2 Sheets—Sheet 1.

W. F. HILL.

PAPER-CUTTING MACHINES.

No. 195,278. Patented Sept. 18, 1877.

Fig. 2.

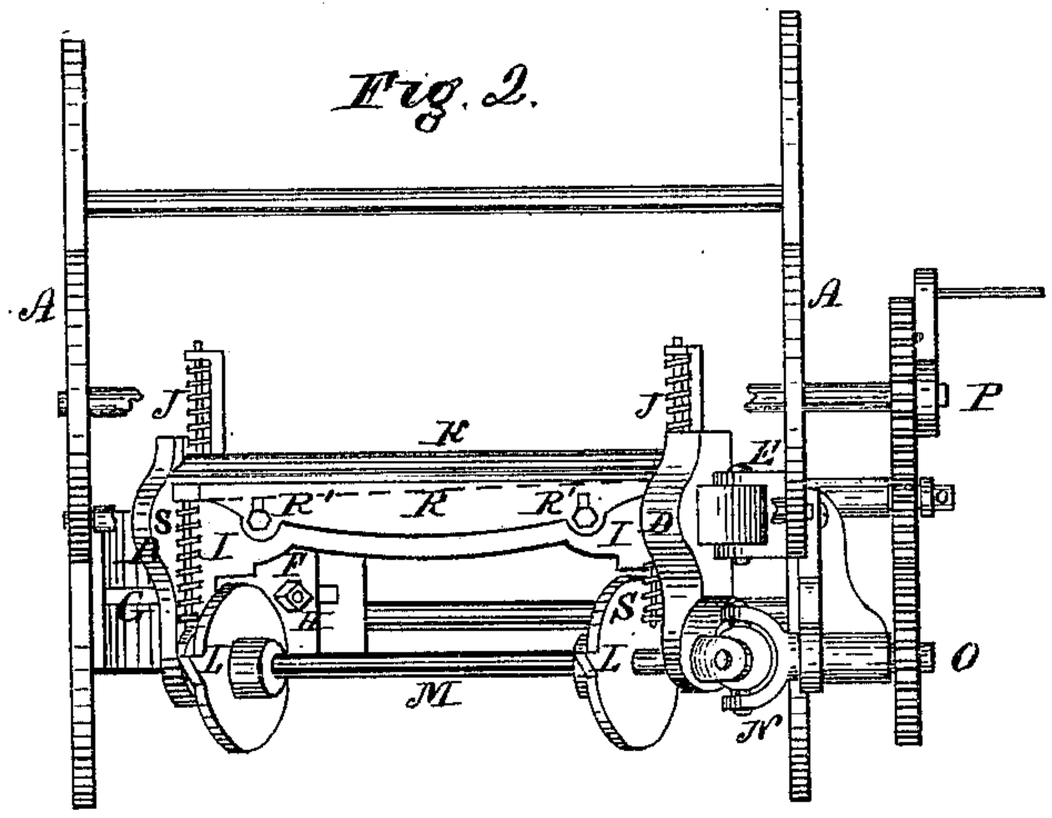
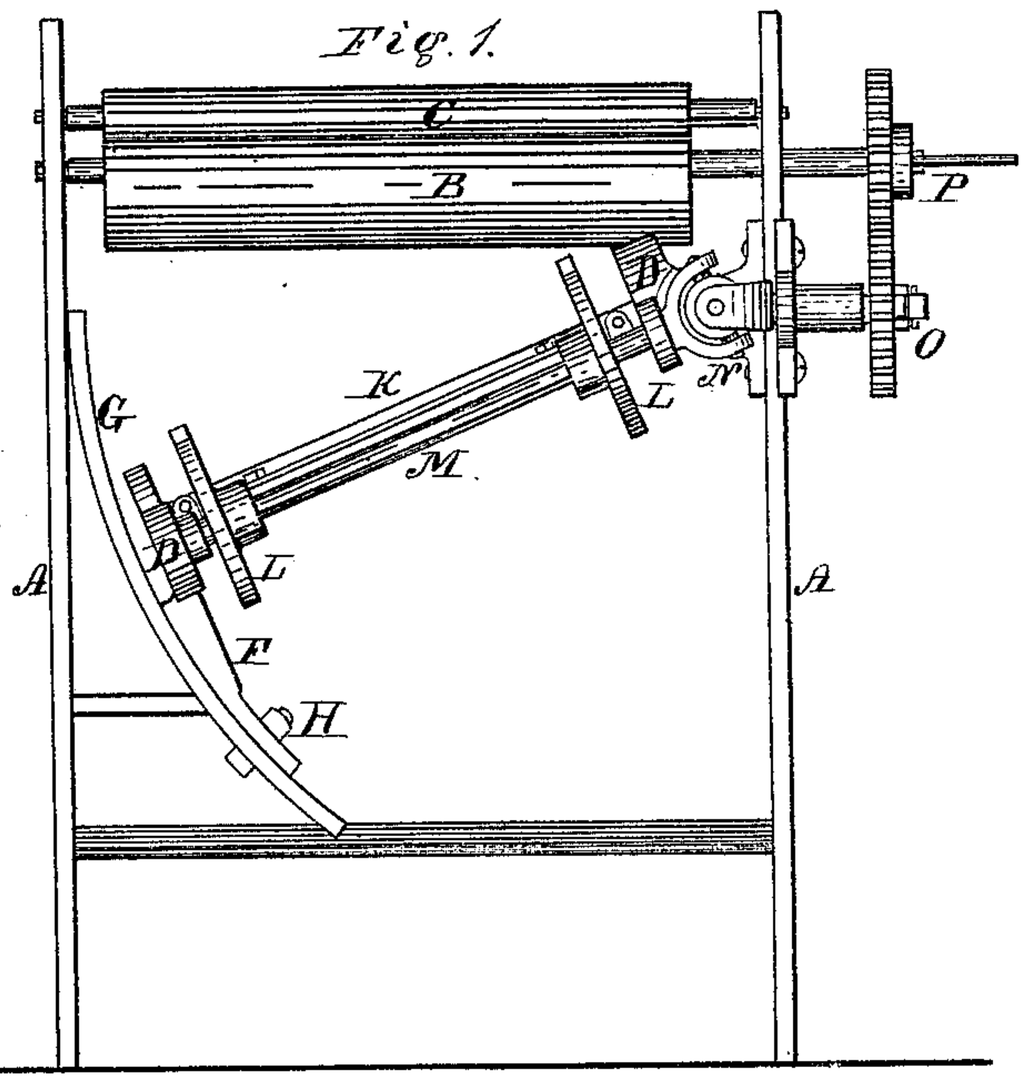


