2 Sheets--Sheet 1.

THOMAS C. ROBINSON.

Improvement in Paper-Cutting Machines.

No. 114,350. Patented May 2, 1871.

Fig. 1.

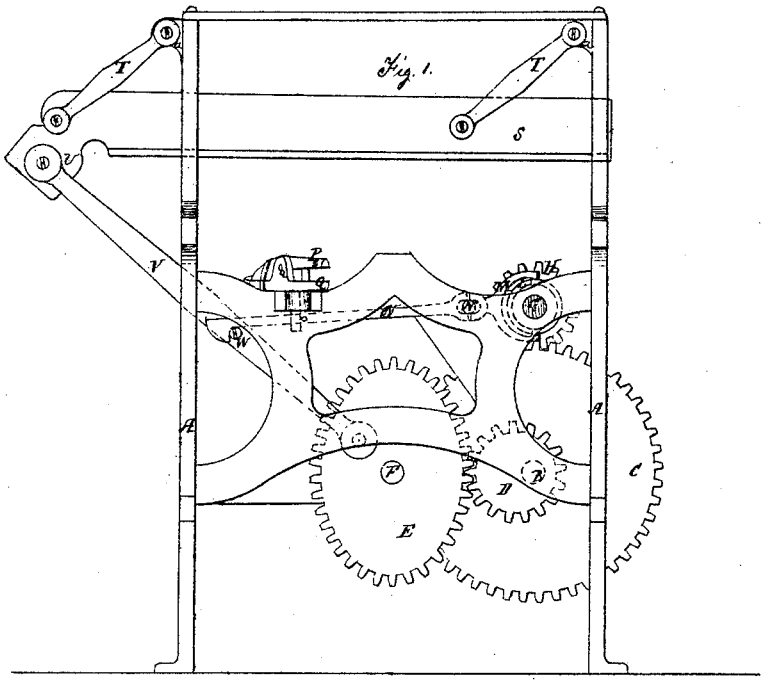
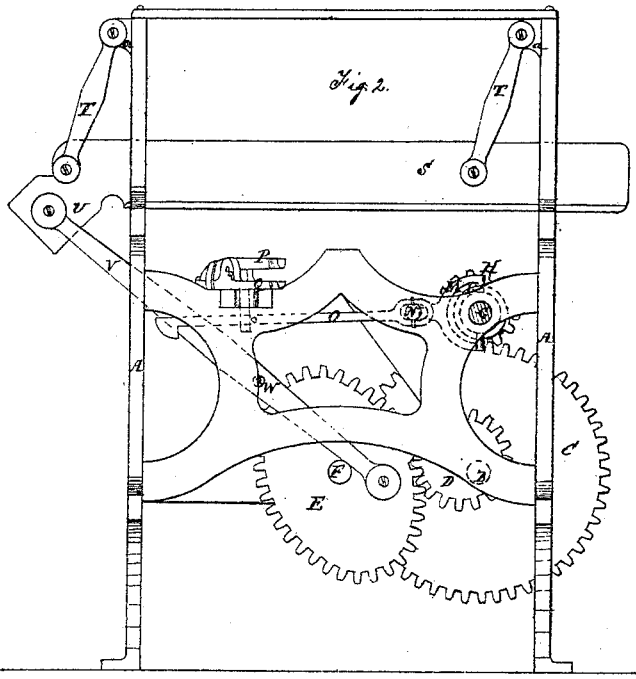


Fig. 2.



Witnesses:
H. W. Henley
T. F. Sheridan

Thomas C. Robinson by Atty's Munn & Co

2 Sheets--Sheet 2.

THOMAS C. ROBINSON.

