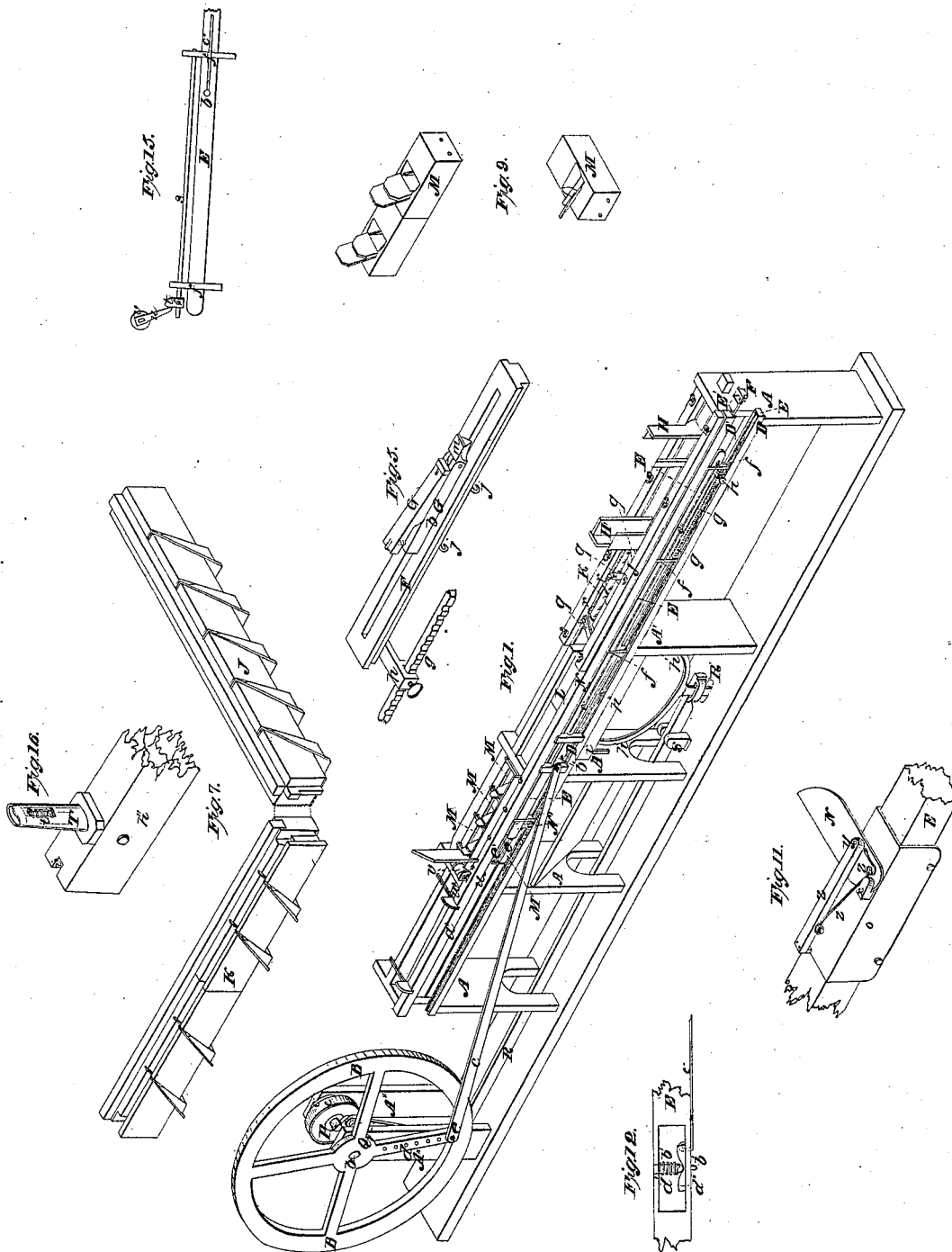


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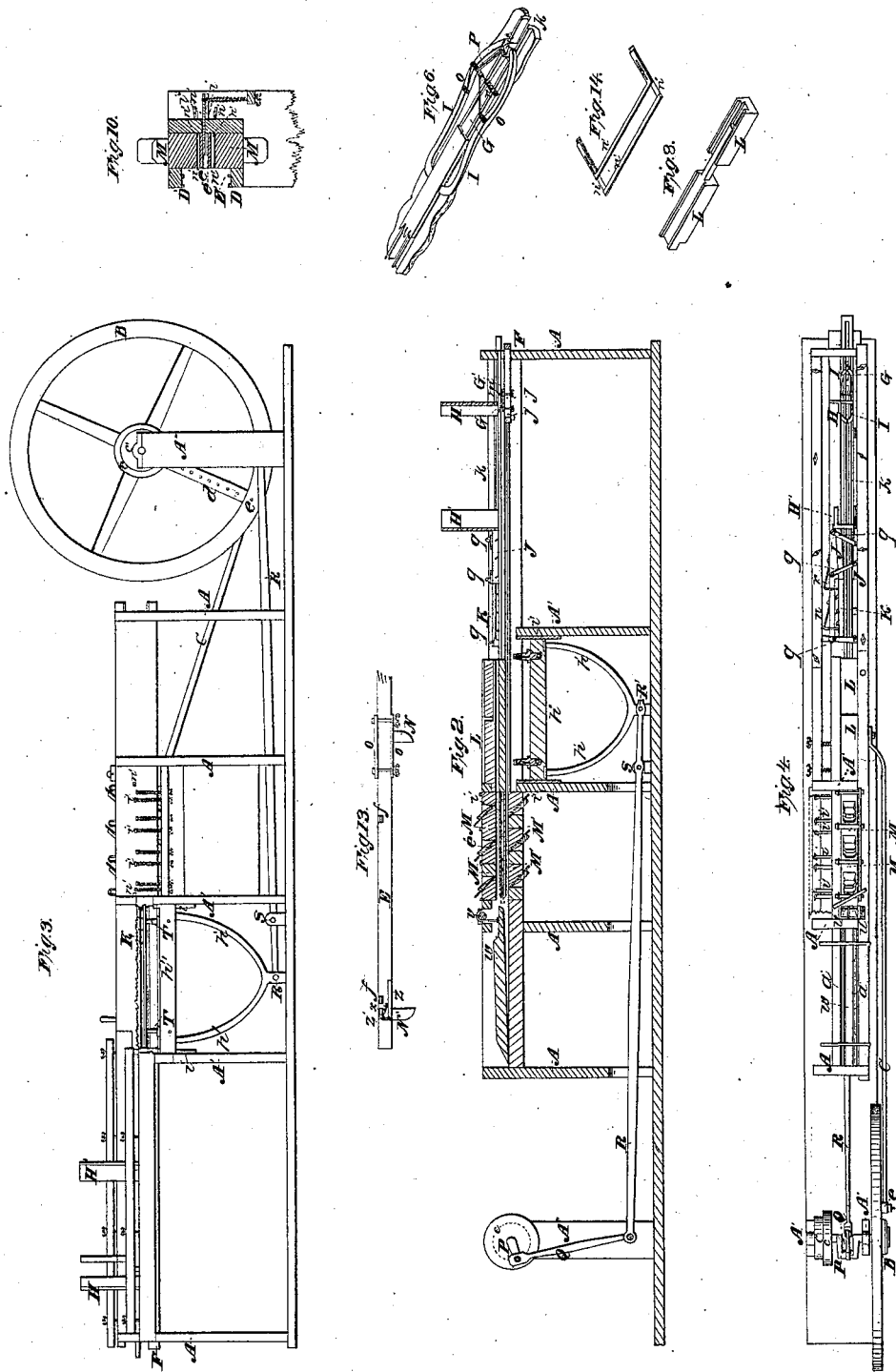


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UNITED STATES PATENT OFFICE.

LÖTT MCGILL, OF PHILADELPHIA, PENNSYLVANIA.

MACHINERY FOR PLANING SLATS.

Specification of Letters Patent No. 4,955, dated February 5, 1847; Antedated November 27, 1846.

