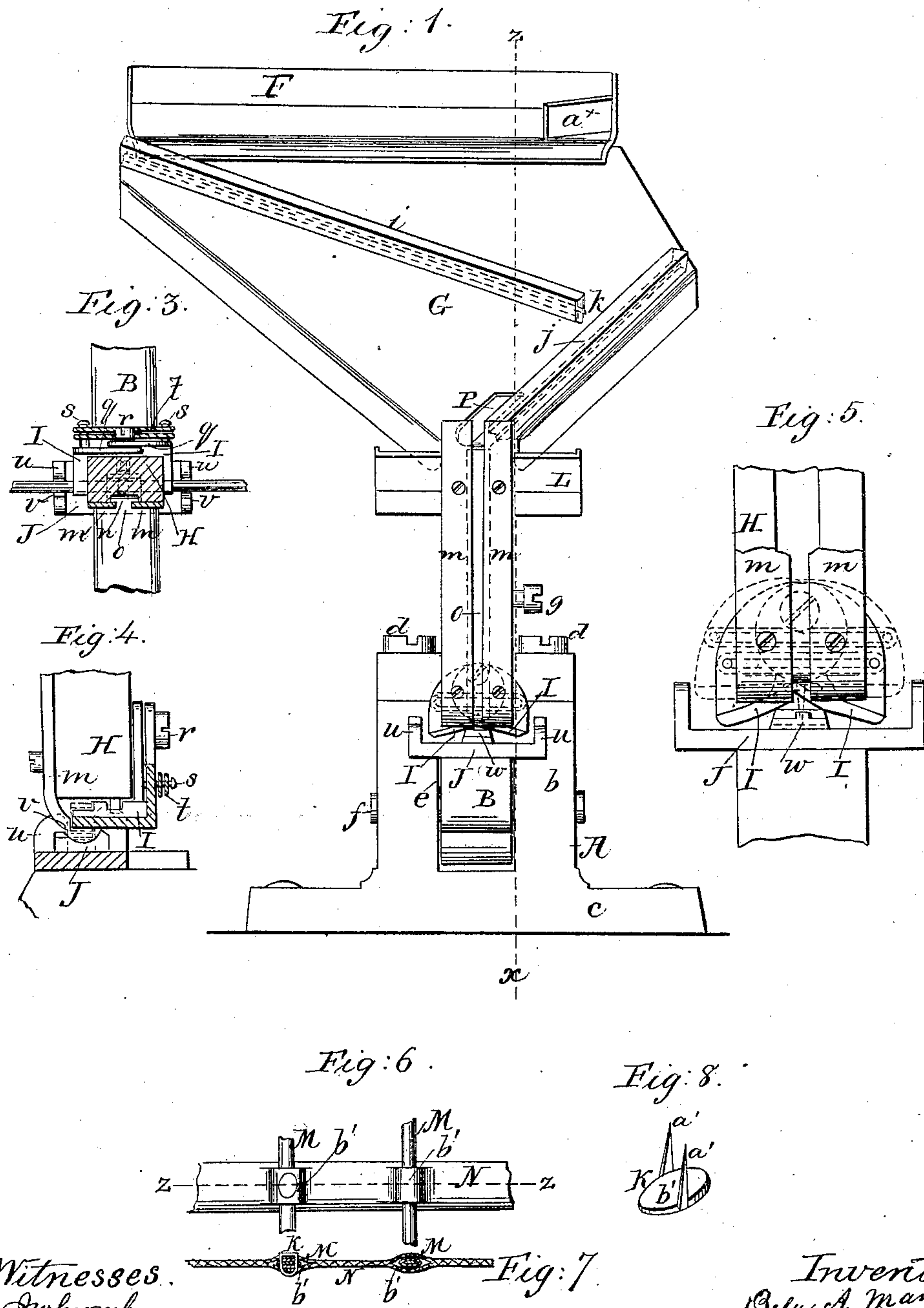


B. A. MANN.
Hoop Skirt Machine.

No. 34,026.

Patented Dec. 24, 1861.