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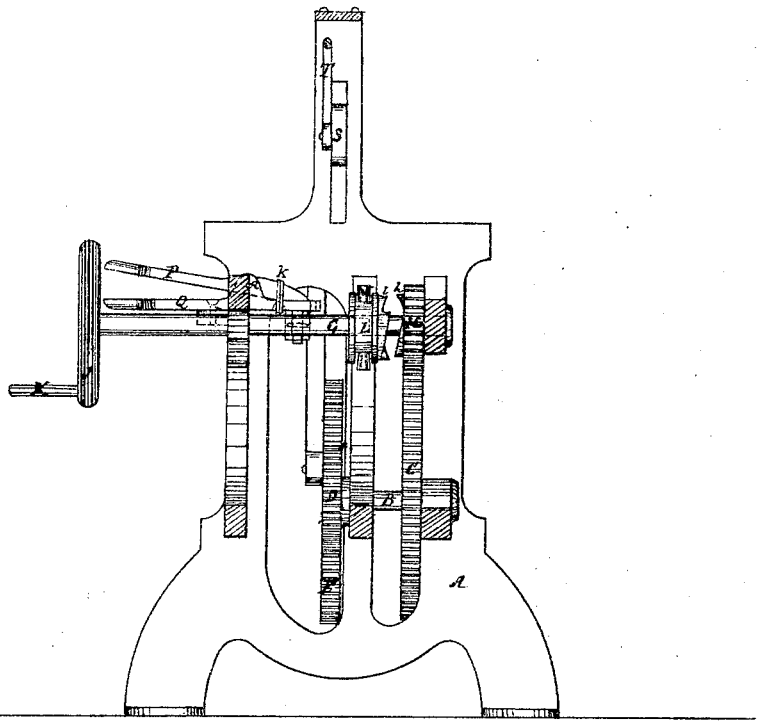
No. 114,350. Patented May 2, 1871.

Fig. 3.



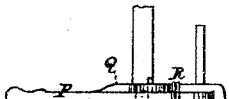
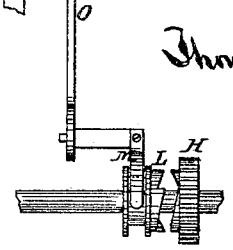


Fig. 4.



Witnesses:
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United States Patent Office.

THOMAS C. ROBINSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO GEORGE H. SANBORN, OF BROOKLYN, NEW YORK.

Letters Patent No. 114,350, dated May 2, 1871.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, THOMAS C. ROBINSON, (assignor to GEORGE H. SANBORN,) of Boston, Suffolk county, Massachusetts, have invented certain new and useful Improvements in the Construction of Paper-Cutting Machines; and that the following is a full, clear, and correct description of the same, reference being had to the accompanying drawing making part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a front view of my invention, the knife being shown in the elevated position.

Figure 2 is a front view of the same, the knife being shown down.

Figure 3 is a side view of the machine.

Figure 4 is a plan view of the means employed to suspend the operation of the knife.

In the drawing like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists in the use or employment of the means by which the operation of the knife may be suspended after the same has been depressed and elevated, as more fully hereinafter set forth; the object of the present invention being the production of a paper-cutting machine which shall be afforded at a low cost to the consumer, and shall accomplish its work thoroughly and in a simple manner.

To enable those skilled in the arts to make and use my invention, I will describe its construction and operation.

A shows a frame composed of side and cross-pieces secured together to support the operative parts of the machine.

B is a shaft secured in the cross-pieces of the frame fitted to receive it, upon which shaft, near one end of it, is keyed a cog-wheel, C, and upon its opposite end is the pinion D, hung eccentrically, which gears into an oval-toothed wheel, E, secured upon a shaft, F, held in boxes in the cross-pieces of the frame A.

Directly above the cog-wheel C, upon the shaft G, which shaft is held in the cross-pieces of the frame, is keyed a pinion, H, gearing into the cog-wheel C, and having cast or formed upon it the cams *h*, the use of which will be hereinafter set forth.

Upon the opposite end of this shaft G is secured the blank-wheel J, provided with a crank or handle, K.

Upon the shaft G is placed the clutch L, provided with cams *l*, over the scored portion of which clutch is passed the forked piece M.

This forked piece M is pivoted to one of the cross-pieces of the frame A, and is provided with an extension-piece, N, over which is passed one end of a hooked lever, O, which lever is also passed through the slotted portion of a lever, P, a pin being passed through the hooked lever and having its bearing upon the outer end of the slotted portion, so that the hooked lever O, when operated as more fully hereinafter set forth, may withdraw the clutch from contact with the pinion H.

