

No. 656,370.

Patented Aug. 21, 1900.

W. N. PARKES.

WORK CLAMP FOR BUTTONHOLE SEWING MACHINES.

(Application filed Oct. 10, 1899.)

(No Model.)

Fig. 1.

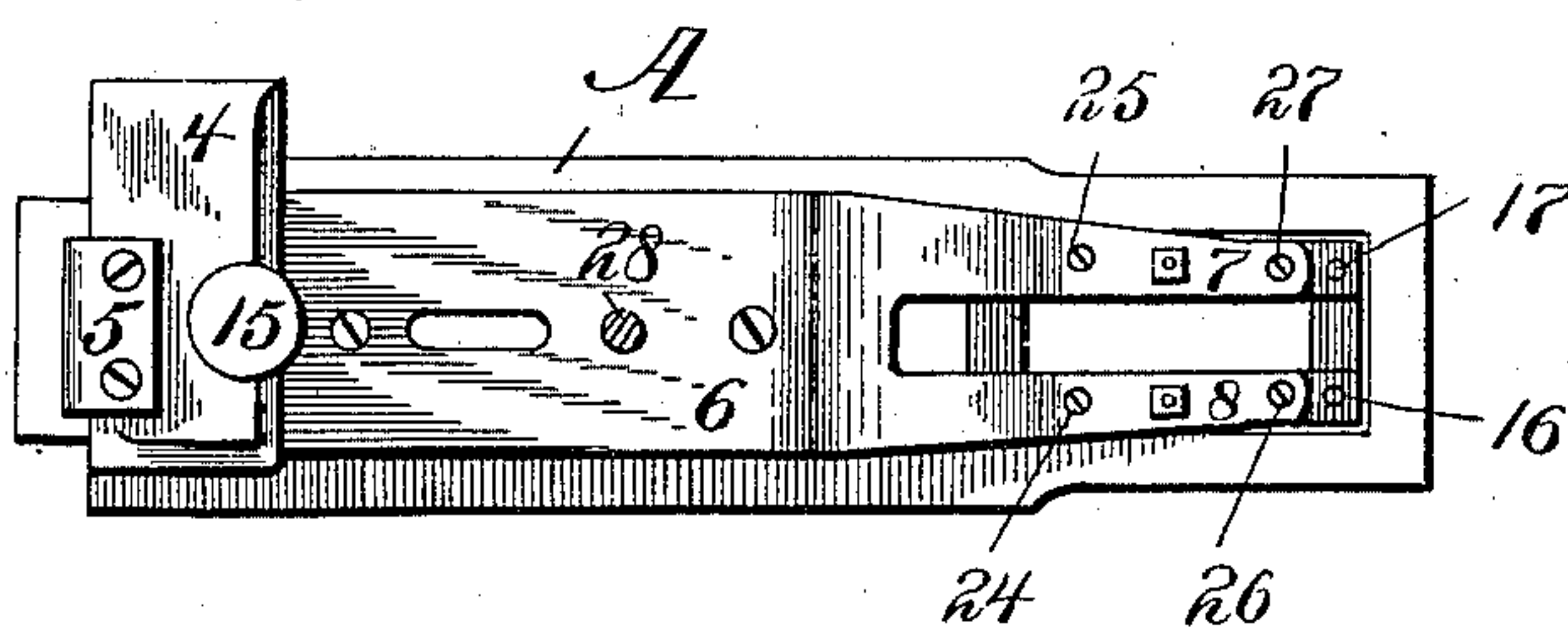


Fig. 2.

