C. H. DENISON.

Machine for Cutting Paper Collars and Cuffs.

No. 167,156. Patented Aug. 31, 1875.

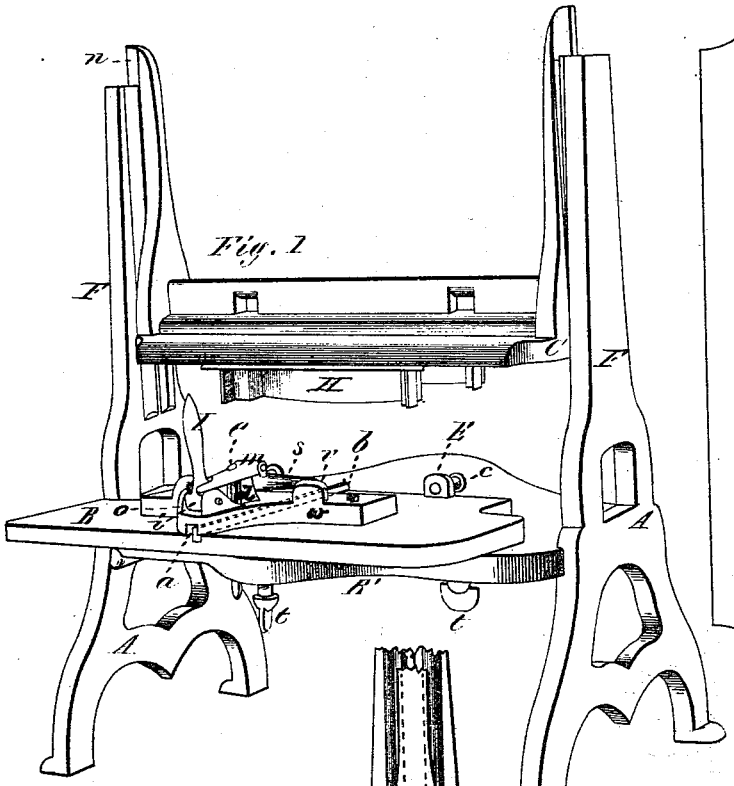

Fig. 1

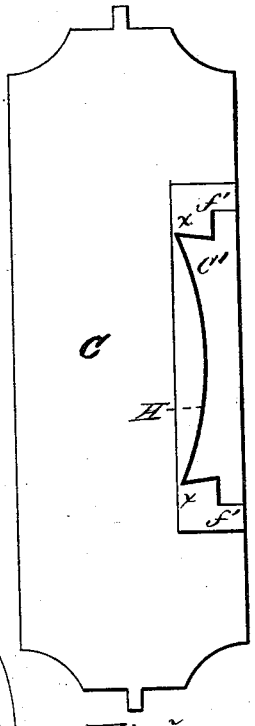

Fig. 3

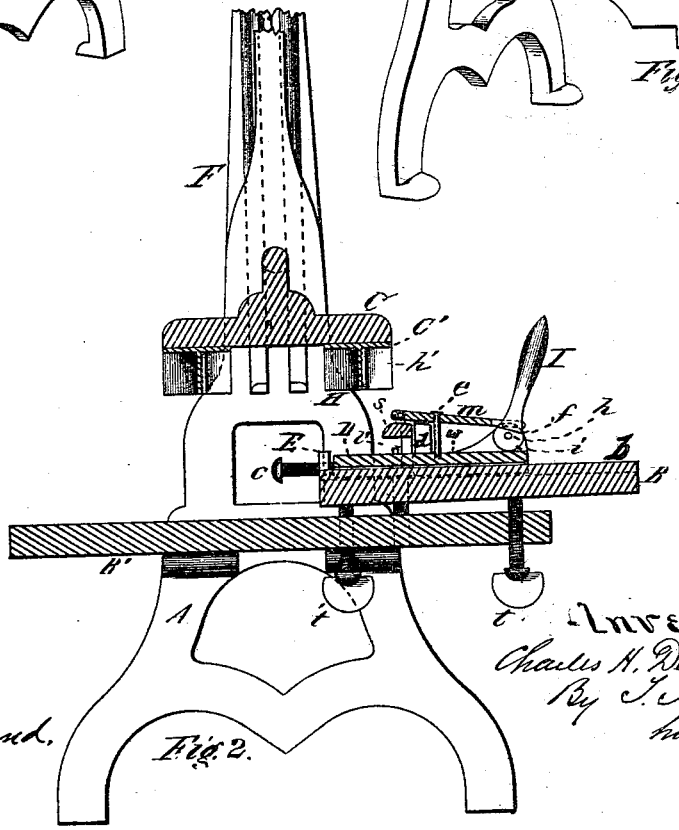

Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES H. DENISON, OF NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR CUTTING PAPER COLLARS AND CUFFS.

Specification forming part of Letters Patent No. **167,156**, dated August 31, 1875; application filed January 11, 1875.

To all whom it may concern:

Be it known that I, CHARLES HENRY DENISON, of the city, county, and State of New York, have made an invention of certain new and useful Improvements in Machines for Cutting Paper Collars; and that the following is a full, clear, and exact description and specification of the same.

My invention relates to machinery for the manufacture of paper collars; and it consists of a press having a platform and bed, combined with a sliding clamp, and arranged with stops and guides, and a removable platen arranged to have dies attached thereto, whereby a quantity of blanks may be clamped together, and all moved readily and quickly to the proper position, and a number of collars be cut therefrom simultaneously, the blanks being previously cut to the approximate size.

In order that the invention may be understood I have represented in the accompanying drawings, and will proceed to describe, a machine embodying them in the best form which I have thus far devised.

Figure 1 represents a perspective view of said machine. Fig. 2 represents a central transverse vertical section of the same. Fig. 3 represents a plan of the platen of the press reversed, and having one collar-die secured to it.

The said machine is composed mainly of a movable clamp to hold the pack of blanks during cutting, of a clamp-bed to sustain the said clamp, of a clamp-guide to direct the clamp to its proper position during the cutting, of stops to control the position of the clamp, and of a platen or plunger to which is attached a collar-knife, by means of which the pack of blanks held in the clamp is cut to the required form.

