A. C. Mason,

Clothes Pin Machine.

No. 25,344. Patented Sep. 6, 1859.

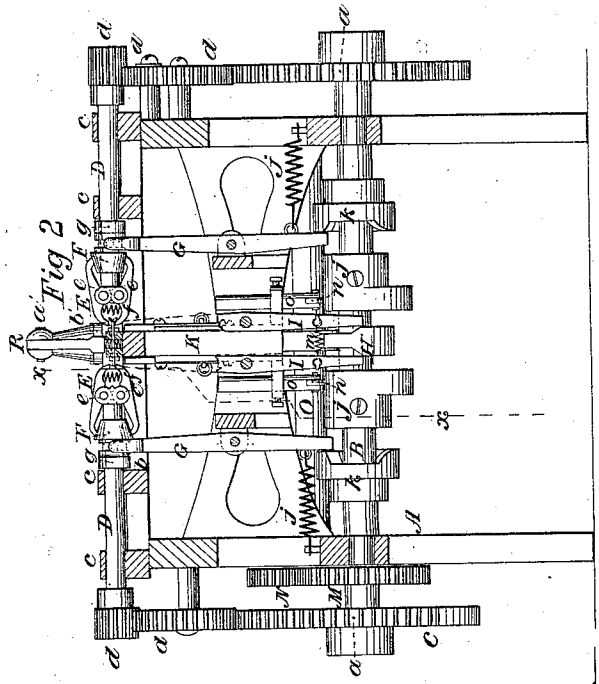


Fig 2

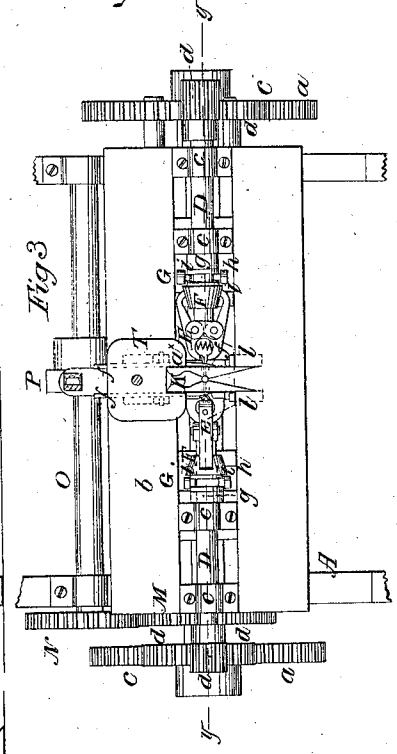


Fig 3

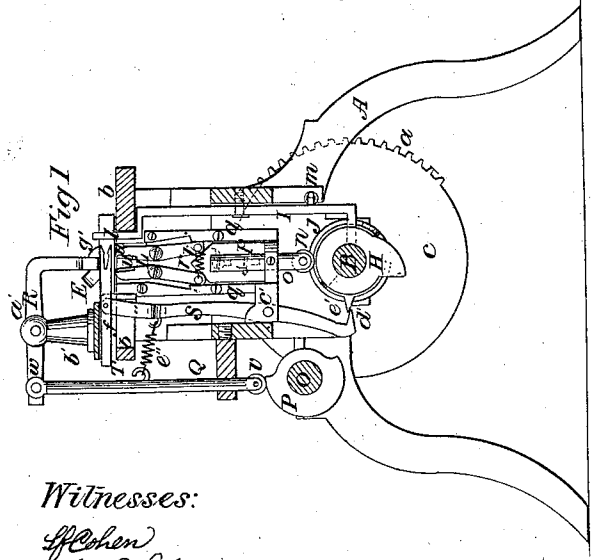


Fig 1

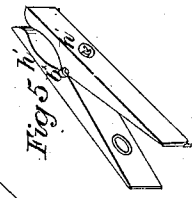


Fig 5

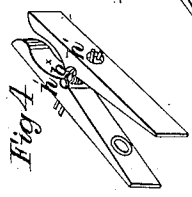


Fig 4

Witnesses:

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UNITED STATES PATENT OFFICE.

ALVIN C. MASON, OF SPRINGFIELD, VERMONT.

MACHINE FOR WIRING THE JOINTS OF CLOTHES-PINS.

Specification of Letters Patent No. 25,344, dated September 6, 1859.

