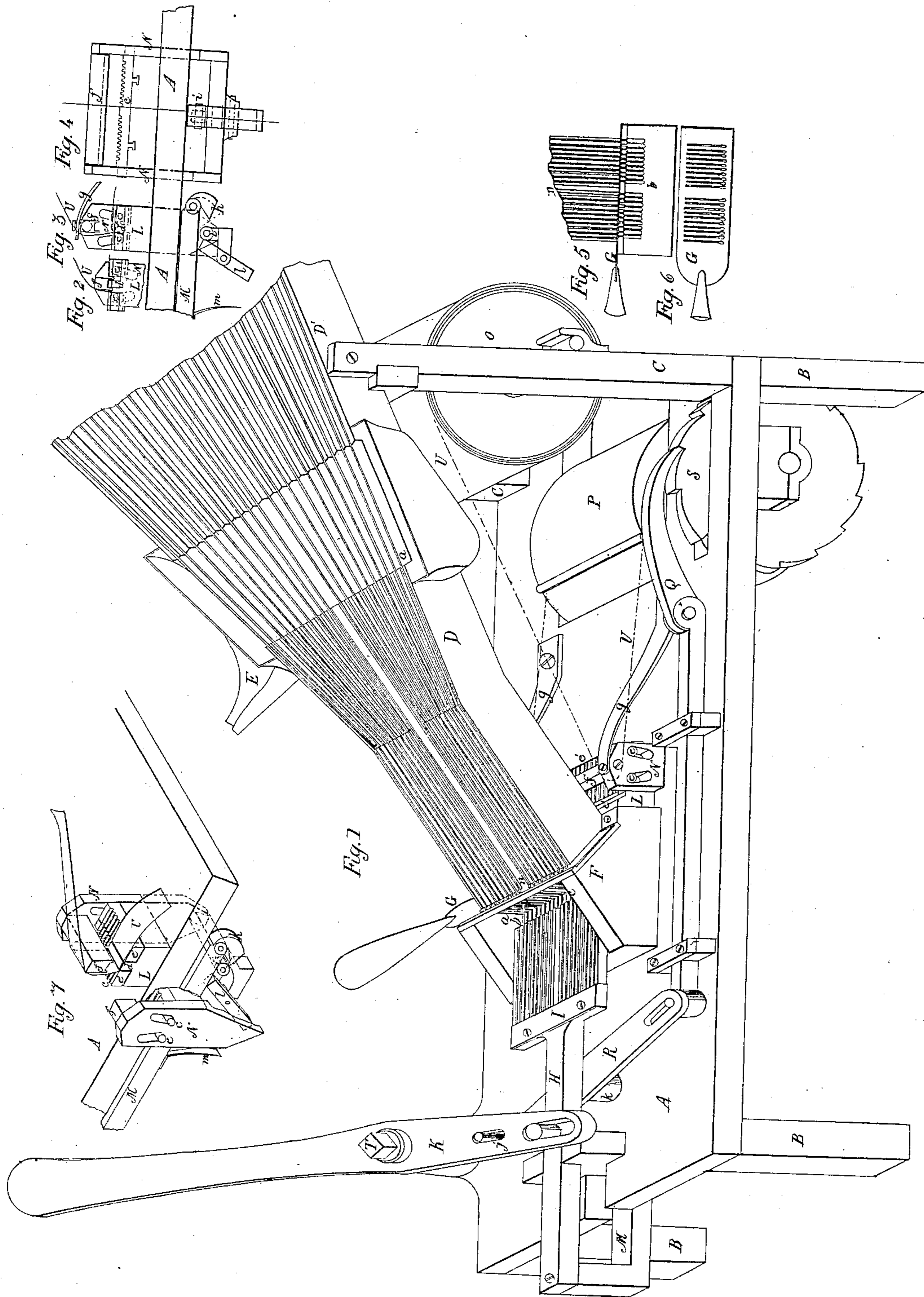


C. O. CROSBY.  
MACHINE FOR STICKING PINS.

No. 10,181.

Patented Nov. 1, 1853.



# UNITED STATES PATENT OFFICE.

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## MACHINE FOR STICKING PINS.

Specification of Letters Patent No. 10,181, dated November 1, 1853.

*To all whom it may concern:*

Be it known that I, CHAUNCEY O. CROSBY, of the city and county of New Haven, in the State of Connecticut, have invented a new and useful Improvement in Machinery for Sticking Pins into Paper; 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 apparatus, showing the channel, spaces, levers, cylinders, &c. Fig. 2, is a plan view of a section of the crimping and clamping apparatus, showing the paper as being crimped. Fig. 3, is a plan view of the same, showing the paper as crimped and clamped, and the situation of the parts while the pins are being stuck through the crimps. Fig. 4, is a plan view of a cross section of the grooves into which the pins are distributed preparatory to sticking them into the paper. Fig. 5, is a plan view of a cross section of the lower end of the straight inclined channels, showing the edge of the sliding plate, (G, Fig. 1,) and of the spaces below it through which the pins fall into the horizontal grooves, ready to be forced into the crimped and clamped paper. Fig. 6, is a plan view of the sliding plate, (G, Fig. 1,) showing the slots through which the pins fall into the horizontal grooves. Fig. 7, is a perspective view of a section of the central part of the crimping and clamping apparatus, showing the paper as clamped ready for inserting the pins.

