

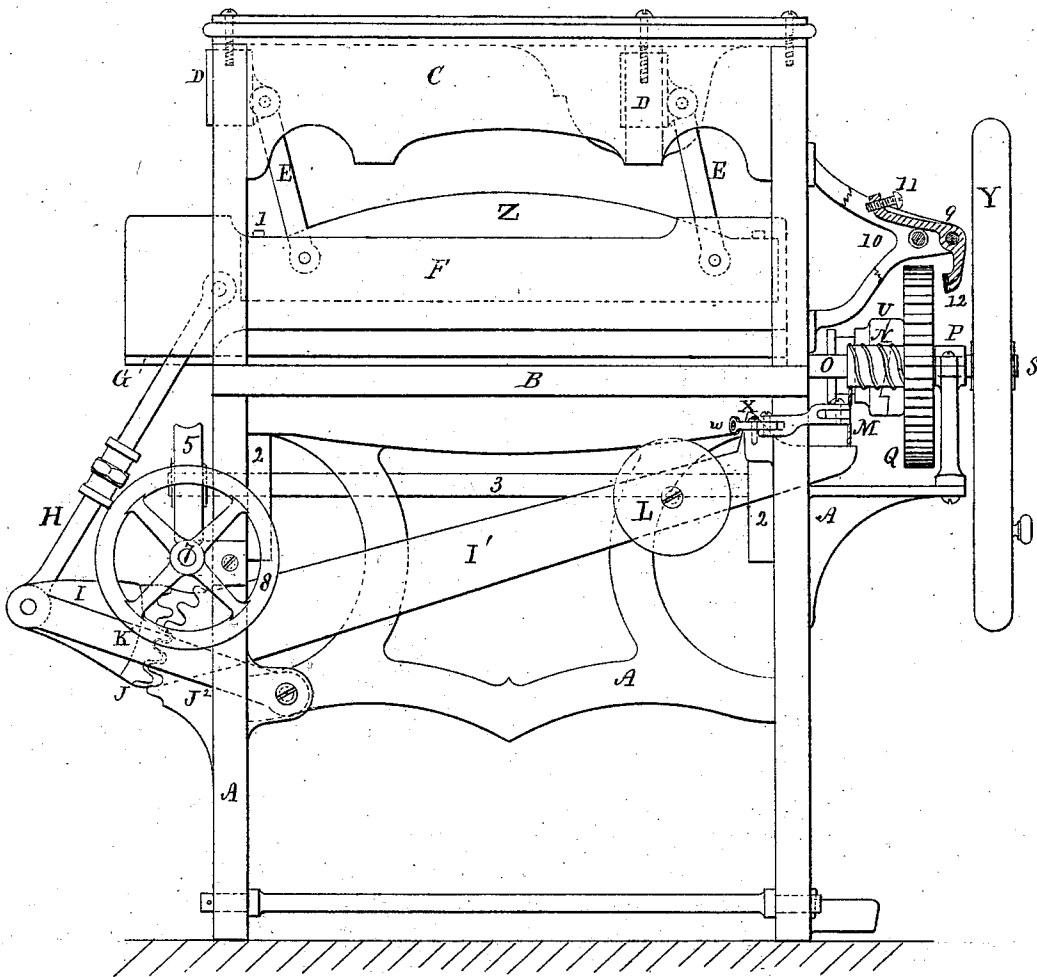
J. LEVINNESS & P. VANHORN.

Paper-Cutting Machines.

No. 149,588.

Patented April 14, 1874.

Fig. 1.