The clamp-bed B of said machine is, in this example, secured to the platform B′ of the machine, and is sustained by adjusting-screws *t*, which permit it to be adjusted parallel with the plane of the edge of the collar-die H. The clamp-guide consists of a raised rib, *b*, which extends transversely of the clamp-bed B, so as to guide the clamp when it is moved beneath the platen C of the press. The stops are in this example formed by lugs E projecting from the clamp-bed, and they are fitted with adjusting-screws *c*, which may be adjusted for the purpose of stopping the clamp in the exact required position beneath the collar-die. The clamp D is composed of a fixed jaw or base, *w*, which supports the pack of collar-blanks, and of a movable jaw, *s*, by which the pack is secured. The clamp-base is fitted to slide upon the clamp-bed *w*, and its under side is grooved, as at *a*, to fit the clamp-guide *b*. The clamp-base also is provided with two ears, *v*, which form a rest, to determine the position of the rear edges of the pack of collar-blanks. In case the collar-blanks have the button-holes formed in them a button-hole pin, *e*, is fitted to the clamp-base to act as a register to determine the longitudinal position of the blanks. The movable clamp-jaw *s* is pivoted to a lever-shank, *m*, which is pivoted to the clamp-base by the pivot *e*, and its rear end is operated by the cam *h*. This cam is pivoted to the clamp-base *w*, and is fitted with a handle, I, by which it may be rocked, so as to raise and depress the lever-shank resting upon it. When the handle is raised the end of the lever-shank rests upon the flat portion *f* of the cam; but when the handle is depressed the rounded portion *i* of the cam is forced beneath the lever-shank to move it and force the movable jaw toward the clamp-base, thus clamping the blanks between the two. A spring, *d*, composed, in this example, of a block of vulcanized rubber, is applied beneath the lever-shank, so as to raise the movable clamp-jaw whenever the cam is rocked to permit this movement. The collar-die has a combination of three cutting-edges, viz.: One, H, for the upper long edge of the collar, and one, *x f′ x f′*, for each end of the collar and collar-band, the space between the heels of the last two edges being open to permit the movable clamp-jaw *s* to pass in between the three cutting-edges. This collar-die also has a base-plate, C′, by which it is secured to a movable platen, C, which is raised and depressed by a pair of revolving eccentrics secured to a rotating shaft, which is constructed to revolve in boxes secured to the standards F F of the machine, and these eccentrics are connected with the platen by means of eccentric rods of the usual construction employed in cutting-machines. The platen is guided in

its upward and downward movement by means of guides secured to the standards F of the machine.

