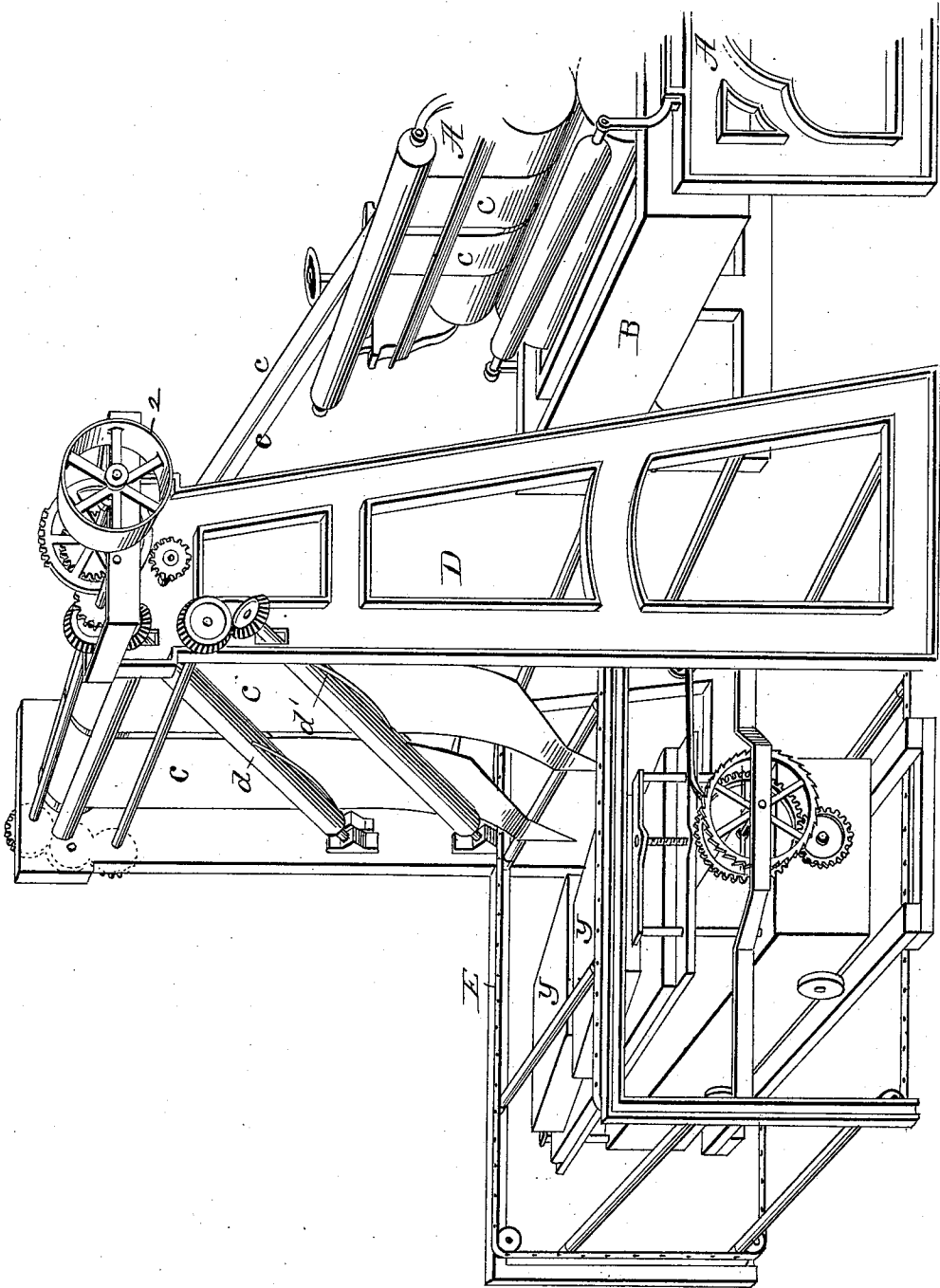


(No Model.)

J. BALL.
PAPER CUTTING MACHINE.

No. 352,848.

Patented Nov. 16, 1886.



WITNESSES:

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PAPER-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 352,848, dated November 16, 1886.

Application filed March 23, 1885. Serial No. 159,715. (No model.)

To all whom it may concern:

Be it known that I, JAMES BALL, a citizen of the United States, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Paper-Cutting Machines, of which the following is a specification.

