

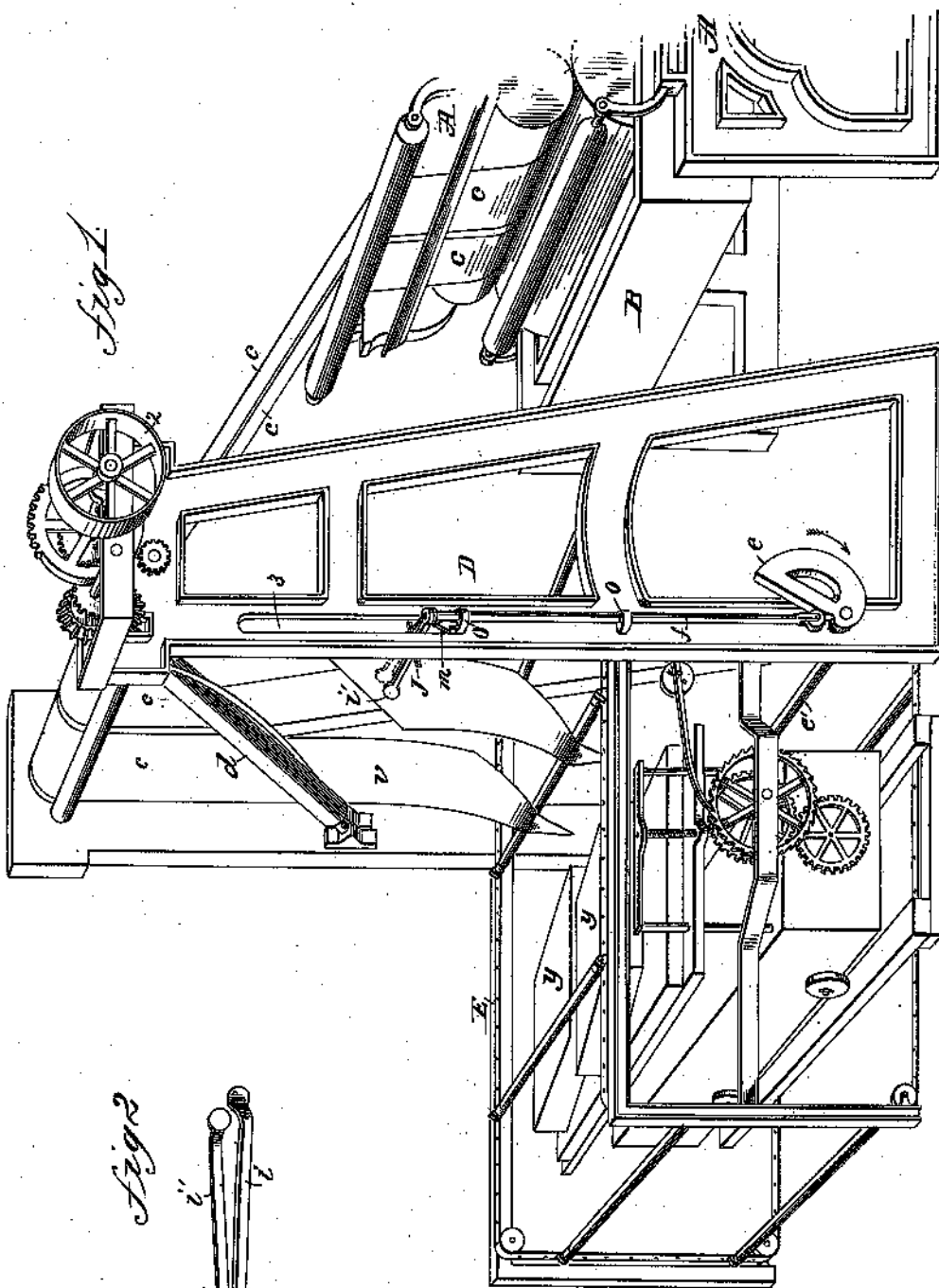
(No Model.)

J. BALL.

MACHINE FOR CUTTING SHEETS WITH OBLIQUE EDGES FROM  
WEBS OF PAPER.

No. 311,559.

Patented Feb. 3, 1885.



*Fig. 1*

*Fig. 2*

WITNESSES:

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JAMES BALL, OF HOLYOKE, MASSACHUSETTS.

MACHINE FOR CUTTING SHEETS WITH OBLIQUE EDGES FROM WEBS OF PAPER.

SPECIFICATION forming part of Letters Patent No. 311,559, dated February 3, 1885.

Application filed April 12, 1884. (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 Machines for Cutting Sheets with Oblique Edges from Webs of Paper, of which the following is a specification.

