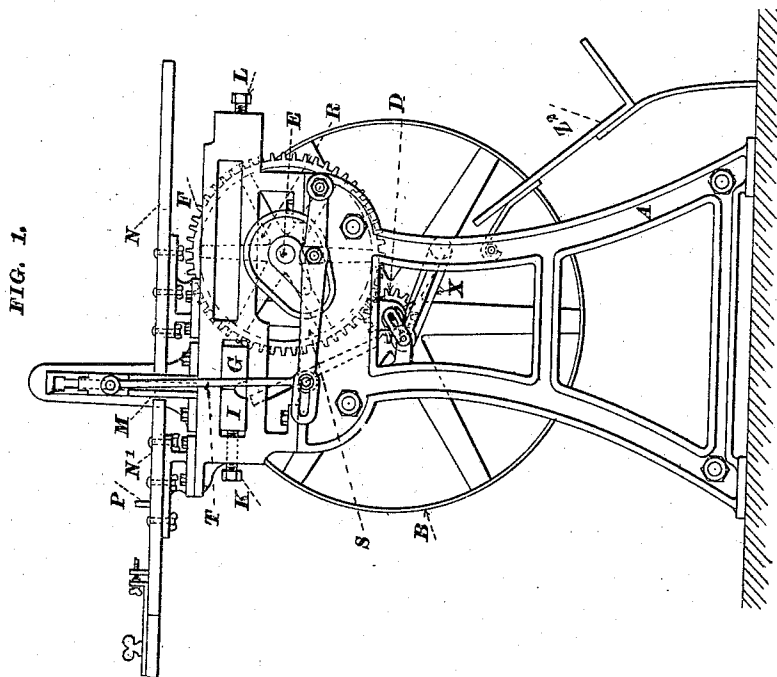
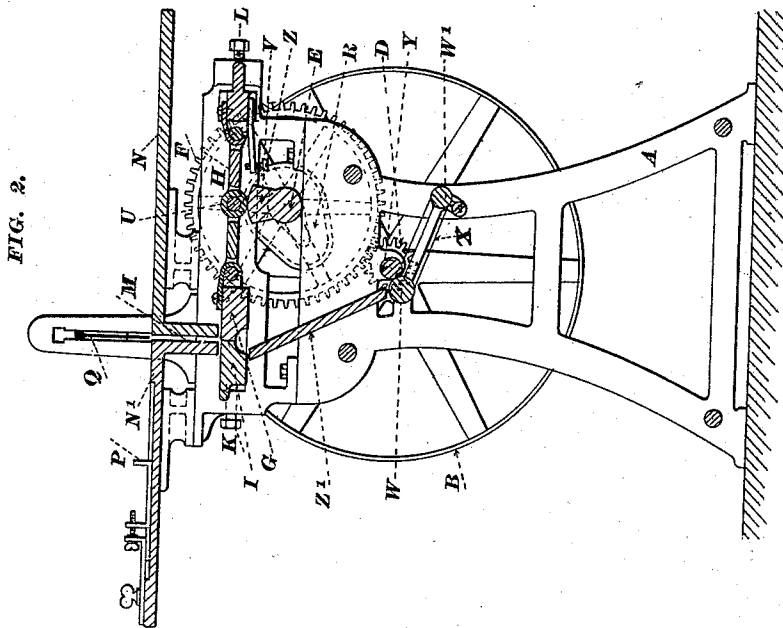


2 Sheets—Sheet 1.
W. BRAIDWOOD & L. FRANCIS.
PAPER-FOLDING MACHINE.
 Patented Feb. 22, 1876.

No. 173,761.



WITNESSES

H. J. Richardson
Vincent D. Bogart

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Lewis Francis
 INVENTORS

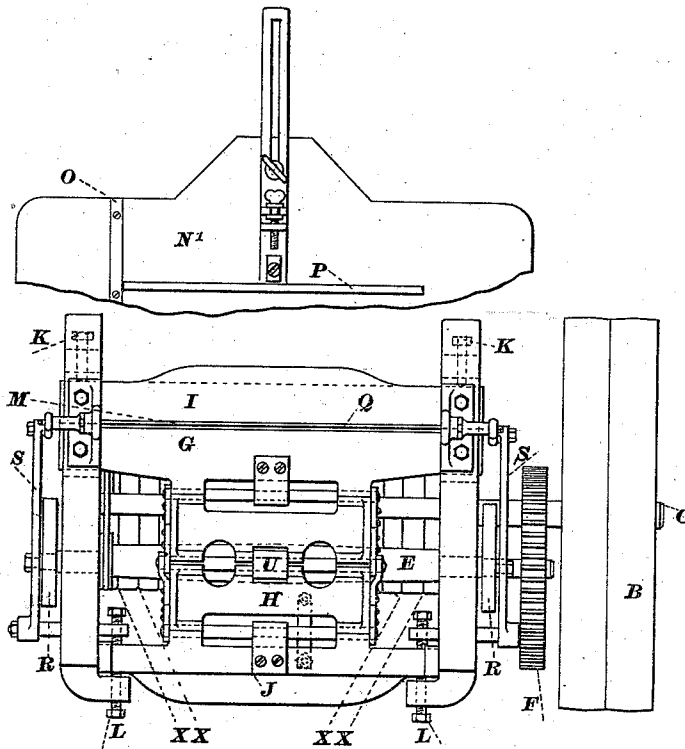
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FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM BRAIDWOOD, OF MOUNT VERNON, AND LEWIS FRANCIS, OF NEW YORK, N. Y.