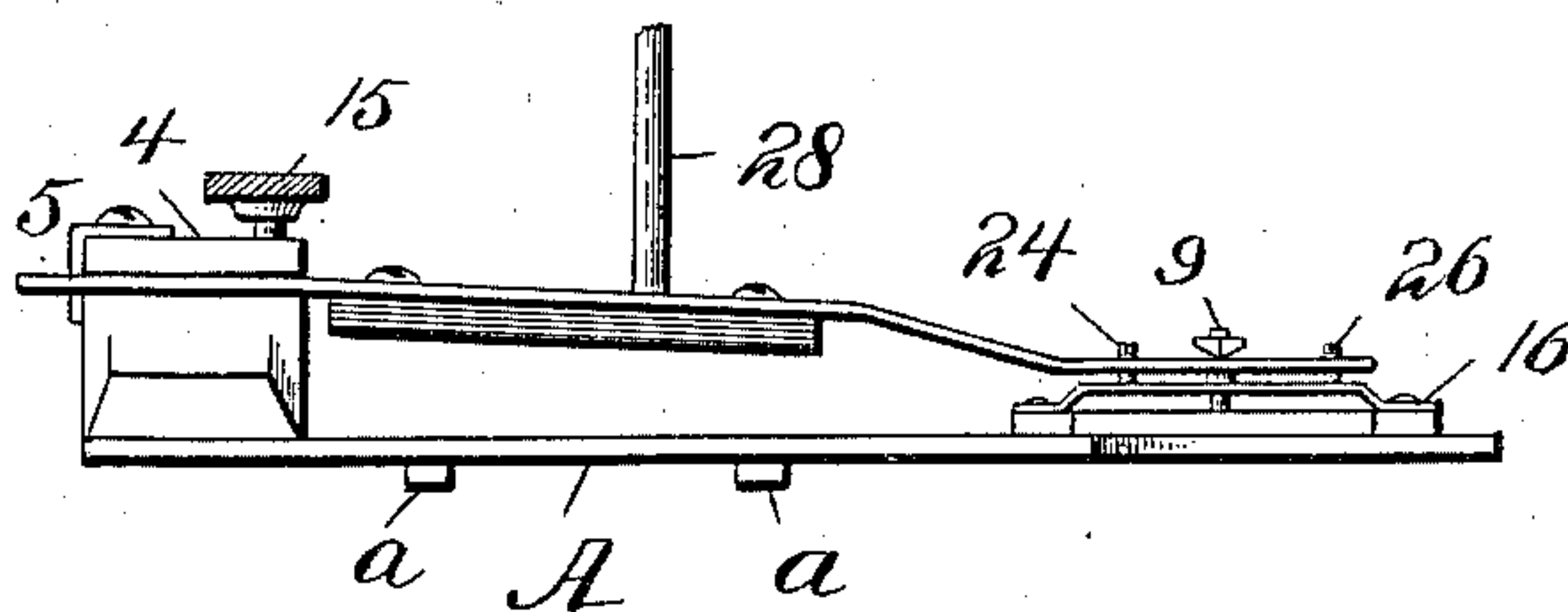


Fig. 3.