The machine is used in the following manner: The blanks from which the collars are to be made are cut previously from an extended sheet of collar paper, in such manner as to cause the least waste of the stock, and in doing this one long edge of each blank is cut of the finished form of the lower edge of the collar-band. These blanks may be embossed with stitching, and may have the button-holes punched in them. The clamp having been drawn back, and the handle I having been raised, a pack of these blanks is applied to the open clamp, with their finished long edges in contact with the ears *v v*, and their button-hole ends registered by the button-hole pin, or by some other longitudinal registering device in case the button-hole has not been punched in each collar-blank. The handle I is then depressed so as to compel the movable jaw to clamp the pack, and the clamp is shoved forward beneath the die H at the time the platen is in its raised position. The clamp is guided during this forward movement by the guide *b*, and its proper terminal position under the die is controlled by the stops E. The die being forced down by the descent of the platen, trims the collars to the finished form on three sides, and the movable clamp-jaw is permitted to hold the pack securely during this operation, by reason of the open space between the two short edges of the die. When the die is raised by the platen, the clamp is drawn back and opened, and the finished pack of collars is removed. The upper surface of the clamp-base should be faced with a thickness of pasteboard, so that the edges of the die may not be injured.

In order that the same machine may be employed to cut two packs of collars simultaneously, the platform B′ is made broad enough to hold two clamp-beds placed in reversed positions, each provided with its suitable clamp and other appurtenances. The platen C, also, is made broad enough to hold two collar-dies reversed right and left.

The construction and arrangement of the parts of the machine may be greatly varied without ceasing to embody the invention or material parts of it. Thus, for example, the clamp-bed may be in one piece with the platform B′, and, if deemed best, the collar-die may be made adjustable by means of screws. Two or more clamp-guides may be used in place of one, and they may be formed upon or secured to the clamp-base, while a guiding groove or grooves may be made in the clamp-bed. A screw or other compressing device may be substituted for the clamp-cam, and the adjusting-screws of the stops may be connected with the clamp-base, or the stops themselves may be secured to the movable platen of the machine. In this case they should have the form of plunger-rods, and their lower ends should be guided in slots cut through the platform of the machine. The clamp-guide, also, may have its inner end projected upward, so as to perform the duplex functions of guide and stop for the clamp; and on the other hand, the stops may be so constructed as to guide the clamp, as well as control its position.

It is evident that a circular or curved knife or die, having an opening at one side for the clamp, or a die having two edges, or of any form adapted to be used with the clamp, may be attached to the platen in place of the three-edged die described, inasmuch as the particular form or shape of the die does not form an essential part of the invention. The three-edged collar-die described is made to cut or shape collars of only one form, and it is self-evident that, to cut other forms, it is only necessary to detach the three-edged die from the platen and attach another of the desired form, adapted to be used with the clamp, or having one open side, to avoid cutting down upon the clamp.

Having thus described a machine embodying all my improvements, I claim as my invention—

1. The combination, substantially as before set forth, of the clamp, the clamp-bed, the clamp-guide, and platen C, arranged to have a cutting-die attached thereto, having one open side, to adapt it to be used with the clamp.

2. The combination, substantially as before set forth, of the clamp, the clamp-bed, the clamp-stops, and the platen C, arranged to have a cutting-die attached thereto, having one open side, to adapt it to be used with the clamp.

3. The combination, substantially as before et forth, of the clamp, the clamp-bed, the lamp-guide, the clamp-stops, and the platen C, arranged to have a cutting-die attached thereto, having one open side, to adapt it to be used with the clamp.

Witness my hand this 4th day of September, 1874.

CHARLES HENRY DENISON.

Witnesses:

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167,156