IMPROVEMENT IN PAPER-FOLDING MACHINES.

Specification forming part of Letters Patent No. **173,761**, dated February 22, 1876; application filed October 11, 1875.

To all whom it may concern :

Be it known that we, WILLIAM BRAIDWOOD, of Mount Vernon, county of Westchester, State of New York, and LEWIS FRANCIS, of the city of New York, county of New York, and State of New York, have invented, made, and applied to use a Paper-Folding Machine, for use in paper-mills, blank-book binderies, &c., for folding paper in sections of several sheets, or in quires, for blank books or other work requiring sheets of paper to be folded in sections of several sheets or in quires, the same having never been done by machinery heretofore; and that the following is a clear and correct description of the same, reference being had to the accompanying drawings making part of this specification, and to the letters of reference thereon, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is a vertical section through the center of the machine. Fig. 3 is a ground view of the machine with the table removed, in order to show the interior of the machine.

In the drawings like parts of the machine are designated by the same letters of reference.

The nature of this invention is the construction, as more fully set forth, of a machine for the folding of paper in sections of several sheets, or in quires, for use in paper-mills, blank-book binderies, &c., the object of the invention being to lessen the cost of folding blank paper, and doing the work better and with more facility. Blank books folded by this machine will be neater and stronger, by reason of having the several sheets of the sections forced back closer in the fold than can be accomplished by hand-folding, and consequently the thread will lie closer in the fold and hold the leaves of the book more firmly, not allowing the leaves to get that endway motion, so destructive of blank books.

To folded paper sold in reams it will give a neater appearance, and the paper will not be apt to get soiled or crumpled as in folding by hand.

To enable those skilled in the arts to make and use our invention, we will now describe the construction and operation of the same.

A is the frame for supporting the operating

parts of the machine, composed of suitable side and cross pieces. B is the driving-pulley. C is the stud for driving-pulley B and pinion D. D is a pinion on stud C, driving gear-wheel F. E is the cam-shaft to operate the toggle H, and the lever S for raising the blade Q. F is the gear-wheel on cam-shaft E. G is the horizontally-moving pressure-jaw. H is the toggle to operate the horizontally-moving pressure-jaw G. I is the opposite or stationary pressure-jaw, held by set-screws K K, which set-screws are used to regulate the distance between the pressure-jaws, according to the thickness of the section of paper to be folded. J is the back-piece, for holding one end of the toggle H, with proper set-screws L L, which set-screws are used to regulate the distance between the pressure-jaws, according to the thickness of the section of paper to be folded. K K are set-screws for pressure-jaw I. L L are set-screws attached to back-piece J for regulating pressure-jaw G. M is the open guideway leading down from the feed-table N N' to the pressure-jaws G and I. The object of this guideway is to hold in an upright position the two ends of the sheets which are to be folded, so as to insure their falling or passing through the pressure-jaws, after they have received the pressure, to the receiving-rollers W and Y, to which rollers they are guided by the drop-board Z¹. N N' is the feed-table, divided into two parts. O is the side gage to feed the paper to. P is the movable back-gage to feed the paper to. Q is a vertically-moving blade, intended to strike the paper just where it is to be folded, and carry it through the open guideway M to the pressure-jaws G and I to receive the pressure, said blade leaving the paper immediately before the pressure comes on. R R are the cams to operate the knife. S S are levers operated by the cams R R and connected at one end to the connecting-rods T. T are rods connecting the levers S S to the blade Q. U is a roller in the center of the toggle H. V is a cam on shaft E to operate the toggle H. W W' are rollers below the pressure-jaws G and I, which rollers are driven by a belt from the cam-shaft E. X X are tapes passing round the rollers W and W' to carry the paper to the drop-box Z².

Y is a roller revolved by contact with roller W. Z is a set-screw under toggle H to regulate the distance the pressure-jaws G and I shall open. Z¹ is the drop-board for guiding the paper to the rollers W and Y. Z² is the drop-box for receiving the paper after it has been folded.

The description of the working of the machine is as follows: The sheet or sheets of paper are fed onto a table to a side and end guide, to put the sheet in position. The blade is brought down onto the sheet, to cause the folds, by means of the cams R R, the levers S S, and the connecting-rods T, and the paper is forced by the blade through the guideway M, to and between the pressure-jaws G and I, where it dwells a sufficient time to receive the pressure. The toggle H is then straightened and the pressure brought to bear on the paper on the edge of the fold.

The toggle is operated by a cam, V, on the shaft E, and a roller, U, in center of the toggle. Immediately before the pressure is brought to

bear on the paper the blade is lifted up from between the pressure-jaws by means of the cams R R. The pressure ceases by the revolving of the cam V, and the paper, having received the pressure, falls down by its own weight to the receiving-rollers W and Y, and is carried by the tapes X X to the receiving or drop box Z².

What we claim as new, and wish to secure by Letters Patent, is as follows:

1. The vertically-moving blade in combination with toggle-joint, horizontally-moving pressure-jaws, and slotted guideway.

2. The delivery or tape rollers in combination with slotted guideway and pressure-jaws, all substantially as and for the purposes set forth.

WM. BRAIDWOOD.
LEWIS FRANCIS.

In presence of—

VINCENT D. BOGART,
H. J. RICHARDSON.