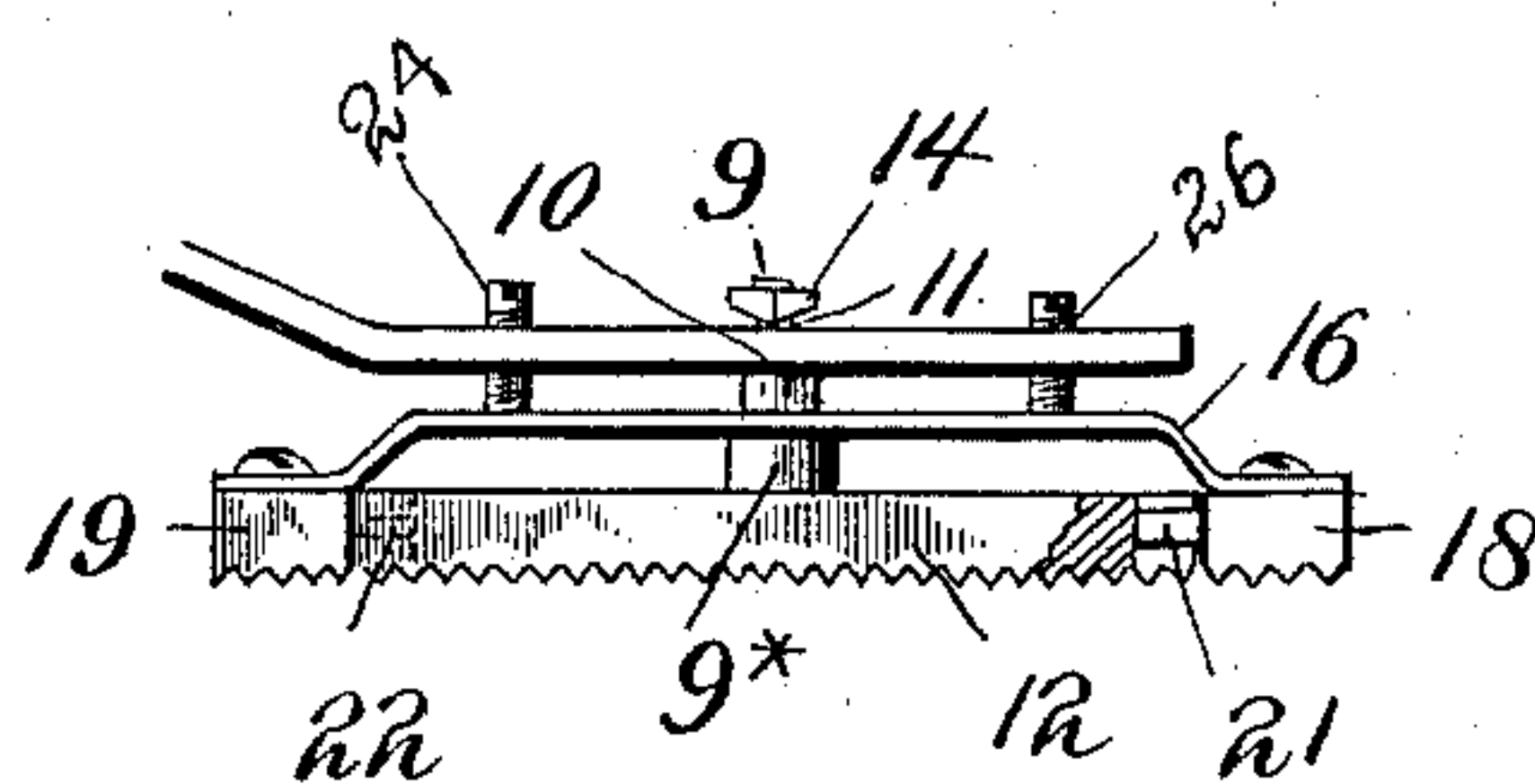


Fig. 4.