Witnesses.
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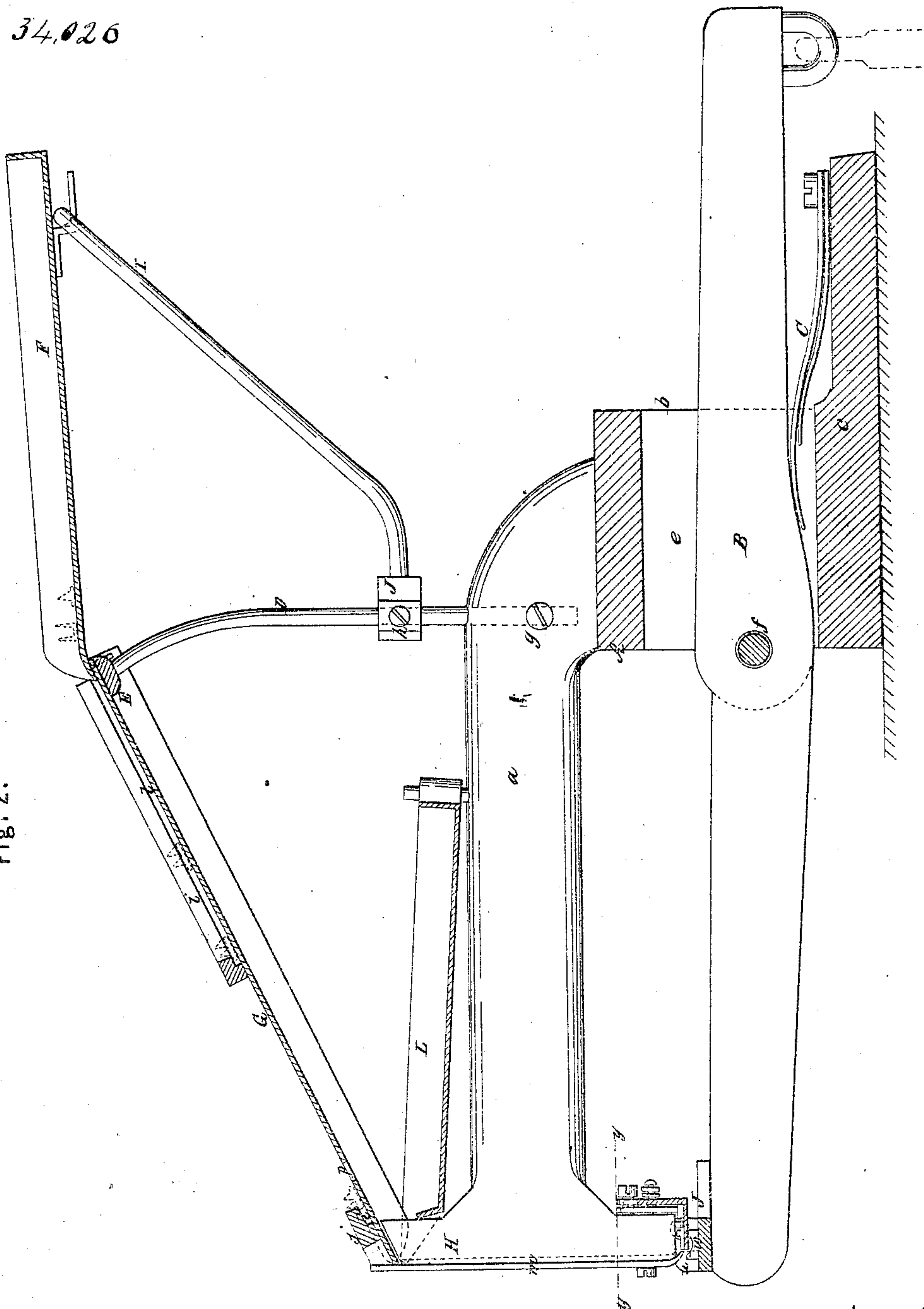
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Fig. 2.



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UNITED STATES PATENT OFFICE.

BELA A. MANN, OF WEST MERIDEN, CONNECTICUT, ASSIGNOR TO JEDEDIAH WILCOX AND H. H. MILLER, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CLASPING HOOPS TO LADIES' SKIRTS.

Specification forming part of Letters Patent No. **34,026**, dated December 24, 1861.

