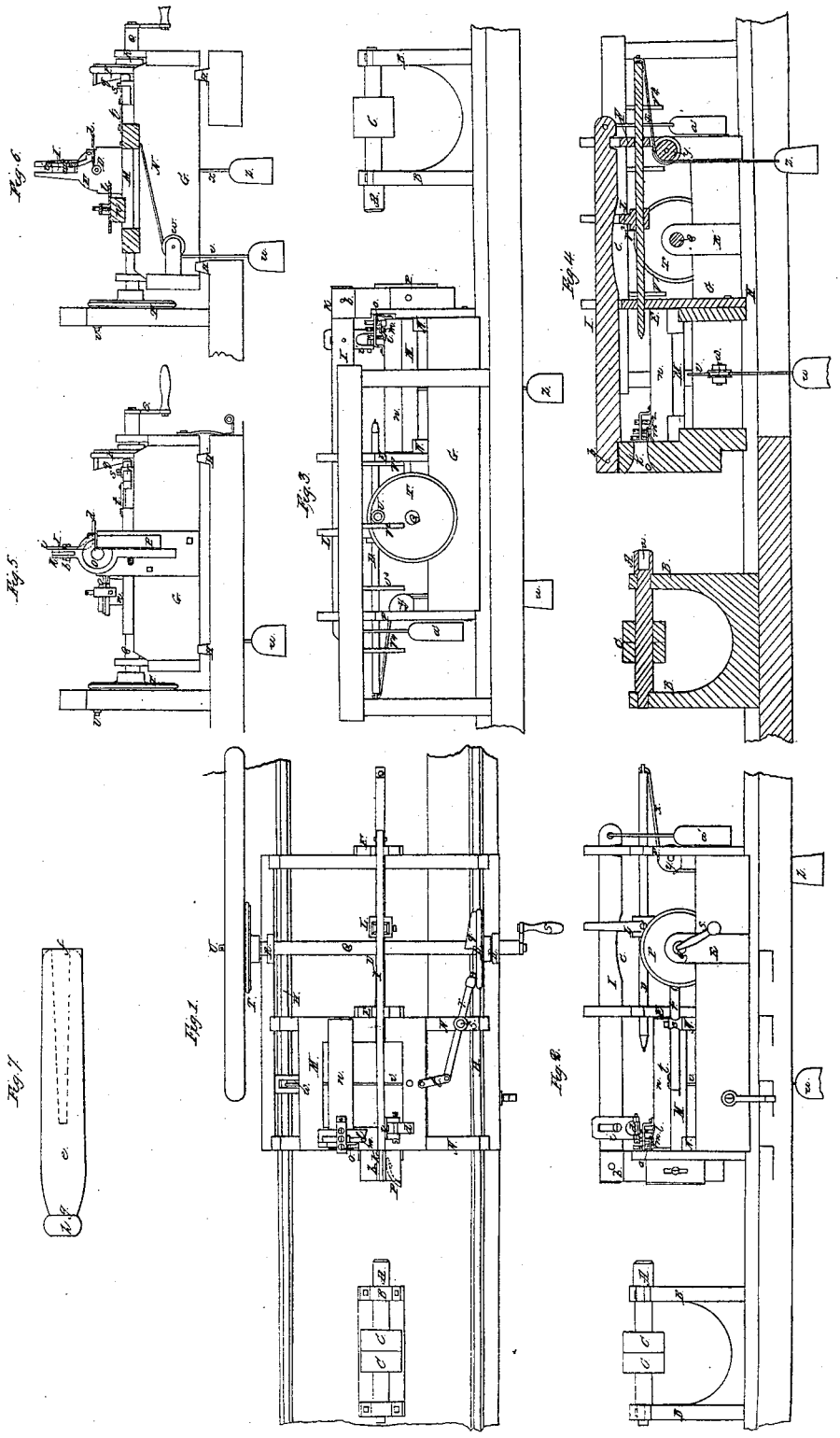
A. Greenrood,

Clothes-Pin Machine.

No. 6,935. Patented Dec. 11, 1849.



UNITED STATES PATENT OFFICE.

ASA GREENWOOD, OF MARLBORO, NEW HAMPSHIRE.

MACHINERY FOR TURNING CLOTHES-PINS.

Specification of Letters Patent No. 6,935, dated December 11, 1849.

To all whom it may concern:

Be it known that I, ASA GREENWOOD, of Marlboro, in the county of Cheshire and State of New Hampshire, have invented a new and useful Machine for Manufacturing Clothes-Pins; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawing, letters, figures, and references thereof.

Of the said drawings, Figure 1, denotes a top view of my said machine. Fig. 2, is a side elevation of it, or a view of that side on which the driving crank is situated. Fig. 3, is an elevation of the opposite side. Fig. 4, is a central vertical, and longitudinal section of it taken so as to exhibit a front edge view of the cutters for forming the neck and head of the clothes pin, and separating the pin from the stick from which it may be made. Fig. 5, is a vertical and transverse section of the machine the same being taken between the mandrel and cutter for rounding the stick, and so as to exhibit the said cutter and various other parts adjacent thereto. Fig. 6, is a transverse section taken through the cutter which forms the body of the clothes pin.

A, in Figs. 1, 2, 3, 4, is the supporting mandrel. It is supported by puppet heads B, B, and has one or more driving pulleys C, C, fixed upon it. Its front end is provided with a suitable chuck contrivance, or orifice *a*, for holding one end of the stick of wood from which the clothes pins are to be successively turned.

D, is a long center rod, whose front end or that next to the mandrel is made conical or pointed as seen in the drawings. The said center rod has its axis arranged in a straight line with that of the mandrel and is supported by two posts or standards E, F, and so as to be capable of being slid or freely moved to and fro in a longitudinal direction in suitable bearings made in or applied to the said posts which extend up from a sliding carriage or frame G, supported by and so as to slide on parallel rails H, H, and in directions toward and away from the mandrel. The said two rails are made parallel to each other and the axis of the mandrel.