To all whom it may concern:

Be it known that I, A. C. MASON, of Springfield, in the county of Windsor and State of Vermont, have invented a new and useful Machine for Securing the Wire Joints or Hinges in Jointed Clothes-Pins; 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 transverse vertical section of my invention taken in the line *x x*, Fig. 2. Fig. 2 is a front sectional view of ditto taken in the line *y y*, Fig. 3. Fig. 3 is a plan or top view of ditto, the pressure lever, forming a part of the clamp, being removed. Fig. 4 is a perspective view of a pin with its joint fitted in it ready to be operated on by this invention. Fig. 5 is a perspective view of ditto with its joint secured in it.

This invention consists in the employment or use of a clamping device, pliers, adjusting forks and shears, arranged to operate substantially as hereinafter shown, whereby the wire joints or hinges of jointed clothes pins may be secured in the pins in a very expeditious manner, and equally as well as can be done by hand.

The several parts comprising a jointed clothes pin are all made by machinery, and the work is done very rapidly and at small cost. In articulating the two parts or jaws of the pin, however, considerable time has heretofore been consumed in securing the joints in the parts, this work having been done manually. This invention is designed to supersede the manual articulation of the parts and to execute the said work with a rapidity commensurate with the manufacture of the individual parts of the pins.

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

A represents the framing of the machine which may be constructed in any proper way to support the working parts.

B is the driving or power shaft placed longitudinally in the lower part of the framing, and having a wheel, C, at each end, at the outer side of the framing, said wheels having a portion of their peripheries toothed, as shown at *a*, the other portions being smooth.

On the top of the framing, A, there are two horizontal bed pieces, *b b*, with a space of suitable width between them. Directly over this space two horizontal rotating and sliding arbors, D D, are placed. These arbors are fitted in bearings, *c*, and their outer ends are connected by gearing, *d*, with the wheels, C, that is to say, connected at intervals or intermittingly as the wheels, C, are but partially toothed. One arbor is connected with its wheel, C, by two gear wheels, *d*, and the other connected by three wheels, *d*, in order to give reverse movements to the two arbors, D—see Figs. 1 and 2.

To the inner end of each arbor, D, pliers, E, are attached. These pliers have each part connected to their respective arbors by a pin, *e*, and a spring, *f*, is placed between the jaws of each pair of pliers; said springs having a tendency to keep the jaws distended or in an open state—see Figs. 2 and 3. On each arbor, D, a sliding cone, F, is placed loosely and allowed to slide freely back and forth. The length of the outward movement of each cone is determined by a boss, *g*, on each shaft.

To each cone, F, the upper end of a lever, G, is attached. These levers are attached to the cones by means of forks, *h*, which embrace them, and have pins, *i*, the pins fitting in circumferential grooves in the cones, as shown clearly in Fig. 3. To the lower parts of the levers, G, springs, *j*, are attached, one to each; and the lower ends of said levers bear against cams, *k k*, on the shaft, B.

On the shaft, B, at about its center a cam, H, is secured. This cam actuates two levers, I I, the upper ends of which project a short distance above the bed-pieces, *b b*, and by the inner edge of the front bed-piece, and from jaws, *l l*, the use of which will be presently shown. The lower parts of the two levers, I I, are connected by a spring, *m*, which spring has a tendency to keep the jaws, *l l*, distended. On the shaft, B, there are also placed two cams, J J, one at each side of the cam, H. These cams bear against friction rollers, *n*, which are at the lower ends of vertical rods, *o*, that are attached to slides, *p*, fitted between proper guides, *q*, that are attached to each side of a vertical bar, K, in the framing, A. The upper ends of the slides, *p*, are of pointed or V-form, as shown clearly in Fig. 1, and they are attached each to a slide, *r*, which slides are also fitted be-

tween the guides, *q*. The slides, *p*, are attached to the slides, *r*, by means of screws, *s*, which pass through oblong vertical slots in the slides, *p*, and admit of an independent movement of the latter.

To the upper part of each slide, *r*, a pair of shears, L, are attached. The shears are of the hand nipper form, and the lower parts of their tangs are connected by spiral springs *t*, which have a tendency to keep the blades or cutting edges, *u u*, distended—see Fig. 1.

On the driving shaft, B, near one end of it a toothed wheel, M, is placed. This wheel gears into a corresponding wheel, N, on a shaft, O, placed on the framing parallel with the shaft, B. On the shaft, O, a cam, P, is placed, said cam acting against a roller, *v*, at the lower end of a vertical rod, Q. The upper end of this rod, Q, is connected by a pivot, *w*, with a lever, R, which has its fulcrum, *a'*, in an upright, *b'*, on the framing. The front end of the lever, R, is bent or curved downward directly over the upper surface of the bar, K.