This invention relates to improvements in devices for producing and manipulating sheets of paper of a diagonal form while the paper web is being delivered from the paper-making machine, the object being to cut and manipulate said sheets of paper either in a wet or dry state, and convey them in proper order to a lay-boy.

The drawings forming part of this specification illustrate the delivery end of a paper-making machine and a paper cutting and manipulating machine adapted to operate in conjunction with the former, embodying my improvements.

Figure 1 is a perspective view of a machine which illustrates my invention. Fig. 2 is a detail detached.

In the drawings, A indicates the delivery end of an ordinary paper-making machine, 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 by the latter by a suitable belt-connection from machine A over pulley 2 on the cutting-machine, or by other suitable means, so that the latter will convey the paper webs *c c* at a proper speed to correspond with that of the machine A. Said cutting-machine is provided with a rotating cutter, *d*, operating against the usual fixed cutter-bar. The cutter is operated by means of gear-connection, as shown, with the rollers at the top of the machine, and is hung in a line diagonal to the line of the movement of the paper webs *c*.

To prevent one of the two sheets of paper *v v*, which are cut from the webs *c* at each revolution of the cutter *d*, from reaching the lay-boy E before the other, the following sheet-governing devices, constituting what I call a "sheet-retarder," are provided in the cutting-

machine D: A shaft, *e*, near the bottom of the machine, is hung in the frame of the latter, and is rotated by suitable connection with the rollers above. On the near end of shaft *e* is secured a cam, *e*, whose movement is in the direction of the arrow.

On the side of the machine D, in studs *o o* projecting therefrom, is hung the rod *f*, which is capable of vertical reciprocating motion by means of cam *e*, on which the lower end of said rod rests. A wedge, *m*, stands in a vertical position on the upper stud, *o*, between rod *f* and the side of the machine, through which is formed the vertical slot 3. Two paper-nippers, *i i'*, are attached to the upper end of the rod *f*. The lower nipper, *i*, is fixed on shaft *f*, and the upper one, *i'*, is pivoted thereon. A spring, *n*, draws the nippers together. A latch, J, is pivoted on nipper *i'*, and has its under side notched, so that the upper edge of nipper *i* can enter it. (See Fig. 2.) The nippers *i i'* pass through the slot 3, and rest in such a position that the line of movement of the sheet of paper cut off by the high end of the cutter *d* is between the nippers.

The lay-boy E may be of any of the well-known varieties, so that it be capable of receiving the cut sheets and suitably depositing them in piles *y*, in the usual manner.

The operation of my improvements is as follows: The main web of paper on the machine A is cut lengthwise, to divide it into two webs, *c c*, before it reaches the cutting-machine. When the paper is to be tub-sized, it is run through the size-tub B, and then to the cutter. In this case it is cut in a wet state and subsequently dried. Owing to the sharp diagonal position of cutter *d* relative to the line of movement of the webs *c*, it is obvious that one of the sheets will be severed in advance of the other, and that one will be the one which the high end of knife *d* acts on; but in order that the sheets be both conveyed to the lay-boy within the same time it is obvious that the first cut off sheet must not be allowed to reach the lay-boy before the second cut does. Therefore the nippers *i i'* are adapted to operate as follows, and regulate the movement of the first cut sheet to that of the second: When the higher end of cutter *d* is about to cut a sheet, cam *e* has carried rod *f*

p; and the nippers *i i'* are brought near the cutter and the sheet between them, and an instant previous to the severing of the sheet the end of lever J strikes a projection on the inside of the machine-frame, whereby its opposite end is disengaged from nipper *i*, letting nipper *i'*, actuated by spring *n*, swing against the sheet, whereby the latter is held between the two. The sheet at the lower end of cutter *d* is severed instantly after the first, and the movement of cam *e* is so timed that the end of rod *f* drops off the high end of cam *e*, when the second sheet is severed, and having fallen to the position shown in Fig. 1 the wedge *m* is driven between the nippers, opening them and letting both sheets fall together on the lay-boy.

By the above-described means two sheets of paper of diagonal form are cut at each rotation of the cutter, and their movements are properly governed.

It will be understood that the feed mechanism is of usual construction, the same not being original with me.

What I claim as my invention is—

1. In a paper-cutting machine, the combination of web-feeding mechanism, an oblique cutter extending across the width of two webs, and a sheet-retarder at one side only of the machine, substantially as described.

2. The combination, with the diagonal cutter *d*, of the nippers *i i'* and means, substantially as described, for opening and shutting said nippers and for giving them a vertical movement, substantially as set forth.

JAMES BALL.

Witnesses:

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