperture of the vertical member of the angle- 25
plate, a key adjustably mounted in one or another of transverse apertures in said pin 24 and an expansive coil-spring mounted on said pin 24 between the offset portion of the guide-
30 bracket and the vertical portion of the angle-plate.

Signed by me at Des Moines, Iowa, this 11th day of June, 1902.

JUDSON HUGHES.

Witnesses:

R. S. KIRKPATRICK,
S. C. SWEET.