My improvement consists in the use of twenty, (or any other number,) of straight inclined conducting channels to arrange and conduct the pins, with a slotted plate, or slide, to receive them at the lower end of the channels, and convey them to an equal number of spaces in an inclined, or triangular, block through which they fall into horizontal grooves; and by an equal number of punches sliding in those grooves to force the pins into the crimped paper; and in crimping the paper by means of a bed, composed of a stationary center bar, and two movable side bars; and double folding blades, which descend into the spaces in the bed on both sides of the center bar of the bed and carry two folds of the paper down, (one on each side,) between the stationary and movable

bars of the bed, so as to crimp it in two folds; and, by the action of these double folding blades, in ascending, to bring the movable bars of the bed toward the center, or stationary, bar, so as to clamp the folds of the paper, and hold them ready for sticking the pins; and by the same operation of the lever by which the pins are forced into the folds of the crimped paper, and the punches drawn back, the paper will be crimped, clamped, the pins stuck and the paper carried away and rolled up on the cylinder.

I make the frame of the machine of a bed plate A, Fig. 1, and posts, B, B, B, &c., and two back standards, C, C, to support the back end of the series of straight inclined channels, D, D', Fig. 1. I make each of the inclined channels of two plates of metal, or other suitable material, as seen at D, D', Fig. 1, of a width somewhat greater than the length of the pins, and connect these plates at their lower edges by riveting, or otherwise securing them, with a narrow strip between them, a little thicker than the diameter of the barrels of the pin, so that the pins may move freely in the channels, while their heads are supported by the upper edges of the plates. The upper portion of these plates, as at D', I make a trifle broader than the remainder, and bend the upper edges outward, (laterally,) so that the pins may fall into them with the greater certainty as they pass from the hopper; for which reason the upper end of the series of channels is considerably broader than the lower end, which causes a lateral bend in the plates. At about half way down this series of channels, (as at *a*,) I fit in transverse partitions, between the channels, to stop the surplus pins, and allow them to pass off through a spout, E, Fig. 1. At the lower end of this series of channels, I fit upon the central part of the bed plate, (A,) a block or piece, of the shape or form shown at F, Fig. 1. I cut down the central part of this block, in front, perpendicularly to the bed plate, as shown at *b*, Figs. 1, and 5, and through the triangular piece thus formed I cut as many spaces as there are channels, (parallel with them,) but in such position that the open channels shall come between these spaces, as shown in cross section in Fig. 5. I cut these spaces, (*b*,) in the block, F, so low as to form horizontal grooves at both ends, beyond the triangular

part, as seen at *c*, Figs. 1, 4, and 7. Into these grooves the pins fall, and rest, preparatory to their being forced into the crimps of the paper. Between the lower end of the series of channels and this block, *F*, I fit a thin sliding plate, *G*, Figs. 1, and 5, (the form of which is shown in Fig. 6.) Through this sliding plate, (*G*,) I cut as many slots as there are channels, (and at the same distance,) of such size and shape as will allow the pins to pass freely through them, as shown in Fig. 6. I make a bar, *H*, Fig. 1, to the end of which I attach a piece, *I*, with as many punches as there are channels. These punches rest, and move, in the grooves, *c*, Fig. 1, and they are pushed forward, to force the pins through the folds of the paper by the lever, *K*, working on a fulcrum stud, *T*, Fig. 1.

I make the crimping apparatus, *L*, Figs. 1, 2, 3, and 7, of a bed piece, *L*, in the center of which is a stationary, or fixed bar, *d*, Figs. 2, 3, and 7, of the width desired between the two crimps, or folds, in the paper. And two movable bars, *e*, and *e'*, Figs. 1, 2, 3, and 7, (also *e'* and *e'*, Figs. 1, and 7,) which are moved from, or toward, the stationary bar by means of the inclined slots, shown at *e*, and *e'*, Figs. 1, 2, 3, and 7; and, with double movable, folding, or crimping blades, *f*, Figs. 1, 2, 3, 4, and 7. These double folding blades are elevated by springs, *g*, and *g*, Fig. 1, (and *g*, Fig. 3,) and they are depressed, or forced down, by means of an inclined plane, *h*, Figs. 3, and 7, jointed to the inner end of the bar, *M*, Figs. 1, 3, and 7, which is worked by the lever, *K*, Fig. 1, as it is attached to the bar, *H*. This inclined plane, *h*, when the bars *H*, and *M*, are forced inward acts upon the friction roller, *i*, Figs. 3, and 7, which is connected with the double folding blades, *f*, by the side plates, *N*, and *N*, Figs. 4, 7, (*N*, Figs. 1, 2, and 3,) and the inclined plane, *h*, when returning, by means of the joint, follows the bar, *M*, in a straight line, so as not to depress the double folding blades, *f*, (which are then held up by the springs, *g*, and *g*). In connection with this inclined plane, *h*, and to limit the extent of the motion of the bar, *M*, I insert a short lever, *l*, Figs. 3, and 7, the upper end of which will be thrown into the small notch, at *M*, Fig. 3, by the lower end coming in contact with the spring, *m*, Figs. 3 and 7.