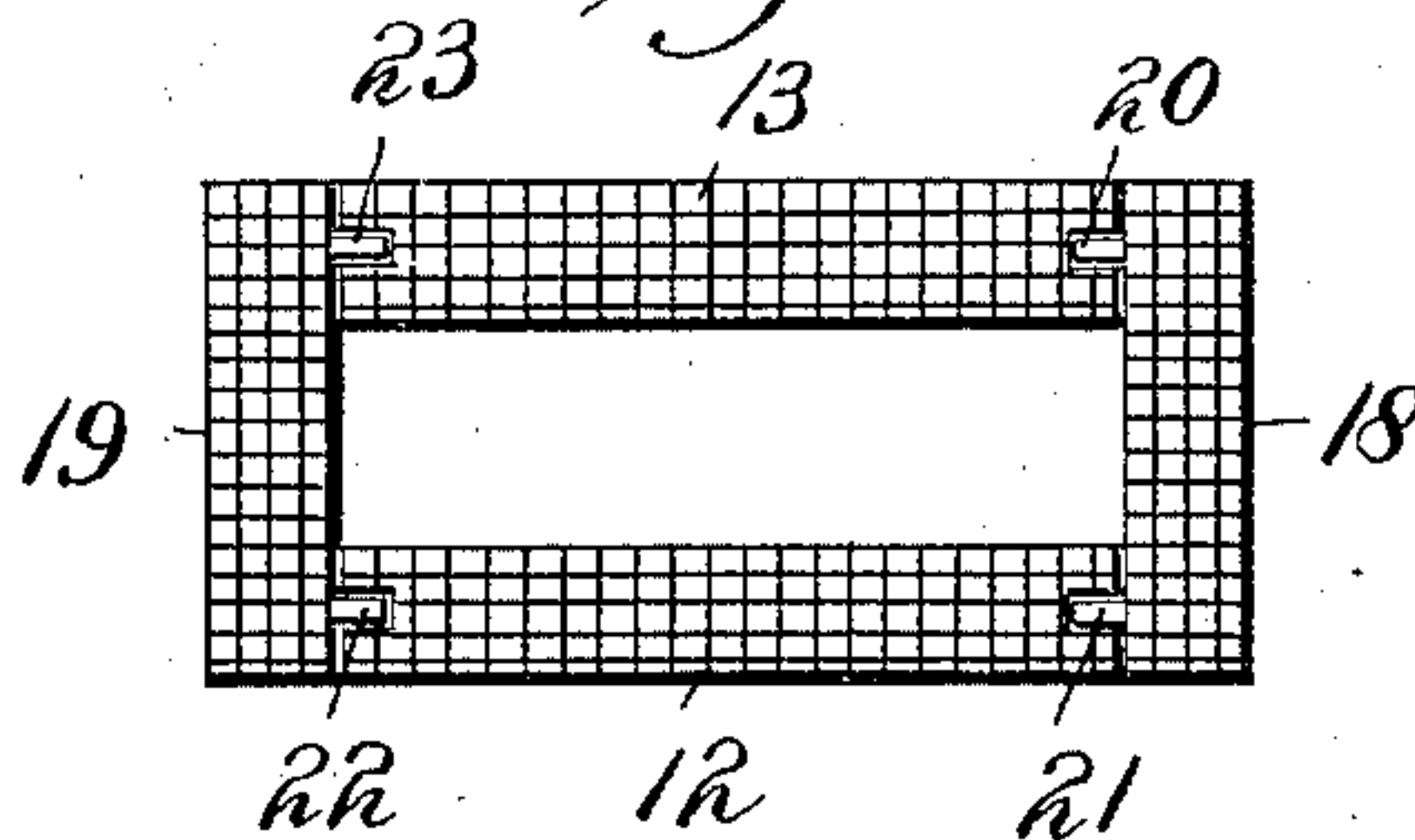
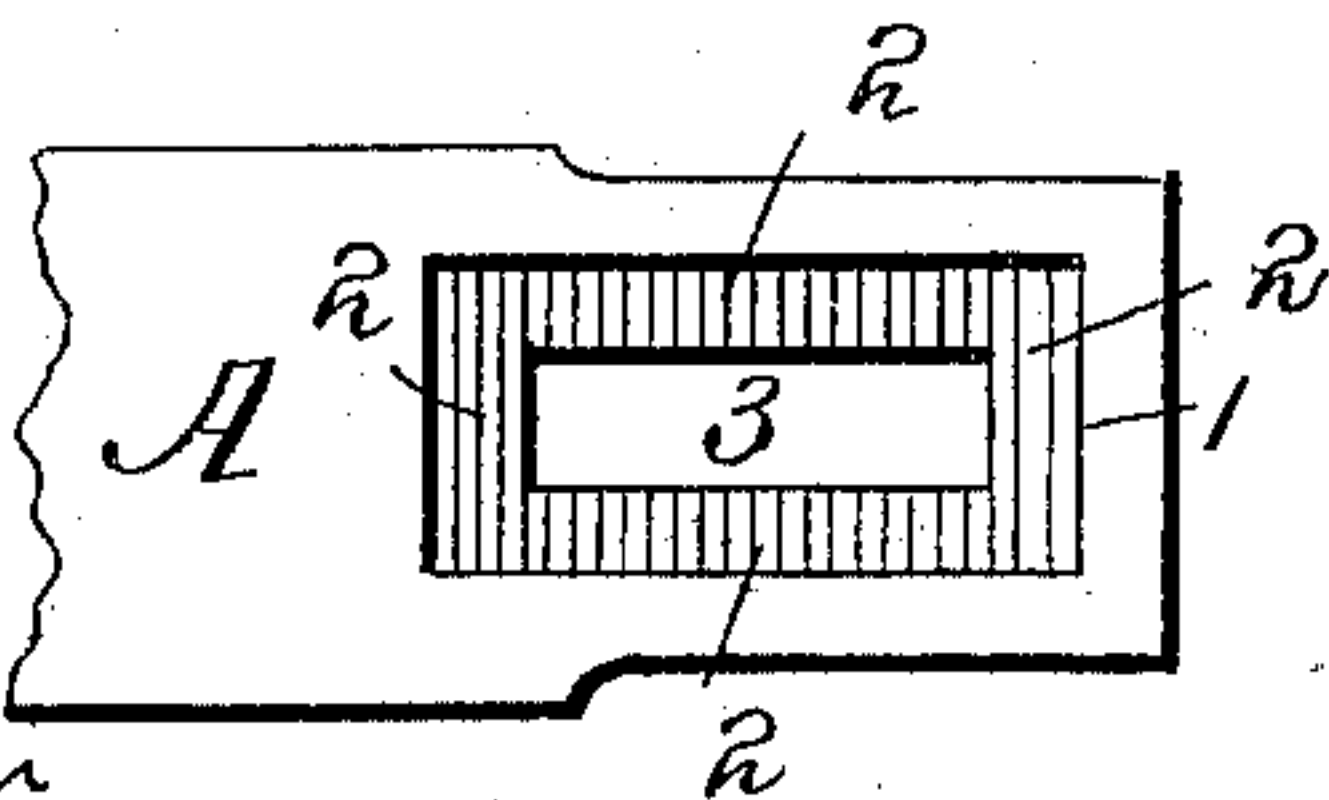