To all whom it may concern:

Be it known that I, LOTT MCGILL, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Machine for Dressing the Sides, Rounding the Edges, and Punching the Holes in the Slats for Venetian Blinds; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

Figure 1, is a perspective view of my improved slat machine. Fig. 2, is a vertical longitudinal section. Fig. 3, is a rear elevation, with part of the frame work broken away, for the purpose of showing parts that would otherwise be hidden. Fig. 4, is a top view; all the other figures represent parts in detail.

Where like parts occur, they are designated by the same letters of reference.

A, A, A, A', A', are the standards that support the body of the machine; A'', A'', are the standards that support the bearings of the shaft *b*, upon which the pulleys *c*, *c'*, and the fly wheel B, are secured. The arm *d*, of the fly wheel is perforated with holes by which to regulate the stroke of the pitman C; one end of which is connected to it by the crank pin *e*, and the other end to the sliding frame D, in a similar manner. The sliding frame D, is composed of two vertical posts united at their centers by a horizontal bar, and traverses the machine longitudinally on the ways or tongues on the beams D', D', fitting grooves in the upper and lower ends of the vertical posts of the same. The sliding frame D, is connected to the horizontal driving bar E, as follows: The driving bar E, has a mortise cut into its upper surface, immediately behind the sliding frame, which descends nearly to the under side of the bar; a pin *b'*, has its ends secured in the sides of this mortise, its front end *b''*, projecting through the front side of the driving bar, and into the horizontal piece of the sliding frame D, thereby connecting them; the connecting pin *b''*, is held in that position by the spiral spring *d'*. The pin *b''* is drawn in by a sliding detach-er *d''*, operated by the rod *c''*; it is in the form of two truncated wedges united at their apex, with one side reduced to a flat surface; the straight side of the detach-er *d''*, is placed against the front inner side of

the mortise in the driving bar E, the pin *b''*, passing through an oblong aperture in its center, and resting on a shoulder on the same. The sliding frame D, can be detached from the driving bar E, by moving the detach-er *d''*, in either direction—forward, or back—the thickest part of the detach-er pressing against the shoulder on the pin *b''*, and drawing in the same, (Fig. 12). The driving bar E, is secured to the center of vertical supporters *f*, *f*, *f'*, *f'*, having grooves on each end which receive and slide on tongues (E') on the horizontal beams D', D'. The two supporters *f'*, *f'*, have a rod *g*, connected to them; this rod has notches upon it to receive a set screw, which secures the jaws *h*, at any distance from either of the supporters *f'*, *f'*. The jaws *h*, are firmly attached to a sliding piece F, (Fig. 5) which works freely to and fro in the longitudinal grooves *o'*, (Fig. 2,) on the under-side of the machine. The sliding piece F, (Fig. 5,) has a vertical slot extending nearly from end to end through its center, through which slot pass the screw bolts *j*, *j*, (seen most distinctly in Fig. 2,) by which the driver G, G', is secured to it. This driver is made in three parts, G' being the part immediately connected with the sliding piece F, by means of the screw bolts *j*, *j*; upon the top of G', rests the driver proper G, working upon a joint pin *l*, its rear end being kept from resting on the upper surface of G', by a spiral spring. To the front end of G', is also attached by a joint pin, a wedge or tooth *m*, which when in position for acting, slants vertically, with its base against the front end of the driver G, (as seen in Fig. 6.)

H, H', are vertical guides for receiving the rough slat; they are adjustable for slats of any length, and are secured immediately over the opening *k*, (Fig. 2,) with a space between their lower ends and the ways each side of the opening *k*, for the slats to pass under them. The rear end of the driver G, and the wedge *m*, rise through the opening *k*, between the guides H, H', to a height above said opening equal to the thickness of a slat.

I, I, Fig. 6, are spring clamps lying on ways on the bed of the machine between the guides H, H', and on each side of the driver G; they are held together by means of the spring *n*. From a connecting spring joint on the upper side of the clamps, there rises

two inclined arms o, o ; to the upper ends of these arms there is connected by a spring joint the hook p , descending through the longitudinal opening k , to a short distance below the level of the upper surface of the part G' , of the driver. The object of this hook p , is to catch on a ledge on the upper side of the front end of the wedge m , when in the position referred to in Fig. 5, and to raise it to a vertical position as shown in Fig. 6.

