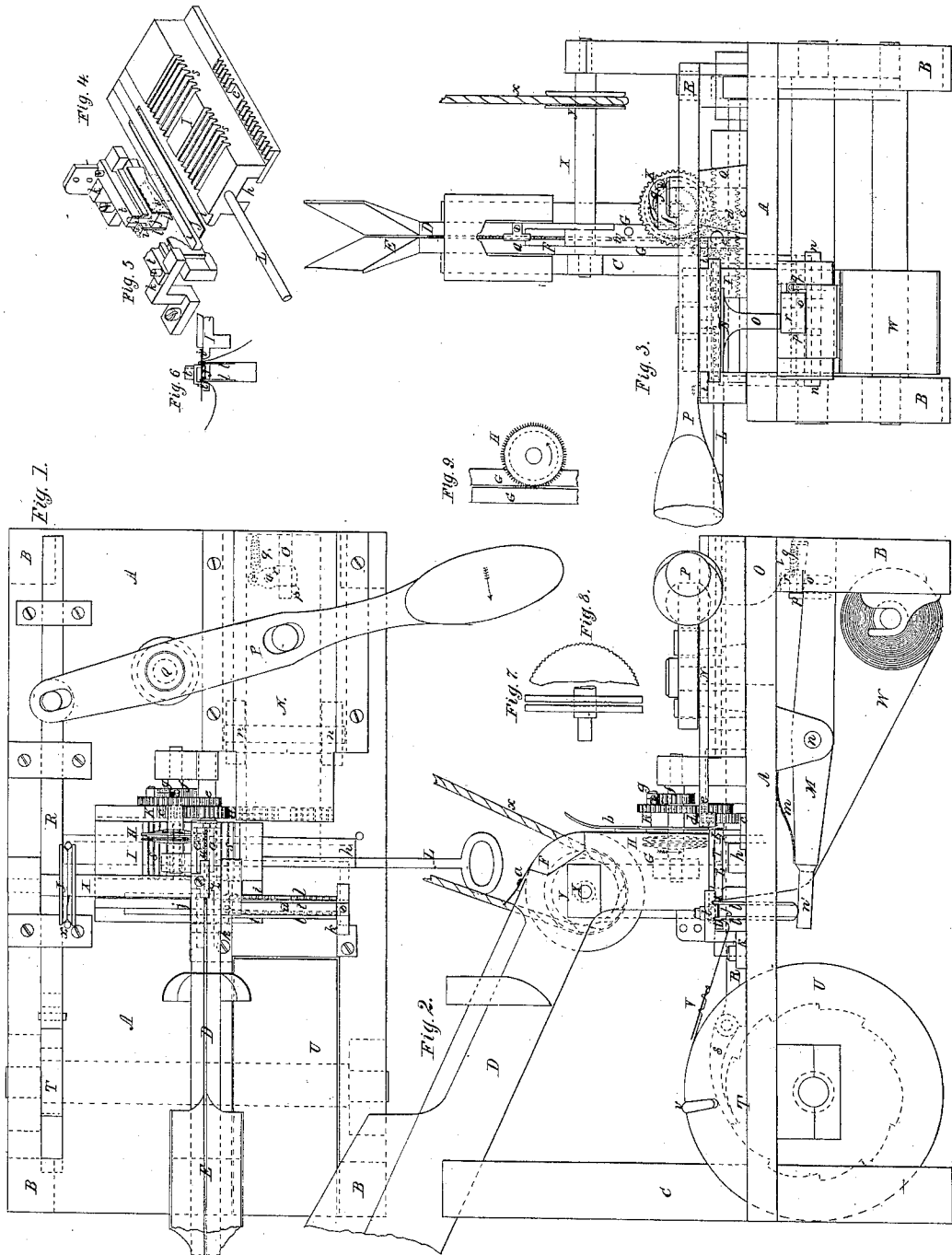


C. O. CROSBY.
MACHINE FOR STICKING PINS.

No. 10,182.

Patented Nov. 1, 1853.



UNITED STATES PATENT OFFICE.

C. O. CROSBY, OF NEW HAVEN, CONNECTICUT.

MACHINE FOR STICKING PINS.