Directly over the center rod D, is a long pattern lever I, which plays vertically on a pin or fulcrum *b*, applied to the top of a post K, which is arranged and fixed on the front end of the carriage G, as seen in Figs. 1, 2, 3, 4. A portion of the lower side of the said pattern lever, is hollowed out as seen at *c*, the said part being made to operate in connection with the lower part or bottom of a fork L, which is affixed to the center rod D, and made to extend upward and receive the pattern lever, between its prongs. The curve or hollow *c*, is intended to regulate the movements of the cutter *d*, or that which performs the office of shaping the body of the clothes pin, or that part of it which extends from *e*, to *f*, in Fig. 7, which is a side view of a pin blank, as it comes out of the machines; the part which is afterward removed from it by other means being exhibited by dotted lines. The said cutter *d*, is attached to and held in position by a slide *i*, affixed to the front end of the pattern lever I. It operates on the upper side of the stick, while the other cutters *l*, *m*, or those which shape the neck *e*, *g*, and head *g*, *h*, Fig. 7, of the clothes pin, operate on the under side of it, they being arranged upon and fixed to a bar *n*, of a transverse sliding carriage *m*, as seen in Figs. 1, 3, and 6. The cutter *m*, is a gouged shaped one, and forms the head of the pin, while the other *l*, is properly shaped to give the required form to the neck *g*, *e*. There is also another cutter *o*, which is so placed in, or affixed on the carriage M, as, that at the proper time, it may be advanced or brought up and made to separate the clothes pin from the stick from which it is being made. The carriage M, is supported and made to move back and forth on ways, or horizontal rails N, N, extending across and on the carriage G, herein before described. The carriage M, I denominate the cutter carriage.

Directly in front of the cutters for forming the head of the pin, is the bell mouth orifice O, and cutter P, which are supported on and by the post K. The bell mouth orifice O, is for recieving, guiding and supporting the advancing end of the stick, previous to its being turned down or operated upon by the cutters *l*, *m*, *o*, and after it has been reduced to a cylindrical shape by the cutter P, which is so arranged and made as to perform this operation, or reduce the wood to the proper cylindrical shape to be further shaped by the other cutters.

The mechanism which operates the two carriages G, and M, may be thus explained. Q is the driving shaft, which extends across

the carriage G, is supported and turns in bearings R, R, (affixed to the carriage) and has a turning crank S, applied to one end of it. A circular disk or plate T, is fastened on the opposite end of the shaft Q, and has a small friction roller V, attached to its outer side as seen in Fig. 3. This friction roller operates in connection with a series of pins V′, V², V³, V⁴, being each of the same length, and placed at equal distances asunder, as seen in Fig. 3. On revolving the shaft Q, in the proper direction, the rack of pins, and the friction roller by their action together, will cause the carriage G, to be moved toward or away from the mandrel as occasion may require.

On the shaft Q, is a circular plate *p*, having a cam *q*, affixed to its side as seen in Fig. 1. The said cam *q* operates in connection with one end of a lever *r*, which turns horizontally on a fulcrum *s*, extending up from the rail bar N′, of the carriage G. The other end of the said lever *r*, is connected with the frame M, by means of a connecting link *t*, jointed to the frame and lever. During each revolution of the shaft Q the cam *q*, is made to turn the lever on its fulcrum in such manner as to move the carriage M, on its ways, and so as to draw the cutters *l*, *m*, and *o*, against the stick while it is in revolution. As soon as the lever mounts up the cam, and by its upper or most projecting part, a weight, *u*, depending from a cord *v*, (attached to the carriage M, and passing over a pulley *w*) falls and retracts or drags back the carriage M, and cutters *l*, *m*, *o*.

The center rod D, has a cord *x*, affixed to its rear end. This cord is carried a short distance toward the pointed end of the rods and thence over a pulley *y*, and has a weight *z*, hung to it, the object of the weight and cord being to force the center rod forward against the stick immediately after each clothes pin is severed from it. A weight *a′* is also hung to the rear end of the pattern lever, and for the purpose of keeping it down upon the bottom of the opening of the fork L.

A stick of wood being affixed by one end to the mandrel has its other end introduced into the bell mouth O, and against the reducing cutter P. This being done the mandrel is put in revolution, and the crank S, is turned so as to cause the carriage G, to advance toward the mandrel. The stick will pass through the bell mouth or orifice O, and its end will be carried in contact with the pointed end of the center rod D, and will next be met by the cutter *d*, and reduced by it or cut down for the required distance, to the shape required for the body part *e*, *f* of the clothes pin; the vertical fall and rise of the cutter being produced by the movements of the pattern lever, which are effected by the longitudinal retrogradation of the center rod D, and the consequent movement of its fork against the curved part of the pattern lever. As soon as the cutter *d*, has performed its office the cutters *l*, *m*, *o*, are brought up to the stick, and form the head of the pin, and separate the pin from the stick. The carriage G, being made to continue its forward movement, another pin may be made in a similar way, and so on until the whole stick has been cut up.

What I claim, as my invention, is—

The rotary mandrel, the cutter for reducing the stick to a cylindrical shape, the cutter for forming the body of the pin, the cutter, or cutters, for forming the head, the center rod D, its fork and pattern lever, the whole being applied to carriages, and made to operate together substantially in manner and for the purpose as above specified.

In testimony whereof, I have hereto set my signature this twenty first day of February A. D. 1849.

ASA GREENWOOD.

Witnesses:

ELIJAH BOYDEN,

WILLIAM BOYDEN.