Pivoted upon the front cross-piece of the frame A is a slotted plate, Q, provided with the ears or projections *q*, between which the lever P is pinned; while

R is a spring employed to hold the lever down when not in operation. This spring passes over the lever and plate, although a spiral spring having one end attached to the under side of the lever and its opposite end attached to the upper side of the plate may be used, the slotted portion of the lever P being passed through the slotted portion of the plate Q.

S shows the knife passed through the slotted portions of the side pieces of the frame A.

This knife has attached to it upon its face the lower ends of the connections T, the upper ends of which are secured upon lugs *a*, cast upon the side pieces of the frame A. The connections T are made sufficiently long to allow the knife to be drawn down to the full extent of the slots in the side pieces of the frame A.

The knife is also provided, in course of manufacture, upon one end of it, with the projecting plate U, to which is attached one end of a connection, V, the opposite end of which is secured upon the face of the oval-toothed wheel E, and upon this connection V is secured a pin or stud, W, the object of which will be presently explained.

A suitable table to receive the paper to be cut may be secured upon the frame A beneath the knife S.

Such being the construction, the operation may be thus described:

The paper to be cut may be placed upon the table of the machine, and the knife S being elevated, fig. 1, to depress the same and carry it through the paper to cut the same the lever P has its forward end depressed, by which its rear or slotted portion (through which the hooked lever is passed) is elevated, by which the hooked portion of the lever O is lifted away from and above the pin or stud W, secured in the connection V; and upon a lateral movement being imparted to the lever P and plate Q, the pin in the hooked lever still bearing upon the slotted portion of the plate Q, the forked piece connected as shown and bearing upon the clutch L, the clutch is advanced upon the shaft G so that, upon turning the shaft G by means of the crank or handle K, secured to the blank wheel J, the cams upon the clutch are brought into contact with the cams upon the pinion H, and upon the continued movement of the crank or handle K, the pinion H, which gears into the cog-wheel C, will communicate motion through the cog-wheel C to the pinion D, secured upon the same shaft as the cog-wheel, and thence to the oval-toothed

wheel E, to which is attached one end of the connection V, the opposite end of which is attached, as already stated, to the knife S.

As the oval-toothed wheel continues its movement the knife is drawn down and through the paper placed upon the table of the machine until it has reached the extent of its downward movement, when the movement of the knife will be reversed and it will be returned to its former position.

The hand of the operator during the downward movement of the knife having been removed from the forward end of the lever P, and the rear end of the same having been thus depressed, the hooked portion of the lever stampinges upon the stud or pin secured in the connection V, and the lever O is drawn back by the connection, carrying with it the forked piece connected as shown, and the clutch will be moved sufficiently upon the shaft G to relieve the cams upon the clutch from contact with the cams upon the pinion, and the knife will remain in operation.

The cut paper may then be removed from the machine and its place be supplied with a second lot of paper to be cut, when the operation already described may be repeated.

Two points in the construction of the machine merit attention:

a. That by the use of the oval-toothed wheel and the pinion hung eccentrically, the leverage required to throw the knife is shortened, and as a result great power is obtained, and the loss of power occasioned by hanging the knife as shown is, to a certain extent, compensated for.

b. That by the emplyment of the clutch and the hooked lever, connected as shown, the movement of the knife is suspended after it has made a downward movement and returned therefrom, and that this is done automatically.

The first point is important in that the knife passes through the paper more powerfully, cutting the same better and more rapidly; and the second point is of value, as it places the control of the knife entirely in the hands of the operator, who is thus less liable to be injured in the operation of the machine.

Having thus set forth my invention,

What I claim as new is—

In combination with the pinion H, clutch L, forked piece M, hooked lever O, slotted lever P, slotted plate Q, spring R, the pin W secured in the connection V, when the same shall be constructed and operate substantially as and for the purposes set forth.

THOMAS C. ROBINSON.

Witnesses:

WILLIAM W. SWAN,

GEO. H. SANBORN.