To all whom it may concern:

Be it known that I, BELA A. MANN, of West Meriden, in the county of New Haven and State of Connecticut, have invented a new and useful Machine for Clasping Hoops to Ladies' Skirts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a front view of my invention; Fig. 2, a longitudinal vertical section of the same, taken in the line *x x* of Fig. 1; Fig. 3, a horizontal section of a part of the same, taken in the line *y y* of Fig. 2; Fig. 4, an enlarged detached side sectional view of a portion of the same; Fig. 5, an enlarged front view of a detached portion of the same; Fig. 6, a view of a portion of a hoop-skirt, showing the work performed by the machine; Fig. 7, a section of Fig. 6, taken in the line *z z*; and Fig. 8 an inverted perspective view of a clasp.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a machine by which the hoops of ladies' hoop-skirts may be rapidly clasped to the tapes thereof, and the work performed in a superior manner.

The invention consists in the employment or use of a hopper and feeding-plate, the latter being peculiarly constructed and arranged and used in connection with a clinching mechanism, all being so arranged that the clasps, as the machine is operated, will be fed down in a proper manner to the clinching device, which is operated by the foot of the attendant and made to perform the desired work, the parts to be connected (the hoops and tapes) being presented to the machine by the hands of the attendant.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the stock or frame of the machine, which is composed of a horizontal arm, *a*, projecting from a short upright pillar, *b*, on a base-plate, *c*. These parts may be of cast metal, and the pillar *b* and plate *c* may be cast in one piece, while the arm *a* may be cast sep-

arate and secured to the top of the pillar *b* by screws *d*. The pillar *b* has a slot or recess, *e*, made in it, through which a lever, *B*, passes, the fulcrum-pin *f* of the lever passing through lugs or projections at the front part of the pillar.

C is a spring, which is secured to the back part of the base-plate *c*, and acts against the under side of the back part of lever *B*, and has a tendency to keep the front end of said lever in a downward position, as will be understood by referring to Fig. 2. The back end of the lever *B* is connected by a rod or chain to a treadle, which may be arranged in the usual way. The base-plate *c* is bolted to a bench or framing of such a height as to admit of the attendant or operator sitting while at work with the machine.

D is a rod, which is fitted vertically in the back part of the arm *a*, and may be secured higher or lower in position by means of a set-screw, *g*. The upper part of the rod *D* is curved slightly forward, and has a horizontal bar, *E*, attached to it, which bar forms a support for the front end of a hopper, *F*, and the back end of a feeding-plate, *G*. The front end of the feeding-plate rests on the top of an upright head or bar, *H*, which is at the front end of the arm *a*, and may be cast with it in one piece. The back of the hopper *F* rests on the upper and horizontal part of a rod, *I*, the lower part of which is inclined and is fitted in a slide, *J*, on the rod *D*, said slide being secured on the rod at any desired point by a set-screw, *h*. (See Fig. 2.) By adjusting the slide *J* higher or lower on the rod *D* a greater or less inclination may be given the hopper *F*, and the feeding-plate *G* may be more or less inclined by adjusting the rod *D* higher or lower in the arm *a*. This will be fully understood by referring to Fig. 2.

The hopper *F* is simply a shallow sheet-metal box or pan of rectangular form open at its front end, and having a short vertical plate or ledge, *a^x*, fitted obliquely at its front part and right-hand side, as shown in Fig. 1.

The feeding-plate *G* has a more inclined position than the hopper *F*, and it may be described as being a plane with two bars, *i j*, attached nearly or about at right angles with

each other. (See Fig. 1.) The bars ij are not in contact, a space, k , being between them, and each bar has a groove, l , made in the lower part of its face side, both of which are shown in Fig. 2. The bars ij may be termed "conductors," as they conduct the clasps from the hopper F to the passage-way which leads them to the place where they are acted upon by the clinching device. This passage-way is formed of two vertical plates, $m m$, and a groove, n , the plates being secured to the front side of the head or bar, H, with a small or narrow space, o , between them, as shown in Fig. 1. The plates $m m$ overlap the edges of the groove n , which is made vertically in the front of the head or bar H. (See Fig. 3.)