Specification of Letters Patent No. 10,182, 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 on Paper; and I do hereby declare that the following is a full, clear, and exact description of the construction, character, 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 bird's-eye view of the whole apparatus within lines, or dots. Fig. 2, is a plan or horizontal view of the same, taken from the front or working side of the machine. Fig. 3, is a plan or horizontal, view of the same, taken from the right-hand end of the machine. Fig. 4, is a perspective view of the sliding bed and the parts attached to it, &c. Fig. 5, is a perspective view of a section of the crimping apparatus. Fig. 6, is a plan view of a cross section of the same. Fig. 7, is a plan or edge view of the split or connecting wheel. Fig. 8, is an inside view of a part of the same. Fig. 9, is a plan view of the separating wheel, &c.

My improvement consists in the use of a split wheel, (with countersinks in the inner edges of the peripheries suited to the size of the heads of the pins,) to connect the lower end of the straight inclined conducting channel with the upright or vertical side guides, for the purpose of conveying the pins from one to the other, and to prevent the pins from binding or choking up the passage while changing from a vertical to a horizontal position, and in the use of a wheel with a double periphery, (by being grooved in the middle,) armed with two rows of teeth to separate the pins while between the vertical side guides, and allow each pin, separately, to fall, at the proper time into the grooves in the sliding bed at the lower end of the passage between the vertical side guides as the pins are being carried out by the sliding bed to the place of being stuck, and in the use of an apparatus composed of two side bars and a thin tongue attached together at the back end, resembling the jaws and tongue of a jews'-harp, while slides transversely across the bed plate of the machine above the paper to hold the paper down while the double folding blades are ascending to crimp it, and in the use of double folding blades to force

the poles of the paper up between the tongue and the jaw on each side, so as to form two folds or crimps, to receive the pins, while both the jaws and tongue and the double folding blades may be readily withdrawn after the pins are stuck, to allow the paper to be advanced, and in the use of top guides to steady the crimps or folds of the paper while the pins are being stuck after the double folding blades have descended.

I make the frame of a bed plate, A, A, posts, B, B, B, and a standard, C, to support the straight inclined conducting channel, D, all as shown in Figs. 1, 2, and 3. I make the straight inclined conducting channel, D, of wood or any other suitable material, of two pieces of sufficient depth for the length of the pins. I bevel the upper part inward, or concave, (like a trough,) that the pins may the more readily fall into the space, C. Figs. 1, and 3, between the parts or side plates, on which the heads of the pins rest or are sustained, and the lower part convex, to throw off the surplus pins. At the lower end of this conducting channel I place a split wheel, F. Figs. 1, 2, and 3, of a diameter more than twice the length of the pins, (so that the pins may be received into it without obstruction.) In the periphery of this wheel I make counter-sinks or spaces, of a suitable size and shape to receive and sustain the heads of the pins as the wheel revolves, so as to enable this wheel not only to carry the pins forward and downward, but also to change their position from vertical to horizontal, and near the top and in front I place shields, as shown at *a* and *b*, Fig. 2, to steady the heads of the pins in these counter-sinks or spaces. At the lower part of this wheel, F, and partially embracing it I fit vertical side guides, G, G. Figs. 2, 3, and 9, through the space between which the pins are carried down by the separating wheel, H. Figs. 1, 2, and 9, to the grooves in the sliding bed, I, Figs. 1, 2, and 4, to be carried in front of the crimping apparatus preparatory to their being stuck. I make the separating wheel, H, Figs. 1, 2, and 9, of steel or any other suitable material, with a groove turned in the middle of its periphery, (or I use two disks to compose the wheel,) and cut or form on the edges of these two peripheries teeth to enter between the pin barrel, (near the heads,) to sustain, separate, and carry them downward between the vertical side guides,

(the front side guide forming a stationary shield to keep the pin between the teeth,) and drop them at the proper intervals into the V-shaped grooves in the sliding bed, I, Figs. 1, 2, 3, and 4. Or this separating wheel, H, may be made somewhat thicker and have the teeth cut straight across its periphery without the middle groove, if thought best in any case. This separating wheel, H, is revolved at the proper time by means of a rack, *c*, Figs. 1, 2, 3, and 4, attached to and moving with the sliding bed, I, working the spur wheel, *d*, Figs. 1, 2, and 3, the pinion of which, seen at *e*, works the spur wheel, K, which is on the same arbor with the separating wheel, H, as seen in Figs. 1 and 2, but only causes it to revolve in one direction by means of the ratchet wheel and ratchet, *f* and *g*, Figs. 1, 2, and 3, so that when the grooved sliding bed, I, is moving back preparatory to receiving the pins the spur wheel, K, revolves loose on the arbor and the separating wheel, H, remains at rest.