Fig. 1.



Witnesses.

John G. Peters

Willard Eddy,

Inventor.

Norbert F. Hill

by Thos. G. Ellis, Attorney

2 Sheets—Sheet 2.

W. F. HILL.

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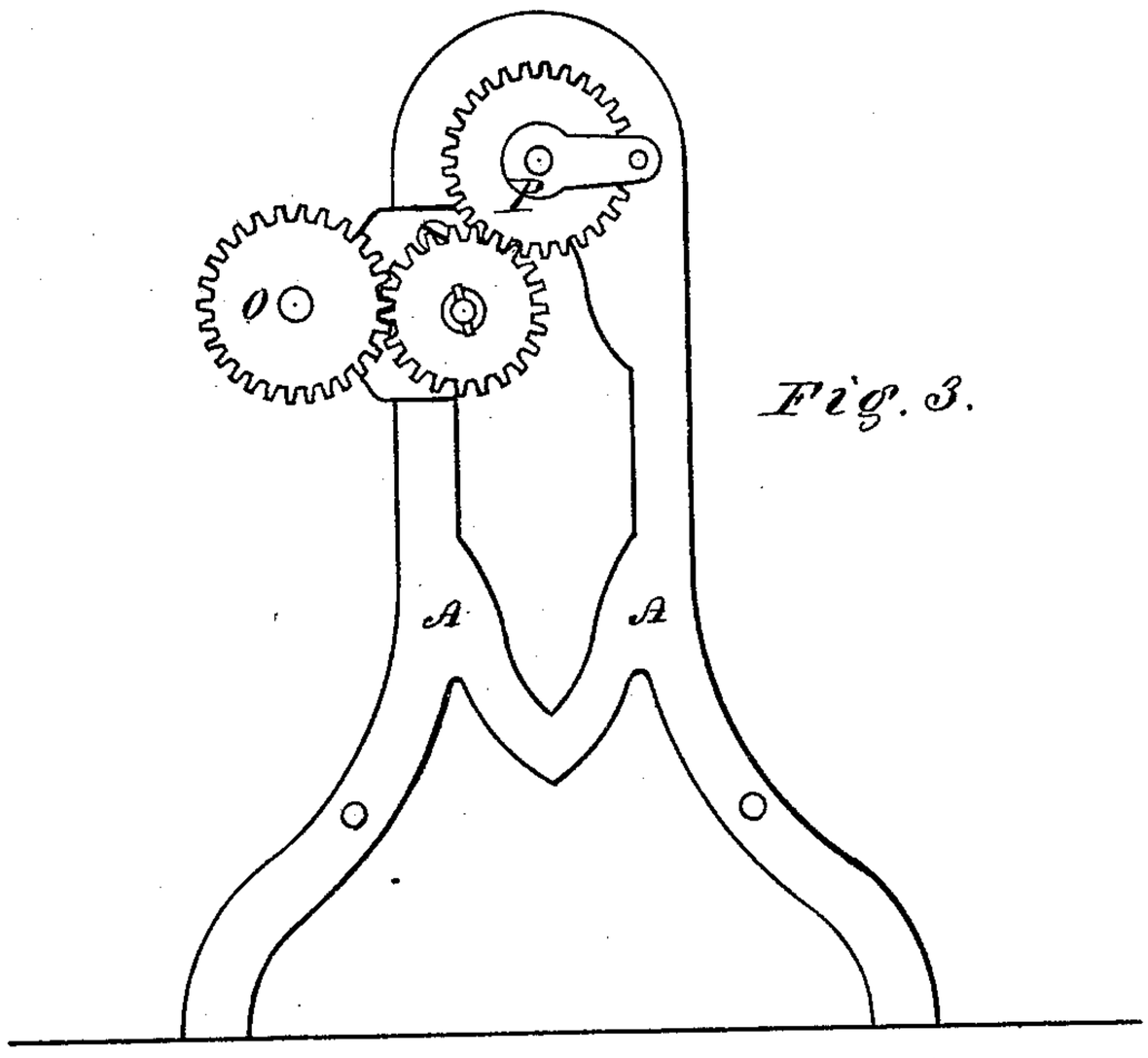