Fig. 5.

Witnesses:

J. B. McGirr.
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WORK-CLAMP FOR BUTTONHOLE-SEWING MACHINES.

SPECIFICATION forming part of Letters Patent No. 656,370, dated August 21, 1900.

Original application filed September 12, 1898, Serial No. 690,777. Divided and this application filed October 10, 1899. Serial No. 733,227. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. PARKES, a citizen of the United States of America, residing at New York, borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Work-Clamps for Buttonhole-Sewing Machines, of which the following is a specification.

10 This application is a division of a prior application, Serial No. 690,777, for a "Buttonhole-sewing machine," filed September 12, 1898.

15 The object of this invention is to provide a work-clamp which will yieldingly and firmly hold the work on all sides of the buttonhole; and it consists mainly of four shoes which are adapted to yieldingly engage the work, one at each side of the buttonhole and one at each end. These shoes are adapted to separately move vertically or rock laterally across a horizontal plane.

25 In the drawings, Figure 1 is a top view, and Fig. 2 a side view, of the work-clamp. Fig. 3 is a side view, on an enlarged scale, of the outer end of the upper member of the clamp, part broken away to disclose the connection between the end shoes and the side shoes. Fig. 4 is a face view, on an enlarged scale, of the presser-shoes; and Fig. 5 is top view of the outer end of the under member of the clamp.

30 Similar letters and numerals of reference designate corresponding parts throughout the several views of the drawings.

35 In the drawings the letter A designates a slide which forms the lower member of the work-clamp. In a machine in which the work-clamp has no lateral movement—as, for example, the one in the above-referred-to application—this slide is mounted in suitable bearings and reciprocated by a cam which operates between the jaws *a a*. In practice these jaws are made adjustable in a suitable manner to take up the wear of the cam and the jaws. The outer end of the slide A is adapted to form the lower member of the clamping end of the carrier, as shown in Fig. 6. This end of the slide is formed by making a rectangular indent 1, suitable for the upper mem-

ber of the clamp to press the work in, thin portion 2, suitable for the work to be pressed against, and opening 3, suitable for permitting the action of the needle and cutter in making a buttonhole. The sides of the indent 1 can be vertical or inclined. In practice I prefer to have them inclined, so that the material of different thicknesses will readily press against the portion 2. In use in a machine in which the clamp does not move laterally the needle-plate is slightly raised within the opening 3, just around the needle-hole, so that it (the raised portion) is flush with the top of the thin portion 2 of the clamp. To the rear end of the slide A is attached a bearing 4, the upper part of which overhangs the slide A. To the overhanging portion of the bearing 4 is hinged in a usual manner the rear end of a flat spring 6, which is bifurcated at its forward end, forming extending portions 7 and 8, to which are attached in the following manner two presser-shoes.

Each of two studs 9, having portions 9* and 10 and reduced and threaded portion 11, has a seat in shoes 12 and 13, respectively, as seen in Fig. 3. The upper ends of these studs pass loosely through the portions 7 and 8 of the spring 6 and are held therein by a nut 14, which is rounded on its under side to allow the studs to rock slightly and through them the shoes 12 and 13. A threaded screw 15 has a seat in a threaded hole which passes through the overhanging bearing 4. This screw is pointed at its end and fits in a usual manner into a locating-hole formed in the upper side of the spring 6. The screw serves as a means for regulating the pressure of the spring 6, which, through the studs 9, presses directly on the shoes 13 and 14. Springs 16 and 17 are located directly under portions 7 and 8 of the spring 6 and have holes centrally through them, through which the portion 10 of the studs 9 freely passes. The ends of the springs 16 and 17 are attached to transverse shoes 18 and 19. These shoes have extending tongues 20, 21, 22, and 23, which fit loosely in slots or ways formed in the ends of the shoes 12 and 13, as seen in Fig. 4. These tongues are slightly rounded on their sides, so that the shoes 12 and 13 can turn laterally,

