

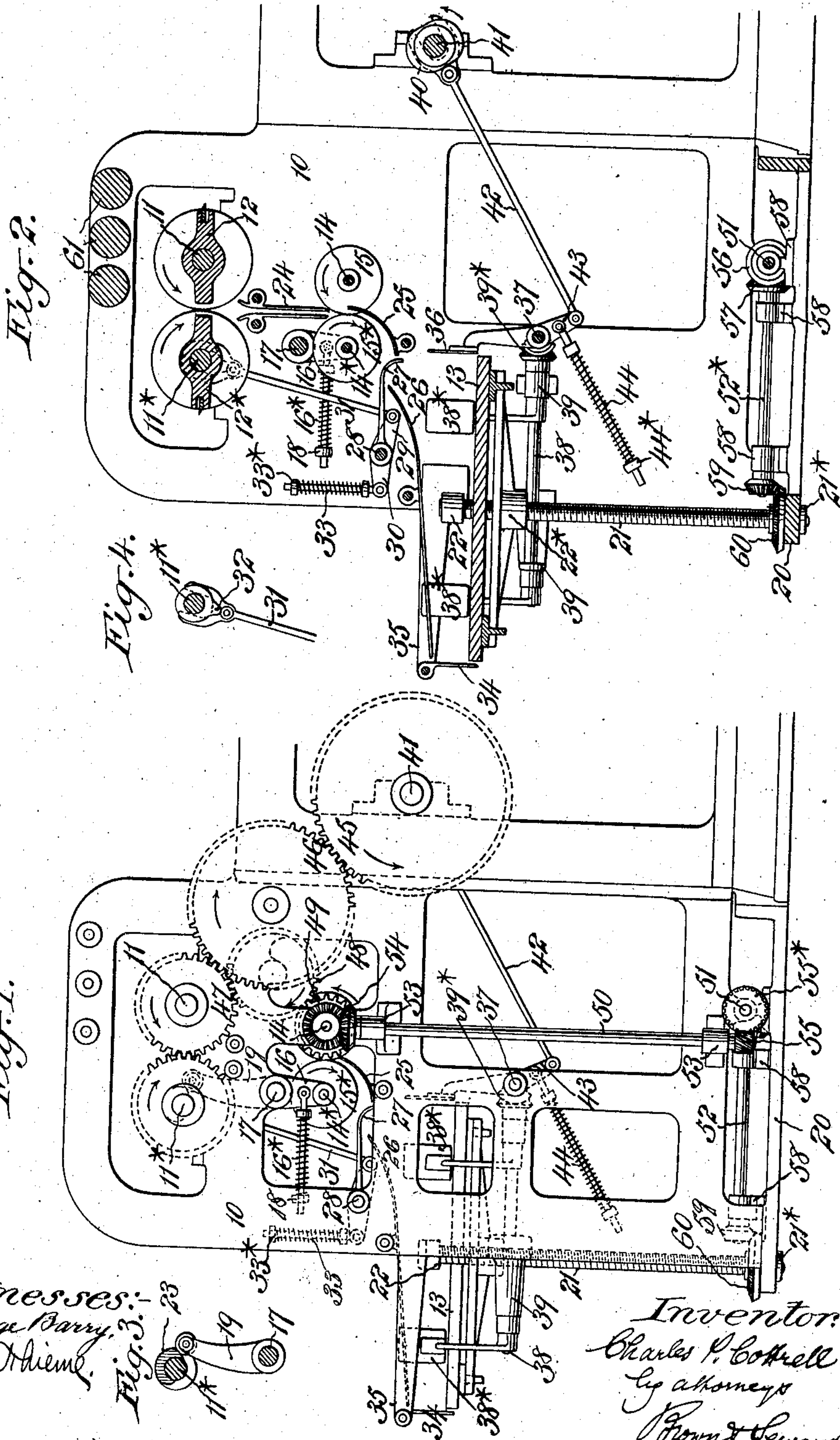
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C. P. COTTRELL.

MACHINE FOR CUTTING AND DELIVERING SHEETS OF PAPER, &c.

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Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR CUTTING AND DELIVERING SHEETS OF PAPER, &c.

No. 827,422.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed March 15, 1905. Serial No. 250,229.

*To all whom it may concern:*

Be it known that I, CHARLES P. COTTRELL, a citizen of the United States, and a resident of Westerly, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Machinery for Cutting and Delivering Sheets of Paper and other Material, of which the following is a specification.

10 This invention relates to machinery for cutting sheets from a running web and delivering them flat upon a receiving board or table; and it consists in the combinations hereinafter described and claimed comprising  
15 cutters and such a board or table.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation of machinery embodying my invention; Fig. 2, a vertical section parallel with  
20 Fig. 1. Figs. 3 and 4 are detail views which will be hereinafter explained.