WITNESSES

J. R. Eoff
Michael Cook

J. Levinness and Peter VanHorn by Alfred Brame
Att'y.

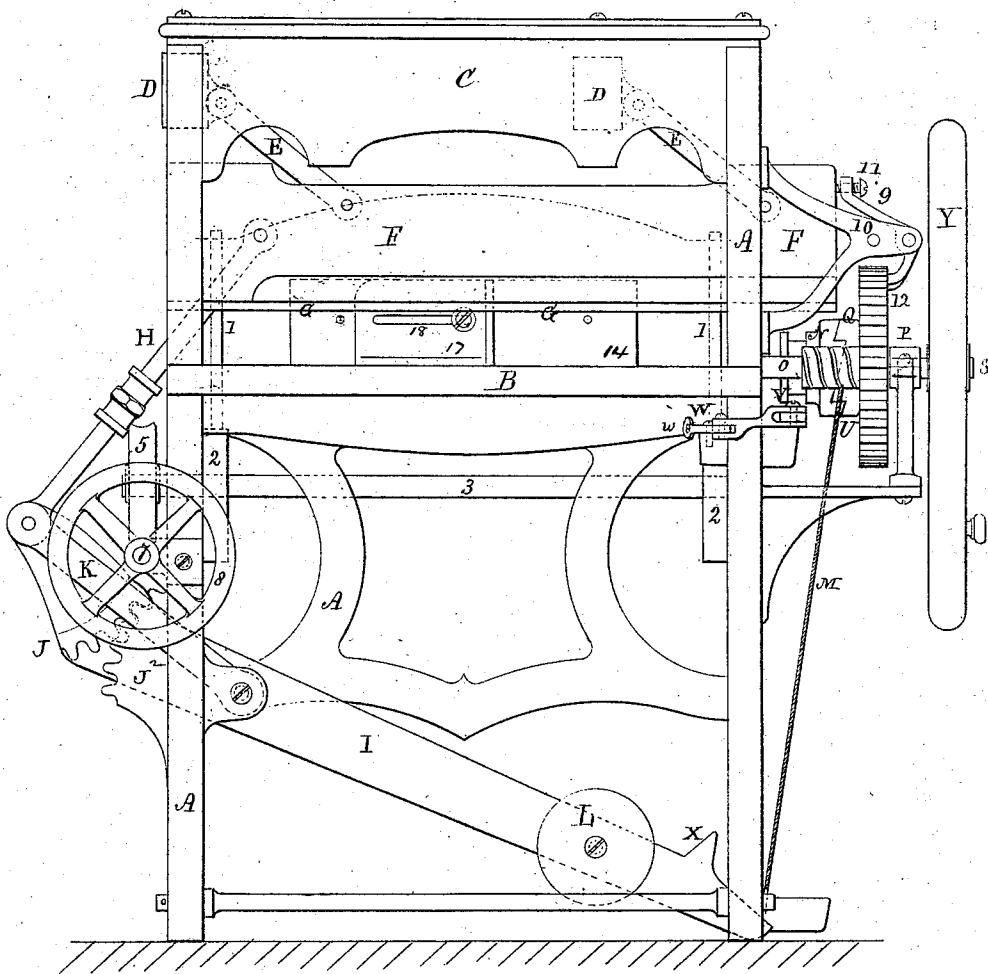
INVENTORS

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Fig. 2.



WITNESSES.

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J. Levinness and P. VanHorn by Alfred D. Brown
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INVENTORS

UNITED STATES PATENT OFFICE.

JOHN LEVINESS AND PRESTON VANHORN, OF BROOKLYN, ASSIGNORS TO
JOSEPH S. SANBORN, OF NEW YORK, N. Y.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. **149,588**, dated April 14, 1874; application filed
October 17, 1872.

To all whom it may concern:

Be it known that we, JOHN LEVINESS and PRESTON VANHORN, of Brooklyn, Kings county, New York, have invented, made, and applied to use Improvements in Paper-Cutting Machines; and that the following is a full, clear, and correct description thereof, reference being had to the accompanying drawings making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a view of our improved machine, the knife having been depressed. Fig. 2 is a front view of our improved machine.

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

The nature of the present invention relates to improvements, as more fully set forth, in the construction of paper-cutting machines, the object of the invention being the construction of a paper-cutting machine in which new means for depressing the clamp are employed, and the machine is rendered more safe in its operation, and less liable to injure the operator, by the employment of a brake and automatic shipper, as more fully herein-after set forth.

To enable others skilled in the arts, to make and use our invention, the following description will be found sufficient.

A is a frame, properly constructed to support the operative parts of the machine. B is a table, upon which the paper to be cut is placed. C is the cross-head, in which are placed the adjustable boxes D, the ends of the links E being attached to those boxes D, while their opposite ends are attached to the knife-bar F, in which the knife G is secured. H shows a connecting-rod, attached at one end to the knife-bar F, while its opposite end is connected to the fulcrum end of the lever I I'. The fulcrum end of this lever I I' is provided with the teeth J gearing into a segment-rack, J², secured upon the side of the frame A. K are links swiveled to the sides of the frame A, while the opposite ends are attached to the fulcrum ends of the lever I I'. L shows a counter-balance placed about midway the lever I I'. M shows a chain, one end of which is attached to the end of the lever I I', while its opposite end is attached to

