(No Model.)

H. WALLACE.

PERFORATING MACHINE.

No. 348,434. Patented Aug. 31, 1886.

Fig. 1.

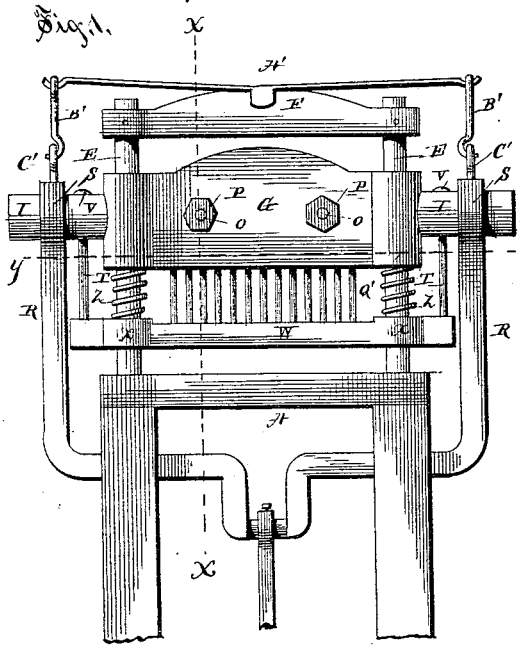


Fig. 2.

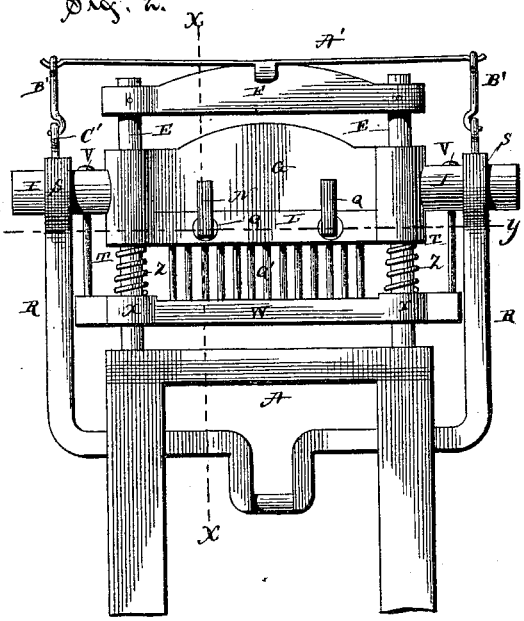


Fig. 3.

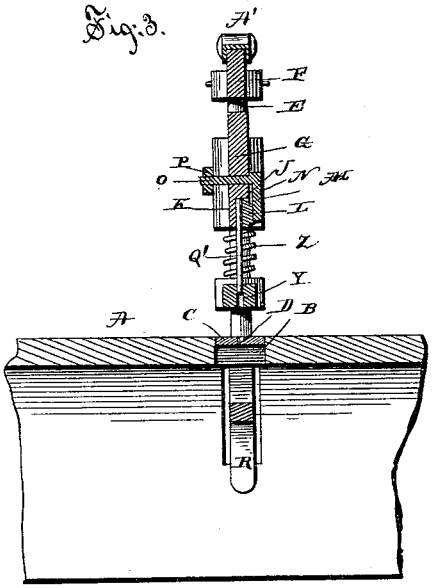
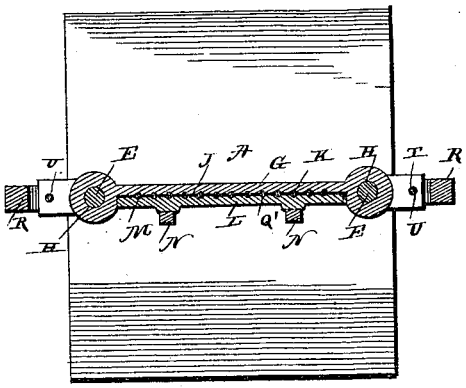


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

HAMILTON WALLACE, OF WHITE HAVEN, PENNSYLVANIA.

PERFORATING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 348,434, dated August 31, 1886.

Application filed April 26, 1886. Serial No. 200,176. (No model.)