I make the sliding bed, I, Figs. 1, 2, 3, and 6, with twenty (or any other required number of) transverse V shaped grooves (shown distinctly in Fig. 4) to receive the pins as they are dropped from the teeth of the separating wheel, H, through the passage between the vertical side guides and convey them in front of the crimping apparatus. This grooved sliding bed, I, is moved backward and forward under the lower end of the vertical side guides G, G (below the separating wheel H) by means of the rod or handle, L, Figs. 1, 2, 3, and 4, and is guided by the station bar, *h*, Figs. 2 and 4. To this grooved sliding bed I attach the rack, *c*, on one side, and the jaws *i*, *i*, and tongue, *j*, on the other side, all as seen in Figs. 1, 2, 3, and 4, so that they will all be moved by the same operation.

I make the crimping apparatus of two bars, *i*, *i*, and a thin tongue, *j*, resembling the tongue and jaws of a jews'-harp, as shown distinctly in Fig. 4 and in an end view in Figs 1, 2, 5, and 6, the parts being attached together at the back end, as seen in Figs. 1, and 4, and it is attached to and moves with the sliding bed, I, and when they are drawn forward the jaws and tongue pass across above the paper and are held firmly down by the straps or clamps, *k*, *k*, Figs. 1, 2, and 5, under which they pass, and of a pair of double folding blades, *l*, *l*, Figs. 1, 2, 5, and 6, which are depressed by a spring, *m*, acting on the lever, M, as the folding blades are attached to the prongs or brackets of that lever, one of which is seen at *n'*, Fig. 2, and by this means are depressed to allow the jaws and tongue to pass over and across the paper preparatory to crimping it, and they are elevated or forced up to crimp the paper be-

tween the jaws and tongue (on each side of the tongue, as seen in Figs. 2, and 6) by means of the lever, M, Fig. 2, (working on it, fulcrum pin, *n*, Figs. 1, 2, and 3.) To the right hand end of this lever, M, I attach a block, or button, *r*, by a joint pin, *o*, on which it turns freely, and it is steadied in its position against a stud, *p*, by means of the spiral spring, *q*, all as indicated by dotted lines in Figs. 1, 2, and 3, and near the end of the slide N, Figs. 1, 2, and 3, and on its under side I secure a block, O, of a shape like that indicated by dotted lines in Fig. 2, so that when the slide, N, is moved forward by the lever, P, for the purpose of forcing the pins through the crimps of the paper the inclined surface of the block, O, passes over the button, *r*, and depresses that end of the lever, M, and thereby elevates the double folding blades, *l*, *l*, to crimp the paper, as shown in Fig. 6.

To the under side of the inner end of the slide, N, I attach teeth or punches, (of the V shape,) which when the slide N, is moved forward pass along in the transverse grooves, *s*, *s*, Figs. 1, and 6, in the sliding bed, I, to force the pins through the folds of the crimped paper.

Above and parallel with the tongue, *j*, I secure a shield, *t*, Figs. 1, 2, 3, 5, and 6, with the edges turned downward like ribs, as shown in cross section in Figs. 5, and 6, to steady and sustain the paper while the pins are being stuck, and a stud in the middle, as seen at *n*, Figs. 1, and 5, to steady the tongue, *j*, in the center while the paper is being crimped.

The back end of the lever, P, as it works on the fulcrum, Q, Figs. 1, and 2, works the bar, R, which by means of the jointed hand or dog, S, Fig. 2, acting in the ratchet wheel, T, revolves the cylinder, U, Figs. 1 and 2, to wind up the paper after the pins are stuck, as seen at V, Fig. 2.