the drum N secured upon the spindle O, supported by the frame A and a pillar-block, P. Upon this spindle is keyed a cog-wheel, Q, gearing into a pinion, R, secured upon a spindle, S, supported by the frame A and a pillar-block, T. The pinion R has cast upon its back one-half of a clutch, U, the opposite half of which is held upon the spindle S by a feather-key, so that it is free to move upon the spindle S. V shows the shipper, free to move upon a lug cast upon the frame A and throw the clutch U in and out of gear. W shows a lever free to move upon a lug cast upon the under side of the table B. This lever has a set-screw, *w*, inserted in one end of it, and is connected at its opposite end to the forward end of the shipper V. As the lever I I', in the operation of the machine, is drawn up, and the knife drawn down, a cam, X, upon the end of the lever I I', is brought into contact with the set-screw *w*, by which that end of the lever is thrown inward and its opposite end outward, by which the shipper is shifted, shifting the clutch and disconnecting it from the pinion. Y shows a balance-wheel, secured upon the spindle S. Z shows the clamp, between which and the table B of the machine the paper is clamped. This clamp is supported by the standards 1, the upper ends of which are attached to the clamp Z, while the lower ends are provided with racks 2. 3 is a shaft held in the frame A, upon which are secured the pinions 4, gearing into the racks 2. Upon one end of this shaft is secured a worm-wheel, 5, gearing into a worm, 6, secured upon a spindle, 7, held in boxes secured upon the frame A. This spindle 7 has upon one end a hand-wheel, 8. 9 shows a brake, swiveled about centrally in a bracket, 10, secured upon the frame A. In one end of this brake is inserted a set-screw, 11, and its opposite end is provided with a friction-pad, 12, and has its bearing, when required, upon the cog-wheel Q. The set-screw 11 is so positioned as to be brought into contact with the end of the knife-bar F, when the same rises, so that as the knife-bar rises the end of the brake in which the set-screw is will be pushed out, and its opposite end in, by which the friction-pad 12 is brought to bear upon and hug the cog-wheel Q, causing the same to

cease its rotation, and preventing a reversal of the motion of the chain upon the chain-drum.

A back-gage is employed with the machine, against which the paper is laid. It consists of a horizontal strip of wood or metal, 13, provided with a front strip, 14, trued upon its face. The horizontal strip 13 is held upon a sliding block, 15, moving in the slotted portion of the table B. The strip 13 can occupy any position out of a right line, and can be secured in such position by a set-screw, 16, passing this—the strip—and into the sliding block 15. This gage is employed when large masses of paper are to be cut, but when smaller sheets are to be cut the side gage 17 is employed. This side gage is adjustable to the extent of the slot 18 in it, and is made true upon one side, so that when attached to the gage proper two true surfaces are presented to gage the paper by.

Such being the construction, the operation may be thus set forth: The paper to be cut is placed upon the table B of the machine, and the clamp is depressed by turning the hand-wheel upon the spindle, upon the opposite end of which is the worm, into which the worm-wheel gears. Motion is communicated through the worm and worm-wheel to the shaft having upon it the pinions gearing into the racks upon the lower ends of the standards, the upper ends of which are attached to the clamp. By the movement of the shaft and the engagement of the pinions and the racks the clamp

is depressed. The shipper is then moved by the hand of the operator, and the clutch is thrown into gear with the pinion gearing into the cog-wheel secured upon the spindle upon which the chain-drum is secured. By the rotation of this spindle the chain is wound up upon the drum, by which the lever I is raised, drawing down the fulcrum end of the same attached to the knife-bar in which the knife is held, and carrying the knife through the mass of paper or other material to be cut. As the lever I I' rises, the cam X impinges upon the set-screw secured in one end of the lever W, and this end of the lever is thrown inward, and its opposite end connected to the shipper outward, and the clutch is shifted and disconnected from the pinion. The counter-balance upon the lever I I' now causes the lever I I' to fall back to its former position, and the knife-bar and knife to rise upward and away from the paper upon the table B. The cut paper may then be removed, the paper reclamped, and the operation just described is repeated.

Having now set forth our invention, what we claim as new, and desire to secure by Letters Patent, is—

The brake 9, provided with a set-screw, 11, and friction-pad 12, in combination with the knife-bar F, as and for the purposes set forth.

JOHN LEVINNESS.

PRESTON VANHORN.

In presence of—

A. SIDNEY DOANE,
FRAS. DOMINICH.