To all whom it may concern:

Be it known that I, HAMILTON WALLACE, a citizen of the United States, and a resident of White Haven, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Perforating-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front view of my improved perforating-machine. Fig. 2 is a rear view of the same. Fig. 3 is a vertical sectional view on line *x x*, Figs. 1 and 2; and Fig. 4 is a horizontal sectional view of the machine on line *y y*, Figs. 1 and 2.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to machines for forming a series of perforations in sheets of paper; and it consists in the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

In the accompanying drawings, the letter A indicates the bed of the machine, and this bed is formed with a transverse groove or recess, B, into which the die-bar C, having a series of perforations, D, is secured. Two upright guide-rods, E E, project from the bed-plate at the ends of the die-bar, and are connected at their upper ends by a yoke, F, and the needle-frame G slides with two vertical perforations, H H, near its ends upon these guide-bars, having the ends I I projecting beyond the perforations. The lower portion of the rear side of the needle-frame is formed with a longitudinal recess, J, extending to the lower edge of the frame, and the vertical side of this recess is formed with a number of semi-cylindrical grooves, K, parallel to each other and registering with the perforations in the die-bar. A bar, L, having a corresponding series of vertical grooves, M, in its inner side, is held against the grooved side of the recess, filling the recess by means of the downwardly-bent ends N of bolts O, passing through the needle-frame and provided with tightening-nuts P upon their forward ends bearing against the forward side of the frame, the downwardly-bent ends of the bolts bearing, preferably, against lugs or projections Q upon the grooved bar. The needles Q′ are secured with their upper ends in the grooves, being clamped by the removable clamping-bar; and it will be seen that one or all of the needles may be removed and other needles inserted by loosening the clamping-bar and again drawing it against the frames by the nutted bolts. The upper ends of two parallel rods, R R, are secured by means of eyes S to the projecting ends of the needle-frame, and are connected at their lower ends and attached to a suitable treadle or similar means for drawing them downward, and the ends of the needle-frame are formed with two vertical perforations outside of the larger guide-perforations, the upper ends of rods T T passing through these perforations U U, and having heads V V at their upper ends. The lower ends of these rods are secured into the ends of a stripper-bar, W, which slides with two vertical perforations, X X, upon the vertical guide-rods, and this bar is formed with a series of vertical perforations, Y, through which the needles pass, the perforations registering with the perforations in the die-bar and in the needle-frame. Springs Z Z are wrapped around the guide-rods and bear with their upper ends against the needle-frame and with their lower ends against the stripper-bar, keeping the bar down from the frame, while the headed rods will prevent the stripper-rod from being forced too far down, the stripper-bar just covering the ends of the needles. A spring, A′, is secured at its middle to the middle of the yoke, and has links B′ B′ pivotally attached to its ends and hooked into eyes C′ C′ upon the treadle-rods, the spring serving to draw the said rods, and through them the needle-frame, upward. It will thus be seen that when one or more sheets of paper are placed upon the bed-plate under the stripper-bar and the treadle is depressed, depressing the needle-bar, the needles and the stripper-bar are forced down upon the paper, and when the frame is still more depressed the points of the needles will pass through the paper into the perforations in the die, the stripper-bar bearing against the paper and compressing the coiled springs

between it and the needle-frame. When the treadle is released and the frame ascends, the coiled springs will force the stripper-bar downward, while the needles are drawn up, causing the said bar to strip the paper from the needles.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a perforating-machine, the combination of a needle-frame having a longitudinal recess in one side extending to the lower edge of the frame, and formed with vertical semicylindrical grooves in its vertical side, a clamping-bar having registering grooves in its inner side and fitting in the recess, and bolts having downwardly-bent ends bearing against the outer side of the clamping-bar, and having their ends projecting through the frame and provided with nuts, as and for the purpose shown and set forth.

2. In a perforating-machine, the combination of a bed-plate having a die-bar inserted transversely in it provided with a series of perforations, and having two vertical guide-rods at the ends of the die-bar connected at their upper ends by a yoke, a needle-frame sliding with vertical guide-perforations near its ends upon the guide-rods, and having a series of vertical needles clamped in the lower edge registering with the perforations of the die-bar, treadle-rods pivotally secured to the ends of the needle-frame, and having a treadle at the lower ends, a spring secured at its middle to the middle of the yoke, and having links pivotally connected to its ends and to the upper ends of the treadle-rods, a stripper-bar having perforations fitting upon the lower ends of the needles, and having two upwardly-projecting headed rods sliding in vertical perforations in the ends of the frame, and springs coiled around the guide-rods and bearing against the needle-frame and the stripper-bar, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

HAMILTON WALLACE.

Witnesses:

IRA ARTANEOUS DRIGGS,

GEORGE WASHINGTON WALLEN.