J. C. Cooke.

Button Mach.

No. 9146.

Patented July 27 1852

Fig. 4.

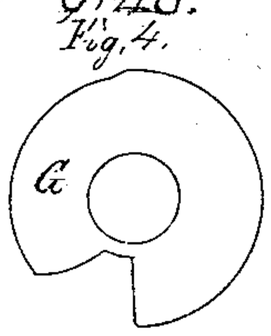


Fig. 6.

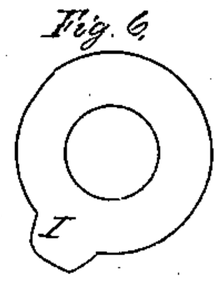


Fig. 5.

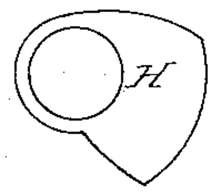


Fig 2

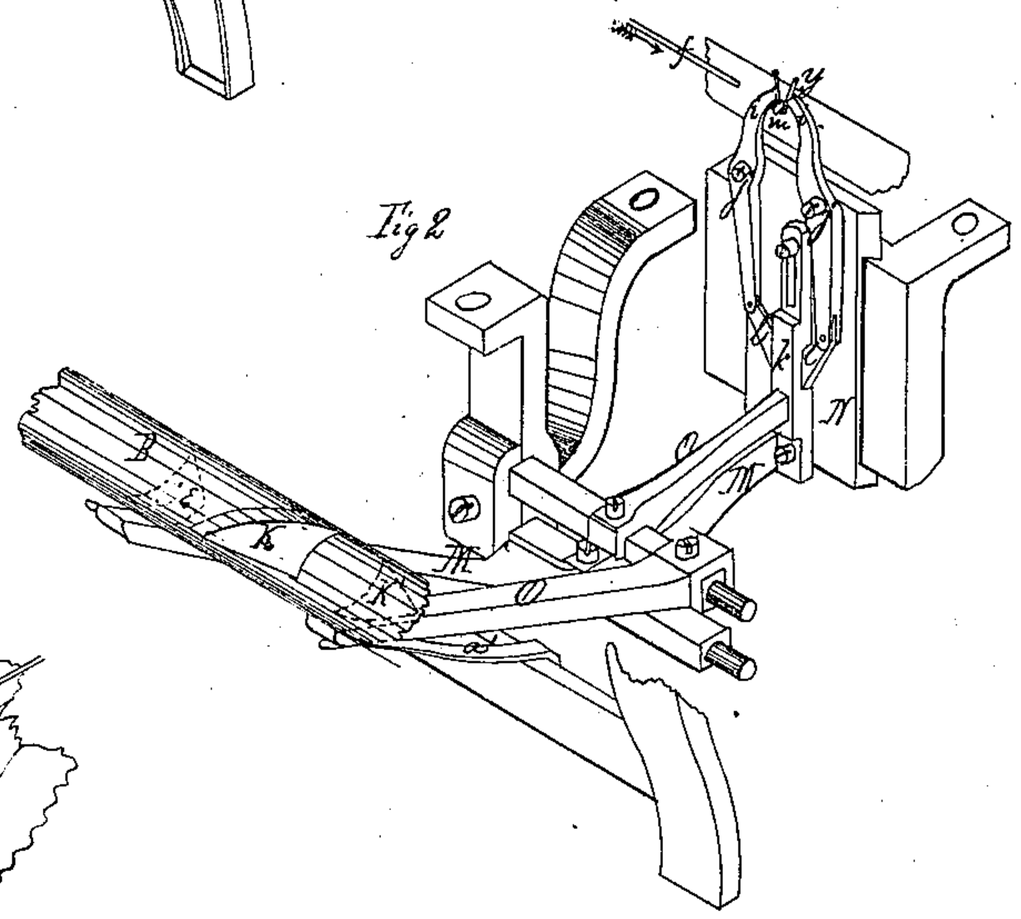
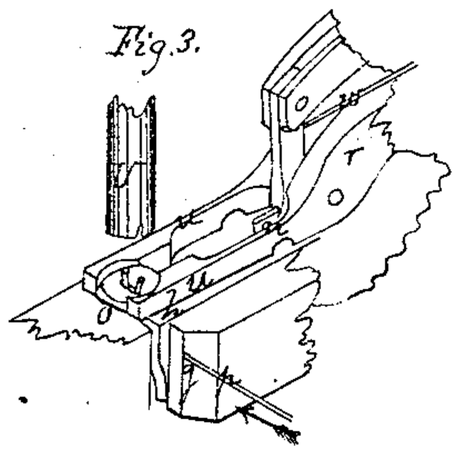


Fig. 3.