J, J , Fig. 7, are the planes for trimming the edges of the slats and reducing them to a uniform width.

K , is a plane for rounding one edge of the slats, after they have been trimmed by J, J . q, q , Figs. 1 and 4, are clamps by which the planes are firmly held in place. r, r , are springs to press the planes K again the edges of the slats.

L , is a guard (represented in Fig. 8) to keep the slats from flying up after they have left the planes J, J , and K ; this guard has a groove on its under side to receive the slat, after it has been acted upon by the edging planes, through which it passes to the planes M , which dress its upper surface. The guard L , is in two equal parts united by a dove tailed tongue, which allows the guard to be extended to any desired length, (Fig. 8).

Attached to the driving bar E , there are two drivers N, N' , Figs. 1 and 13. These are so constructed that they lie horizontally at right angles with E , when acting on a slat and pushing it against the planes; and they fold in on the top and bottom of E , when its motion is reversed. The driver N , is connected to the driving bar E , by means of an adjustable casing O , as follows: The casing O , is composed of three sides, one placed on the top of E , and the other two embracing its sides; the two vertical sides of the casing are connected at their lower edges by screw bolts, passing under the driving bar E , which firmly secure the casing to the same. The driver N , is attached to the upper side of the casing O , by a spring joint, and folds in under the guard z ; y , is the joint pin on which the driver turns; z' , is a spring which throws it out to a position at right angles with the driving bar; the inner end of the driver strikes against the stop z , which retains it in a right angular position while acting on a slat. The projecting end of the driver is rounded from its front edge toward the rear. When the motion of the driving bar is reversed, the rear side of the driver N , strikes against the last slat placed in the machine, which folds it under the guard z , after passing this slat, the driver springs into its right angular position under the guard L , and by the return movement of the driving bar E , forces forward the slat to the planes M .

The driver N' , is connected immediately to the under side of the driving bar E , at its rear end; in the same manner that N , is connected to the adjustable case O (Fig. 13). A skid s , Fig. 15, is fastened to the vertical supporters f, f , at the rear end of the driving bar E ; this skid carries an adjustable cam t , which operates a lever u , on the shaft of the windlass v , thereby causing said windlass to raise the end of the drop guard w , (Figs. 1, 2 and 4) by means of a cord connecting them together. On each side of the drop guard w , are two side guards a', a' , Fig. 4, resting on projections on their edges on the bed of the machine; there is sufficient space between the lower edges of the side guards a', a' , and the bed pieces of the machine, to allow the driver N' , to pass between them (as shown in Fig. 1). In a line with this space are the faces of the planes M' , (Figs. 2 and 10) for dressing the under side of the slats. Between the faces of the planes M , and M' , and at a suitable distance from each to allow of the passage of a slat, are secured two steel plates e', e'' , for the purpose of keeping the slats close to the face of the bits. To these plates e', e'' , are firmly attached the arms or levers i', i' , Fig. 10, extending out at the rear side of the machine, which are elevated or depressed by means of springs and screws as represented in Fig. 3. Between the steel plates and the faces of the planes, and immediately in contact with the front and rear corner of the latter are thin bars of steel n', n' , Figs. 10 and 14, extending the whole length of the planes, one on each side of the bits or irons. These bars are to prevent the drivers N, N' , from touching the plane irons while forcing the slat between the plates e', e' , and the planes. The bars n', n' , are connected at each end by very thin plates n'', n'' , (Fig. 14); the ends of one of the bars n', n' , are permanently secured to the ends of the thin plates, in a position at right angles with them; the other bar n' , is secured by screws passing through slots in the transverse plates n'', n'' , so as to adjustable in its position to suit different widths of slats.