and the tongues moving freely in the slots they can of course rock longitudinally or move vertically with respect to shoes 18 and 19 or with respect to each other. Shoes 18 and 19 can also rock laterally and longitudinally or move vertically with respect to the shoes 12 and 13 or with respect to each other. Screws 24, 25, 26, and 27, having seats in threaded holes in the portions 7 and 8 of the spring 6, serve as a means for increasing or decreasing the pressure of the shoes 18 and 19 on the work. The spring 6 is so constructed that the forward end of the same normally presses downwardly, and, as before stated, the screw 15 serves as a means for increasing or decreasing the said pressure. Any suitable means can be provided for opening the clamp—such, for example, as is provided in the machine above referred to. In that machine the upper end of a rod 28 is loosely attached to a lever, and means are provided for operating the said lever through a connection between it and a foot-lever. The lower end of the rod 28 is loosely connected to the spring 6.

The regulation of the pressure of the clamp is as follows: Screws 24 and 25 regulate the pressure of shoe 19, through the contact of their ends with the rear ends of springs 16 and 17, and screws 26 and 27 the shoe 18, through their contact in the same manner with the forward ends of the said springs. The pressure of spring 6 and through it the shoes 12 and 13 are regulated, as before mentioned, through the screw 15. Thus it is seen that each shoe can be regulated individually or collectively.

This work-clamp holds the lightest kind of material down all around the hole as well as the heavy material; also, it is advantageous for making a buttonhole with one end close to a hem, as the end shoe coming down on the hem yields and allows the other three shoes to also press the material, and thereby still hold it down all around the hole. It holds the work better and is adapted for a much wider range of work than any work-clamp known to me.

I do not wish to be limited to the particular mechanism herein described, as it is evident that in some particulars different means can be used for accomplishing the same result and without departing from the spirit of my invention.

What I claim as new is—

1. A work-carrier comprising two extending ends of a flat spring, two shoes, connections between said shoes and said extending ends, two transverse shoes, and means supported by the aforesaid flat spring for yield-

ingly holding the said transverse shoes in position.

2. A work-carrier comprising a yielding device for holding the work longitudinal of the buttonhole, a second device for holding the work transverse of the buttonhole, said first and second devices being constructed and adapted to form a longitudinal opening for the stitching mechanism to operate through in stitching buttonholes, and yielding means supported by the first device adapted to carry the said second device and yieldingly press the same into engagement with the work.

3. A work-carrier comprising a yielding device for holding the work longitudinal of the buttonhole, a second yielding device carried by the first device for holding the work transverse of the buttonhole, and means for separately adjusting each of the said devices.

4. In a work-carrier having an upper member, two separate shoes adapted to engage the work one on each side of the buttonhole, said shoes carried by the upper member of the work-carrier, two flat springs and means for supporting the same, two separate shoes adapted to engage the work at each end of the buttonhole carried by the said flat springs, and means adapting the aforesaid upper member of the work-carrier to yieldingly bring all of the said shoes into engagement with the work.

5. A work-clamp comprising two separate shoes adapted to engage the work, one on each side of the buttonhole, two separate studs, one centrally located in the back of each of the said shoes, a separate spring mounted on each of the said studs, two shoes adapted to engage the work at the ends of the buttonholes, a connection between each of the ends of the said springs and the said shoes at the ends of the buttonholes.

6. A work-clamp comprising four separate shoes adapted to engage the work, one at each side and one at each end of the buttonhole, a device adapted to carry and press the said shoes into engagement with the work, a plurality of springs adapted to connect and separately depress the shoes at the ends of the buttonholes, means for carrying the said springs, and means in connection with the aforesaid device adapted to regulate the pressure of the said springs.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM N. PARKES.

Witnesses:

EUGENIE P. HENDRICKSON,
GEO. W. EISENBRAUN.