This invention relates to improvements in machines for cutting sheets with oblique edges from webs of paper while the said webs are being delivered from the paper-making machine, and is in the nature of an improvement on my patent of February 3, 1885, the object being to obviate the employment in such machines of a sheet-retarder, as described in my said patent, and to combine with a paper-making machine which delivers several webs of paper therefrom, or a web divided by cutting into several strips, a paper-cutting machine which receives said several webs as they come in a continuous line from the paper-making machine, and cut sheets with oblique edges therefrom in such a manner that the several cut sheets are caused to be dropped upon the ordinary lay-boy without the intervention of any devices for controlling the action of the said sheets after they are cut off from the said webs.

In the drawing forming part of this specification, Figure 1 is a perspective view of a paper-cutting machine constructed according to my invention, occupying an operative relation to the delivery end of a paper-making machine there shown, from which two separate webs or strips of paper are extending and shown as passing through the said cutting-machines in connection with a paper-making machine.

In the drawing, A indicates the delivery end of an ordinary paper-making machine provided with a cutter for dividing the web longitudinally, and one of that class which is adapted to operate with or without a size-tub, B, whereby the paper is sized after leaving the driers and before being cut into sheets. A paper-cutting machine, D, is located at the end of the machine A, and is adapted to be run in connection with machine A by a belt from the latter over the pulley 2 on the cutting-machine, or by other suitable means, so that the latter will convey the paper webs *c c* at a speed corresponding to that of the machine A. Said

cutting-machine is provided with two rotating cutters, *d d'*, each of which operates against the usual fixed cutter-bar. Said cutters are operated by means of gear-connections, as shown, with the driving-pulley 2 of the machine. Said cutters are hung in proper bearings in the frame of the machine D, and in lines oblique to the line of the movement of the paper webs *c*, one above the other, as shown in Fig. 1.

The cutters *d d'* are adapted to act simultaneously upon the two webs *c c*, so as to sever a sheet from each at the same time, forming sheets with oblique edges. Said sheets are both cut and dropped at the same time in consequence of the peculiar arrangement of the said cutters, whereby one sheet is not severed from the web before the other one, as is the case where one diagonal cutter acts on two webs, as in my said patent, and hence the improved machine herein described and shown requires no sheet-retarder to hold back the first cut sheet until the second one is cut, and then releasing said first cut sheet, so that both shall drop at the same time onto the lay-boy; but by arranging in a paper-cutting machine two separate diagonal cutters, one above the other, and causing each cutter to act at the same time upon the different webs, the severed sheets fall simultaneously upon the lay-boy, and they are thus manipulated with as much ease and regularity as are several sheets having edges at right angles, and without any special devices whatever to guide the sheets, as aforesaid.

It is obvious that the wide web of a paper-machine may be divided into more than two strips, as shown, and that the number of knives on the cutting-machine may be made to correspond to the number of separate webs on which they are to operate.

It is obvious that paper from a machine, divided into two or more webs or that two or more separate webs may be fed to the cutting-machine from rolls of paper separate from the paper-machine, if desired, and be cut into sheets, as aforesaid; but the machine herein described and shown is especially useful for producing sheets of paper with oblique edges of the quality termed "loft-dried," since the webs *c c*, when treated with the sizing in tub B, are run off on the cutting-machine in a damp state, and the sheets are in that condition de-

posited on the lay-boy, and are afterward dried in a loft, and then calendered, and finally used in the manufacture of envelopes, their oblique-edged form obviating great waste of stock for such manufacture, as compared with sheets having right-angle edges.

As an improvement in the device in paper-cutting machines set forth in Letters Patent to me, No. 311,559, of February 3, 1885, I claim—

- 10 1. The obliquely-arranged cutters *d* and *d'*, arranged in relation to each other as described, whereby the web is cut into rhomboidal sheets, which are presented to the lay-boy or carrier simultaneously, all substantially as set forth.
- 15 2. A plurality of cutters obliquely arranged and arranged in relation to each other and the

webs, substantially as set forth, whereby rhomboidal sheets are cut by each from the web on which it operates, and the several sheets are delivered simultaneously to the lay-boy or carrier.

3. In combination with the frame and driving mechanism of a paper-cutting machine, a plurality of cutting-rolls extending obliquely across said frame, the oblique-cutters on one roll being in a line transversely of the machine with those of the next roll, substantially as shown.

JAMES BALL.

Witnesses:

WM. H. CHAPIN.

H. A. CHAPIN.