In the same line with the space under the guards a' , and the face of the plane M' , are the grooves o' , Figs. 2 and 3, in which the slat is driven by the driver N' , to be reduced to its ultimate width, and to have its other edge rounded by the planes K' , Fig. 3, after which the transverse oval holes are punched near each end of the slat as follows. On the shaft b , there is a crank P , from which descends a pitman Q , connected at its lower end by a joint pin to the end of a lever R , having its fulcrum at S ; from the end R' , of the lever rises the curved arms h', h' , having connected to their upper ends the horizontal piece h'' ; the horizontal piece h'' , has vertical grooves formed in each end

which receive the tongues i'' , i'' , on the standards A' , A' , on which it slides freely up and down. Near each end of the piece h'' , are secured in its upper side the vertical punches T , T , their cutting ends reaching nearly to the grooves o' . These punches are secured to the piece h'' , in any convenient manner, and are so formed that they shall make an oval hole transversely through the slats. The peculiar manner in which they are constructed is shown in Fig 16, in which T , is the punch, and h'' the piece to which it is secured; inside the punch is a follower j' , the upper surface of which is flush, or nearly so, with the cutting edge of the punch, and is kept in that position by means of a spiral spring around its stem in the body of the punch, as represented at t' . When the holes are punched in a slat, the followers are depressed, when the punches descend, the spiral springs forces up the followers and clears the punches of chips, thereby preventing their ever being choked.

The operation of my machine is as follows: Motion being communicated to the fly wheel by a band or otherwise, the pitman C , drives the driving bar E , toward the front end of the machine, and brings the driver G , and wedge m , by means of the slide F , between the guides H , H' , and between the spring clamps I , I ; the hook p , having at this time raised the wedge m , up through the opening k ;—a rough slot is dropped in between the vertical guides H , H' , and between the rear ends of the spring clamps I , I , and the motion of the driving bar E , toward the front or right-hand end of the machine continuing, the wedge m , is forced in between the front ends of the clamps I , causing their rear ends to grip the edges of the slat very firmly. The fly wheel having now made nearly a quarter of a revolution from the position represented in Figs. 1, and 3—the motion of the driving bar E , is reversed, and the slat is carried by the clamps I , I , to have its end just entered between the planes J ; the clamps being stopped in their progress by the spring joint on the ends of the arms o , o , coming in contact with the lower end of H' , and the motion of G , continuing, the wedge m , is withdrawn from between the clamps and falls into a horizontal position, while the point on the rear end of G , catches the slat and pushes it through the planes J , and K , and enters it under the guard L . The motion of the driving bar E , is now reversed and the driver G , is carried back between the guides

H , H' , and the clamps I , to repeat the operation of seizing another slat and pushing it through the planes J , and K ; while the same retrograde movement of E , brings the driver N , to take hold on the front end of the slat first placed in the machine, (which it does when the driver G , takes hold on the second slat,) pushing it through under the guard L , the planes M , and under the drop guard w —(the cam t , on the skid s , having given the windlass v , a turn by means of the lever u , and thereby raised the drop guard). The motion of the driving bar E , is now again changed and carried toward the front end of the machine, while the driver N , goes to bring another slat toward the rear end of the machine, the driver N' , catches the slat already under the drop guard w , and forces it over the face of the planes M' , and through the planes K' , over the punches T , (operated by the lever R , pitman Q , and crank P ,) when the holes are punched at the moment that the pitman C , is passing the center of its crank:—the slat is then pushed along and out at the end of the grooves o' , o' , where it drops from the machine between the standard A , A' ,—nearly under where it was placed in the machine. The slats being fed into the front end of the machine, are forced through to the rear end, then brought back to the front end and discharged; in their passage receiving a perfect finish on both sides, their edges rounded, and holes punched in them, substantially in the manner herein set forth.

Having thus fully described my improved machine for dressing the sides, rounding the edges, and punching the holes in slats for Venetian blinds, what I claim therein as new and desire to secure by Letters Patent, is—

The combination of the pitman C , the sliding frame D , the driving bar E , the spring clamps I ; the sliding piece F , and the drivers G , G' , connected to the same; the planes J , J , and K , the drivers N , N' , the planes M , M' , the steel plates e' , e'' , and guard bars n' , n'' , between the planes M , M' , the drop guards w , and a' , a' , the planes K' , and the punches T , T arranged and operating with each other and with the other parts of the machine respectively, substantially in the manner and for the purpose herein set forth.

LOTT MCGILL.

Witnesses:

JOHN THOMPSON,
WM. WILLIAMS.