The feeding-plate G has an oblong slot or opening, p , made through it at its front part, near the upper ends of the plates $m m$. This slot or opening is quite near the bar j , as will be seen by referring to Fig. 1, and it performs an important function, as will be presently explained. The lower ends of the vertical plates $m m$ are curved so as to project underneath the front part of the head or bar H, as shown in Figs. 2 and 4.

II represent two plates which are underneath the head or bar H, just back of the lower ends of the plates $m m$. The plates II have each an upright flange, q , at their back edges, and these flanges overlap each other and are secured to the head or bar H by a screw, r . The plates II therefore, it will be seen, are suspended from the screw r , the flanges $q q$ being allowed to work freely on it. Each flange q has a small hook or pin, s , attached, and around these pins a spring, t , passes. This spring may be of india-rubber or other suitable elastic material, and it has a tendency to keep the inner edges of the plates II in contact, in which position they are somewhat inclined, as shown in Figs. 1 and 5.

On the front end of the lever B, at its upper surface, there is secured a steel plate, J, which has an upright ledge, u , at each end. These ledges are each provided with a notch, v . (See Figs. 3 and 4.) At the center of the plate J there is also a small ledge or projection, w , which has a groove made longitudinally in its upper surface, said groove being of semicircular form in its transverse section, as shown in Fig. 4.

The clasps K, which are used with the machine, are of the ordinary construction, two prongs, $a' a'$, projecting from a plate, b' , as shown in Fig. 8.

L represents a box, which is secured on the upper surface of the arm a . The use of this box will be presently shown.

The operation of the machine is as follows: The clasps K are placed in the hopper F and gradually pass down upon the feeding-plate G, the jar or vibration of the machine when in operation constituting a sufficient shake

motion. The clasps pass down against the bar i in an inverted position, and are conducted by said bar to bar j , one side of the plates b' of the clasps fitting in the grooves l of the bars ij , said grooves l serving to keep the clasps in proper position. The bar j conducts the clasps to the passage-way formed by the plates $m m$ and groove n , and this passage-way may be filled with clasps, the prongs a' of which project through the space o . The lowermost clasp, K, has an upright position, as the lower curved ends of the plates $m m$ conduct it between the plates II, which retain it in such position directly over the ledge w of the plate J, one of the plates II being notched at its inner edge to receive the clasp. In case a clasp should not be in proper position against the bar j , it cannot pass the slot or opening p , as the latter is so close to j that a clasp in an improper position would fall through said slot into box L. The clasps, when in proper position, are retained against the bar, in consequence of the end of the plates b' being in the groove l , and when this is not the case the clasps must fall through the slot or opening. The operator places the hoop M on the plate J, the loop b' of the tape N being in the ledge w , and the back end of the lever B is drawn suddenly down by the action of the foot of the operator on the treadle, and the front end of the lever B is forced upward, and the prongs $a' a'$ of the clasps will be forced through the edges or sides of the loop b' and through the tape N, and coming in contact with the concave or semicircular-grooved surface of the ledge w will be clinched at the under side of the tape N, as shown by the dotted lines in Fig. 4. The hoop M is moved along on the plate J, and is secured to every tape of the skirt in the way described. The clasps K feed themselves down in the passage-way behind the plates $m m$ by their own gravity, and as the clasps K are clinched the plates II are forced upward and apart by the action of the ledge w , (see dotted lines in Figs. 1 and 5,) so as to release the clinched clasp, the plates II instantly closing under the action of the spring t as the plate J and ledge w descend.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The inclined hopper F and feeding-plate G, when arranged so as to be adjusted by the rods D I, and used in connection with a clinching device, for the purpose herein set forth.

2. The bars ij , placed obliquely on the feeding-plate G, provided with grooves l , and used in connection with the slot or opening p , substantially as and for the purpose set forth.

3. The passage-way for the clasps K, formed of the plates $m m$, attached to the head or bar H, and groove n , made therein, when said passage-way is used in combination with the feeding-plate G and the clinching device and ar-

ranged therewith, as and for the purpose specified.

4. The clinching device formed of the plate J, attached to lever B or its equivalent and provided with the ledge *w*, having a concave or grooved upper surface, in combination with the clasp-sustaining plates I I, attached to the

head or barrel H, and arranged in relation with the plates *m m* and groove *n*, substantially as and for the purpose herein set forth.

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Witnesses:

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