UNITED STATES PATENT OFFICE.

JAMES C. COOKE, OF WATERBURY, CONNECTICUT.

MACHINE FOR FORMING BUTTON-BACKS.

Specification forming part of Letters Patent No. 9,146, dated July 27, 1852; Reissued April 7, 1863, No. 1,446.

To all whom it may concern:

Be it known that I, JAMES C. COOKE, of the town of Waterbury, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Machinery for Making Button-Backs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, which make a part of this specification, in which—

Figure 1 is a perspective view of the machine, showing the lever, dies, slides, cams, springs, &c., Fig. 2 is a perspective view of that part of the machinery which is under the bed plate, showing how the eye is bent to its proper shape by the clamps and pin, Fig. 3 is a perspective view of the die which sets, or rivets, down the eye in the button back and the parts connected with it, Fig. 4 is a plan view of the cam G, which acts upon the bar *h*, that cuts off the wire and also forms a part of the bed on which the back rests while the eye is being riveted or set down, Fig. 5 is a plan view of the cam H, which acts upon the bar *r*, that, with its fingers, picks up the back and places it on the eye, and is located between the cams G, and I, on the main shaft, represented in dotted lines in Fig. 1, Fig. 6 is a plan view of the cam I, which acts on the bar *r*, to depress the fingers to set the back onto the eye after both are formed.

My improvement consists in so constructing and arranging the several parts of the machine that by pouring the blanks into a hopper they will pass down through an upright hollow cylinder to a sliding plate which will carry each blank separately to the die which punches them for the eye and gives them the appropriate form; and so that the wire for the eye may be fed by the jaws of a jointed lever and sliding plate to the place for forming the eye, be cut off of the proper length, and by suitable fingers or clamps, &c., be bent around a pin to the proper shape to be inserted into the back; and so that the back, after being formed, will be taken by another pair of suitable fingers and placed onto the eye, formed as before described, when a die or punch, worked by a lever and cam, will set or rivet down the eye inside of the back and then throw it out into a proper receptacle ready for use, &c.

I make the frame A, A, A, of cast iron or any other suitable material, of a convenient size and shape for use. I make the main or cam shaft B of any suitable metal, with a fly wheel C, and cams, D, E, F, G, H, I, K, and K′, to work the several levers and bars.

I make the apparatus for feeding the wire for the eye of the button of a flat sliding plate, L Fig. 1, on which I fix a permanent or stationary jaw *a*, and a movable jaw *b*. This movable jaw *b*, is pressed against the stationary jaw, *a*, by means of the jointed lever *c*, *c′*. This lever is worked by the cam, D, coming in contact with the extreme end of the lever (as at *d*, Fig. 1) and forcing it out toward the edge of the frame, which by means of the fulcrum screw, *e*, the jaw, *b*, is pressed toward the jaw, *a*, so as to bind the wire, when by the continued action of the cam D, on the lever *c*, *c′*, the sliding plate, L, will be carried forward so as to force a quantity of wire, sufficient for one eye, through the hole in the block of the cutting die, as seen at *g*, Figs. 1 and 3. When the wire *p*, Figs. 1, 2, and 3, has been thus passed through the hole, *g*, the cam, G, forces forward the bar, *h*, (the corner of which forms the cutting edge of the die,) which cuts off the wire, and passes up to form a part of the bed on which the back rests while the eye is being riveted in, (and to steady the eye at the same time,) after which it is thrown back by the spring, *z*, Fig. 1, and the sliding plate L, is thrown back by the spiral spring, *d*, acting on the lever, *c*, *c′*, Fig. 1, while the wire is steadied by the block or stud *d′*, by the pressure of the screw. *b′*, is a spring designed to steady the wire while being cut off, &c., but is quite immaterial. When the wire has been passed in and cut off by the die the jointed fingers or clamps, *i*, *i*, Fig. 2, are forced up, (the cam, E, acting on the compound lever, M, M, which works the sliding plate, N, to which the clamps, *i*, *i*, are attached by the fulcrum screws, *j*, *j*,) so as to bend the wire up around the pin, *m*, as seen in Fig. 2. At this time a cam, (like K, Fig. 2, not seen but indicated by dotted lines at K′, Fig. 2,) acting on the compound lever, O, O, raises the slide, *k*, Fig. 2, which