Fig. 3.

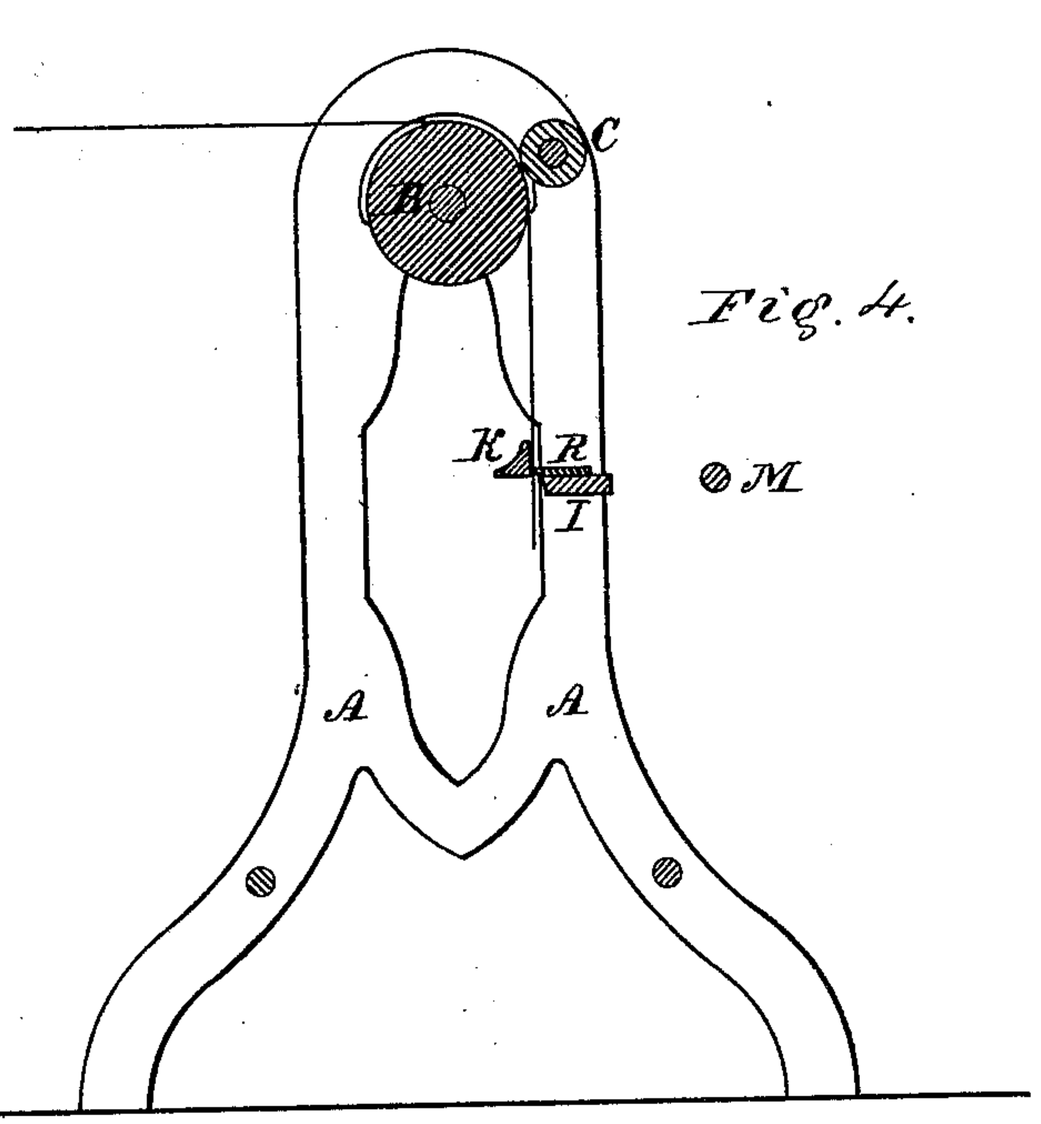

Fig. 4.