Having thus constructed and arranged the several parts of my machine I wind the paper on a cylinder, at W, Figs. 2 and 3, and carry it up through the bed plate, A, A, over the edges of the double folding blades, *l*, *l*, and secure the end in the cylinder, U, by a key, seen at *v*, as seen in Fig. 2. I then pour the pins into a suitable hopper at the upper end of the conducting channel, D, to feed the pins in the usual way, (having a shield or spout to carry off the surplus pins in the usual way). The pins will pass down the conducting channel, as seen in Fig. 3, until they arrive at the shield, *a*, where they are received by the split connecting wheel F, (which is revolved by a band, *x*, and pulley, *y*, on its shaft, X; or by any other appropriate gearing,) which conveys the pins onward (changing their position from vertical to horizontal) and deposits them in spaces between the ver-

tical side guides, as seen in Fig. 3, when they will pass downward until they are stopped by the teeth of the separating wheel, H, which is ready to receive them. Having so placed the grooved sliding bed, I, that the first or back V shape groove will be under (or a little back of) the space, *w*, between the vertical side guides, G, G, Figs. 1 and 3, by means of the handle, L, I draw the sliding bed I forward, when the rack, *c*, will give motion to the spur wheel, *d*, its pinion, *e*, and the spur wheel, K, which last being on the same arbor will revolve the separating wheel, H, over in the direction indicated by the dart, when its teeth will receive and separate the pins and drop them into the grooves in the sliding bed, I, which will convey them in front of the crimping apparatus preparatory to their being stuck, and then by moving the front end of the lever, B, in the direction indicated by the dart it will carry forward the slide, N, and cause the block, O, to pass onto the button, *r*, and by depressing that end of the lever, M, will elevate the double folding blades, *l*, *l*, and force two folds of the paper up between the jaws, *i*, *i*, one on each side of the tongue, *j*, as seen in Fig. 2, and also bring the folds or crimps against the ribs of the top guide or shield *t*, and by continuing to advance the lever, P, in the same direction the block, O, will be advanced until the recess or rabbet at *z*, will rest on the button, *r*, when the spring, *m*, will depress the double folding blades, *l*, *l*, sufficiently to allow the pins to pass through the folds or crimps between the folding blades *l*, *l*, and the top guide or shield, *t*, as shown in Fig. 6. This motion of the lever, P, will also carry the block, O, entirely over and beyond the button, *r*, when the spring, *m*, will depress the double folding blades, *l*, *l*, leaving the paper sustained by the tongue, *j*, and jaws, *i*, *i*, by the pins being above them. I then, by means of the handle, L, push back the sliding bed, I, to its original position, which carries with it the jaws and tongue of the crimping apparatus and thus entirely relieves the paper and by moving the lever, P, back, or in the direction opposite to that indicated by the dart, the hand or dog, S, being jointed to the bar, R, working in the ratchet wheel T, will revolve the cylinder, U, and carry forward the paper with the pins stuck in its crimps, as shown

at V, Fig. 2, and bring up another portion of the paper to be crimped, and as the back end of the block, O, comes against the button *r* the button will turn on its fulcrum pin, *o*, and allow the slide, N, to return to its former position without affecting the lever, M, and the button, *r*, will be thrown back to its former position by the spiral spring, *q*, when the machine will be ready for another operation, as before described.

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

1. The use of a split wheel, (F,) to connect the lower end of the straight inclined conducting channel, (D,) with the upper end of the vertical side guides, G, G, to convey the pins from the former to the latter, while it changes the position of the pins from vertical to horizontal, as herein described, whether with, or without, the counter-sinks in the inner edges of the peripheries.

2. I also claim the use of a separating wheel, (H,) with teeth on its periphery, to sustain the column of pins, separate them, and drop them separately into the grooves in the sliding bed, (I,) at the proper time, by its revolution, as herein described, whether the wheel be made of two disks, or with the periphery grooved out, or the periphery be single and the teeth cut directly across it.

3. I also claim the method of crimping the paper by the use of jaws (*i i*) with a tongue, (*j*), between them to slide across the paper in such a manner that the paper may be crimped by double folding blades, (*l*, *l*), forcing the two folds of the paper through the space between the tongue and the jaw on each side, so that the pins may be stuck through the crimps, over the upper edges of the folding blades while the tongue will be between the pins and the paper, and so that both, the bars and tongue, and the double folding blades, may be readily withdrawn to release the paper, and this whether the double folding blades are below or above the jaws and tongue; when they are constructed and used, and made to operate, substantially, as herein described.

C. O. CROSBY:

Witnesses:

S. RANSOM,
R. FITZGERALD.