by means of the arms *l*, *l*, working on joint pins, spreads out the legs of the clamps so as to bring the jaws of the clamps nearly together above the pin *m*, as seen in Fig. 2, so as to give the eye the proper shape, and at the same time the projection or tongue, *n*, Figs. 1, and 3, coming between the upper ends of the wire, bends them outward, as seen in Figs. 2 and 3, when the eye is ready to receive the back, as represented at *y*, Fig. 2. I pour the blanks into a convenient hopper, which will deliver them into the upper end of the upright hollow cylinder, P, Fig. 1. From this cylinder they pass out singly onto the stationary plate or platform, Q, in such a position as to rest in the semicircular space in the thin plate, *p*, *p*, which plate is forced out to the proper position for that purpose by the bar *q*, *q*, Fig. 1, (to which it is secured.) This bar is attached to the bar, *r*, *r*, at *r'*, which is worked by the cam, H, Fig. 5, (which is located between the cams, G and I, Fig. 1, and is indicated by the dotted lines at H, Fig. 1,) and is thrown back by the spring, *s*, *s*, so as to bring the blank to the forming and punching die, as seen at *t*, Fig. 1. The cam, K, Fig. 2, raises the back end of the lever, R, and thereby forces down the punch S, of the forming die, which punches and forms the back by forcing it through the die or plate of the platform, Q, down onto the plate or bed, T, in the proper shape or form to receive the eye. The cam, H, Figs. 1 and 5, acting on the end of the bar, *r*, *r*, Figs. 1 and 3, forces forward the fingers, *u*, *u*, till they pass under the forming punch, S, where they receive the back as it is punched and formed. The spring, *s*, *s*, then throws back the bar, *r*, *r*, so as to bring the formed back directly over the eye, (bent as before described,) when the projection on the cam I, Figs. 1 and 6, by raising the back end of the lever, *v*, *v*, forces down the fingers so as to place the back onto the eye, as seen in Figs. 1 and 3. The cam, F, (which is of a shape like K,) then raises the back end of the lever, V, which forces down the set punch, U, so as to set or rivet the eye into the back, and as the cam, I, releases the lever *v*, *v*, the spring, *w*, Figs. 1 and 3, raises the fingers, *u*, *u*, (which work on a joint pin shown at *x*, Fig. 1,) when the complete button back, with the eye inserted, falls into a proper receptacle. All the levers, bars, &c., which are moved one way by the cams are thrown back to their original positions by suitable springs, as seen at *a'*, *d*, *s*, *s*, *w*, Z, V, V', which may be made of the kind and form and located as convenience may require in any case.

There may be a die or dies fitted at the top of the upright cylinder, P, so as to cut the blanks from the sheet metal at the same time and by the operation of the same power by which the other work is done if thought best at any time.

The cylinder, dies, &c., may be replaced by others of a larger or smaller size, so that button backs of any size may be made in the same machine, and their shape may be varied at pleasure, if the metal is of the proper thickness, &c., for the kind desired.

This machine may be worked by any power, indifferently, applied to the main shaft by gear wheels, pulley and band, crank, or otherwise, as may be found most convenient.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The jointed clamps, (*i*, *i*, Fig. 2,) and the tongue (*n*, Figs. 1 and 3,) to form the eye, when combined with the slide, (L,) with its stationary and movable jaws, (*a* and *b*,) when the movable jaw, and slide, are worked by a jointed lever, (as *c*, *c'*,) to feed the wire; when they are constructed, and made to operate, substantially, as herein described.

2. I also claim the die for punching and forming the button back, composed of the punch, (S,) and bed, (Q,) when combined with the slide, (*p*, *p*,) and feeding cylinder, (P,) when constructed, and operated, substantially, as herein described.

3. I also claim the jointed fingers, (*u*, and *u*,) for receiving the formed and punched back, and conveying it to, and placing it on, the eye, when combined with the setting, or riveting punch, (U,) when they are constructed, combined, and arranged, and made to operate, substantially, as herein described.

JAMES C. COOKE.

Witnesses:
JOHN MERCHANT,
R. FITZGERALD.

[FIRST PRINTED 1912.]