Witnesses.

John F. Peters

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Inventor.

Wilbur F. Hill

by Thos. G. Ellis, attorney

UNITED STATES PATENT OFFICE.

WILBER F. HILL, OF NORTH MANCHESTER, CONNECTICUT.

IMPROVEMENT IN PAPER-CUTTING MACHINES.

Specification forming part of Letters Patent No. **195,278**, dated September 18, 1877; application filed May 7, 1877.

To all whom it may concern:

Be it known that I, WILBER F. HILL, of North Manchester, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Cutting Paper; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to machinery for the manufacture of paper; and it has for its object the cutting off of sheets from the roll as it passes continuously from the paper-making machine.

With the ordinary devices in use for cutting off paper from a roll the paper cannot be run continuously, but is stopped at each cutting operation, as the time taken in cutting causes the paper to run out and form a loop, which interferes with the cutting, and prevents the paper from following through the cutting mechanism.

By means of my improved devices sheets can be cut off at any angle desired from a continuously-moving roll of paper as it comes from the paper-making machine, or from a drum on which it has been wound.

My invention consists in the mechanical devices which will be hereinafter described.

In the accompanying drawings, on two sheets, Figure 1 is a front view of my improved machine. Fig. 2 is a top view of the same with the rolls over which the paper passes to the cutters removed, so as to show the parts beneath. Fig. 3 is an end view, showing the gearing which operates the cutting mechanism. Fig. 4 is a cross-section through the middle of the rolls and cutters, showing the relative position of these parts to the sheet of paper cut.

A is the stationary frame of the machine. B is the roller over which the sheet of paper comes from the paper-making machine or other source of supply. C is a smaller roller, resting upon the continuous sheet, in the usual manner, to press it upon the roller B, which may be called the "feeding-roller." D is a movable frame, which is hung upon a hinge-joint, E, so that it can move in a vertical plane. At the other end it is provided with a slide, F, which moves upon the arc G, and to which it can be secured in any position by means of the set-screw or clamp H. I is the movable cutter-bar, which slides back and forth in horizontal grooves in the ends of the frame D. It is pressed forward or away from the opposite or stationary cutter K by means of the springs J. The bar K and the sliding bar I are provided with cutting-edges, forming a shears, the edge of I being slightly inclined, so as to cut a little drawing, in the customary manner with such edges. The cutting-edges are pressed together by means of the revolving cams L, which are given such a form as to press the bar I up quickly to do the cutting, and are instantly released, so that the bar may at once fall back from the paper and allow it to continue its motion. The cams L are placed upon the shaft M, which is provided with the universal joint N, whose center is in the same line with the hinge-joint E, so that the shaft M can move with the frame D, and at the same time be driven by the wheel O, which is geared to the shaft P of the feeding-roller B. The rotation of the cams L is thus regulated, so as to cut off any desired length from the continuous sheet. R is a holding-bar, for holding the paper while being cut. It moves on slides R′ upon the cutter-bar I, and is pressed toward the bar K by means of the springs S.

The operation of my improved cutting-machine is as follows: The continuous sheet of paper passes over the drum or roller B, and between the cutting-bars I and K, as shown in Fig. 4. When the cams L come opposite the cutter-bar I, they press it and the holding-bar R which it carries with it toward the paper. Just before the cutting-edges engage, the holding-bar R clips the paper between it and the bar K, so as to hold the sheet while being cut. The cutting-edges then shear the paper and are instantly released, so that the continuous sheet can move on before it has time to form a loop or become disengaged from its proper position. When it is desired to cut off square sheets, the bar

I is set horizontal, and when it is desired to cut sheets at any other angle, the frame D is depressed, so that the cutters shall have the proper inclination, and is clamped to the arc G by means of the nut H, which holds it firmly in position.

What I claim as my invention is—

1. The adjustable inclined cutter-frame D, hinged at one end, in combination with the slide F, the arc G, and the clamp H, substantially as herein described.

2. The frame D, containing the cutters swinging upon the hinge E, in combination with the cam-shaft M for operating the said cutters, connected with the actuating mechanism of the machine by means of a universal joint, N, in line with the said hinge, substantially as herein described.

3. The combination of the rotary cams L, operating to press the cutters together, the cutter-bars I and K, the holder-bar R with its springs S, and the springs J for withdrawing the cutter-bar I, substantially as and for the purpose herein described.

WILBER F. HILL.

Witnesses:

THEO. G. ELLIS,

JOHN T. PETERS.