S is a lever which is placed in the framing, A, and has its fulcrum at *c'*, as shown in Fig. 1. The lower end of this lever is bent to form a toe or projection, *d'*, for an arm, *e'*, on the cam, H, to act against. The upper end of the lever, S, has a spring, *e''*, attached to it, said spring being also attached to the rod, Q. The upper end of the lever, S, is forked and each prong is attached to a slide bar, *f'*, fitted in a plate, T, on the back bed-piece, *b*. The front end of each slide bar, *f'*, is forked, as shown at *g'*, Fig. 1, and one or both prongs may be barbed.

The operation of the machine is as follows:—The joints, *b**, of the clothes pins are formed simply of wire, one part being twisted around the other, as shown clearly in Fig. 4, the ends of each part of the joint passing through the jaws, *h' h'*, of the pin, separate holes being made in the parts to allow the ends of the wire to pass through, and a counter sunk portion made to receive the twist the same as usual. The joints are fitted in the parts or jaws, *h' h'*, by hand, this being the work of a moment, and the pin, shown in red in Figs. 1, 2 and 3, with the joint inserted in it and the ends of its wire projecting beyond each part of the pin, is laid flatwise on the bed pieces, *b b*. The front end of the pin is fitted in a recess, *a**, in the plate, T, and the back end is fitted between the jaws, *l l*, of the levers, I I. When the pin is adjusted to the machine the jaws, *l l*, are distended, and the bent lever, R, is in an elevated state. Motion being given the shaft, B, by any convenient power, the cam, H is the first part to act, and it, by acting against the lower parts of the levers, I I, throws the jaws, *l l*, toward each other until they grasp the back part of the pin and distend the front part, so that the pin will be firmly clamped by the jaws, *l l*, and the recess, *a**, in plate, T. Just after the commencement of the movement of the jaws, *l*, or simultaneously with their movement, the front or inner end of the lever, R, descends and presses both parts of the pin snugly down on the upper end of the bar, K, and keeps them perfectly level. The arm, *e'*, on the cam, H, then strikes the toe, *d'*, of lever, S, and said lever is actuated, and the forks, *g*, thrown forward. These forks move forward in order to bend the ends of the wires of the joints together, said ends projecting beyond the sides of the pin. The movement of the forks, *g*, is quite a rapid one, and as soon as the forks recede the pliers, E, move forward, and grasp the ends of the wire that project beyond the side of the pin, the springs, *j*, effecting this movement when the prominent portions of the cams, *k k*, pass the lower end of the levers, G G. The jaws of the pliers are closed so as to grasp the ends of the wires in consequence of the cones, F, being forced between the tangs of the pliers as the latter are thrown forward by the levers, G. When the pliers, E E, have grasped the ends of the wires, the arbors, D D, are rotated in reverse directions, the toothed portions, *a*, of the wheels, C, engaging with the gearing, *d*, and the ends of the wires are twisted after a few revolutions of the arbors and pliers. The pliers, E E, then recede, their jaws being opened by their springs *f*, the levers, G, pressing the cones, F, against the bosses, *g*, on the arbors, D, and the arbors and pliers cease to rotate, and the cams, J J, elevate the rods, *o*, and slides, *p r*, and shears, L, the latter being distended by their springs *t*, and as they rise encompassing the twisted ends of the wires. When at a proper height their motion is arrested by a suitable stop and the slides, *p*, having an independent play or movement are raised and their pointed or V-shaped ends distend the tongs of the shears, L, thereby closing the cutting edges, *u u*, which cut off the twisted ends of the wires as shown clearly in Fig. 5. The shears, L, then descend, the finished pin removed from the machine and an unfinished one inserted in its place, the jaws, *l*, being distended, and the lever, R, rising as the shears descend so that the machine will be ready to receive a succeeding pin.

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

1. The intermittingly rotating pliers, E E, in connection with a clamping device formed of the jaws, *l*, recess, *a**, and lever, R, or their equivalents, and shears, L L, arranged to operate substantially as and for the purpose set forth.

2. In combination with the pliers, E, and shears, L, and clamping device, the sliding

forks, g', arranged for joint operation, as set forth.

3. The particular manner of opening and closing the pliers, E E, and operating the arbors, D, to wit, by means of the sliding cones, F, in connection with the springs, f, and permanent bosses, g, on the arbors, D, whereby the jaws of the pliers are opened and closed, and the arbors, D, shifted by a very simple mechanism.

ALVIN C. MASON.

Witnesses:
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J. W. COOMBS.