I roll the paper, *N*, Figs. 1, 2, 3, and 7, on a cylinder, *O*, at the back end of the frame, and carry it over the double folding, or crimping, blades, *f*, down onto the crimping bed, *L*, and back to the cylinder, *P*, where it will be wound up, (after the pins are stuck,) by the jointed dog, or hand, *Q*, which is worked by the lever, *R*, connected with the lever, *K*, by the stud, *j*, in its outer end, as it works on a fulcrum stud, at *k*, Fig. 1.

Having constructed and arranged the several parts of my machine, as before described, I pour the pins into a suitable hopper, or shoe, properly attached to the upper end of the series of channels *D*, *D'*, Fig. 1, when by their own gravity they will descend, (arranged with their heads resting at the upper edges of the channel plates, and their points hanging downward between the two side plates,) until they arrive at the lower end of the channels, where they will fall into the slots in the sliding plate, *G*, Fig. 1, and rest upon the bars of the triangular block, *b*, Fig. 1, as seen at *n*, Fig. 1, and then, by moving the slide, *G*, in, (in the direction indicated by the dart,) until the slots correspond with the spaces in the triangular part, (*b*,) of the block, *F*, the pins will fall through the spaces, shown at *b*, Figs. 1, and 5, and rest in the horizontal grooves *c*, (Figs. 1, 4, and 7,) when by the operation of the lever, *K*, the bar, *H*, with its punches, *L*, (working in the grooves, *c*,) the pins may be forced into the clamped folds of the paper, as seen in Fig. 3. The paper is then advanced by the dog, or hand, *Q*, Fig. 1, acting on the ratch wheel *S*, of the cylinder, *P*, (by bringing back the lever, *K*, which works the lever, *R*,) so as to bring a new portion of the paper to the crimper. This ratch wheel, *S*, is made with its teeth at different distances asunder so as to suit the proportions of paper required in rolling up the papers of pins, for sale, &c.

When the bar, *M*, is forced in by the lever, *K*, by the action of the inclined plane, *h*, on the friction roller, *i*, the double folding, or crimping, blades are brought down, by which means the inclined slots, *e*, and *e'*, in the side plates, *N*, and *N*, Figs. 1, 2, 3, and 7, cause the movable bars, *e'* and *e'*, Figs. 1 and 7, of the bed piece of the crimping apparatus, to recede from the center, or stationary, bar, *d*, Figs. 2, 3, and 7, so that the descending blades, *f*, carry the paper down to the position shown in Fig. 2. And as the inclined plane, *h*, passes the friction roller, *i*, Figs. 3, and 7, the spring, *g*, and *g*, Fig. 1, elevate the double folding blades, *f*, and the inclined slots, at *e*, and *e'*, force the movable bars, *e'*, and *e'*, toward the center bar, *d*, and clamp the two folds, one against each side of the center bar, *d*, (which keeps the two folds apart,) as shown at *e'*, and *e'*, Fig. 7, ready to receive the pins, and so on.

I do not claim the channels; nor grooves; nor the punches working in grooves; nor the use of clamping bars to serve also as crimping bars; because these have all been used before, or claimed in my former application, but

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

1. The combination of the punches, *I*, (working in horizontal grooves, *c*,) with the

slide, G, and the straight inclined channels, D, D', when arranged, and combined, substantially, as herein set forth.

2. I also claim the combination of the punches, I, with the double folding blades, when these are combined with the movable, and stationary, clamping bars, and the whole is constructed, and combined, substantially, as herein described.

10 3. I also claim the method of crimping the paper by means of folding blades working between stationary and moving clamping bars, when those clamping bars serve as a part of the crimping apparatus, when con-

structed, and operating, substantially as 15 herein described.

4. I also claim the bars, (b,) (forming the side guides to the spaces,) to guide the pins while falling down from the separator to the horizontal grooves, (c,) in combina- 20 tion with the grooves, (c,) and punches (I,) when they are constructed, combined, and arranged, and used for the purposes, substantially, as herein described.

C. O. CROSBY.

Witnesses:

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JAMES M. ROSS.