10 is framing which may be part of or an adjunct to the framing of a web-printing machine in connection with which this cutting and delivery machinery is used. In the upper part of this framing are the bearings for the shafts 11 11\* of the two rotary cutting-reels 12 12\*, and at a suitable distance above the base of said framing and below and forward of the cutting-reels is the horizontal receiving-table 13, carried by upright screws 21. There are two of these screws, one on each side of the table. The lower ends of these screws are fitted to turn in bearings 21\* in  
35 the bed-plate 20 and their upper ends in bearings in brackets 22 on the framing, the said screws being so fitted to said bearings as to be confined vertically. The said screws are threaded into the table-supports 22\*, so that  
40 by turning them the table is raised and lowered.

Directly under the cutting-reels and at a distance therefrom equal to about half the length of the sheets to be cut there is an intermittently-operating feeding device consisting of a pair of feeding-reels composed of shafts 14 14\* and disks 15 15\*. The reel-shaft 14 is supported in fixed bearings in the framing 10, and the reel-shaft 14\* is sup-  
50 ported in bearings in the downwardly-pro-

jecting arms 16 of a horizontal rock-shaft 17, which is supported in bearings in the framing 10. Between one of said arms 16 and an abutment 18 on the framing there is applied a pushing-spring 16\*, which exerts a constant  
55 tendency to press the reel 14\* 15\* toward that 14 15. The said rock-shaft 17 has an upwardly-projecting arm 19, arranged opposite to a cam 23, which is provided on the shaft 11\* of the cutting-reel 12\* and which serves  
60 by its action on said arm 19 to separate the feeding-reel 14\* 15\* from its fellow. The said rock-shaft and cam and the arm 19 are shown separately in Fig. 3.

Between the cutting-reels and feeding-  
65 reels there is a stationary guide 24 for the end of the web and for the sheets cut therefrom, and between the feeding-reels and the table there is a stationary guide 25, which is so curved under the reel 14\* 15\* as to direct the  
70 cut sheets from the reels toward a position over the table and under stationary sheet-guides 26, which are arranged at a short distance above the table. Between the feeding-  
75 reel 14\* and the said guide 26 there is arranged a set of sheet-knockers 27, carried by a horizontal rock-shaft 28, which is supported in bearings in the framing. The ends of these knockers are turned downward to enter between the guides 25 and 26. For the  
80 purpose of producing the downward and upward movement of these knockers the rock-shaft is furnished with two arms 29 30, the arm 29 being connected with a yoke-rod  
31, which is depressed by a cam 32 on the  
85 cutter-reel shaft 11\*, and the arm 30 having a pushing-spring 33 applied between it and an abutment 33\* on the framing. Fig. 4 is a side view of said cam and yoke-rod.

At the front edge of the table a stationary  
90 sheet-stop 34 is carried by brackets 35 on the framing. At the rear edge of the table is a sheet-jogger 36, carried by a rock-shaft 37, arranged in fixed bearings in the framing. On opposite sides of the table are sheet-jog-  
95 gers 38\*, carried by rock-shafts 38, having their bearings in hangers 39, carried by the framing. The two rock-shafts 38 are geared with the rock-shaft 37 by bevel-gearing 39\*, so that all three rock-shafts may be actuated  
100



by one cam 40 on a rotary shaft 41, the said cam being engaged by a yoke-rod 42 with an arm 43 on the rock-shaft 37 and the said arm having applied to it a pushing-spring 44, which abuts against a stud 44\* on the framing.

The shaft 41 before mentioned is represented as the driving-shaft, and it carries a gear 45, which is geared, as shown in Fig. 1, through an intermediate loose gear 46 with a gear 47 on the shaft 11 of the cutter-reel 12. The gears are so proportioned that the cutting-reels having single cutters make two revolutions for every revolution of the driving-shaft. The cam 40 being a double one produces the action of the several joggers 36 and 38\* every time a sheet is deposited upon the table. The knockers 27 being operated by the cam 23 on the cutting-reel shaft 11\* also operate on every sheet as its tail end passes by the feeding-reels. The feeding-reel shaft 14 is driven through an intermediate loose gear 48 from a gear like 47 on the cutter-reel shaft 11, the said intermediate gear meshing with a gear 49 on said reel-shaft. These gears on the cutting-reel shaft and feeding-reel shaft are so proportioned that the peripheral speed of the feeding-reel is slightly in excess of that of the cutters. The feeding-reel 15\* is driven by contact with the positively-driven one 15. The screws 21, which serve to slowly depress the table as the pile of the sheets deposited upon it increases, derive their motion from the feeding-reel shaft 14 through a vertical shaft 50 and a horizontal shaft 51 and two horizontal shafts 52 52\*, said shaft 50 having its bearing in brackets 53 on the framing and said shafts 51 52 52\* having their bearings in stands 58 on the bed-plate 20. The shaft 51 is geared with the feeding-reel shaft 14 by bevel-gears 54, and it has an endless screw 55 on its lower end which meshes with a worm-gear 55 on the shaft 51. The said shaft 51 has on it two bevel-gears 56, which mesh, respectively, with bevel-gears 57 on the two shafts 52 52\*, and these latter shafts are geared, respectively, with the two screws 21 by bevel-gears 59 60.

The web from which the sheets are to be cut is fed down between the cutting-reels by any suitable means—for example, by feeding-in rollers 61, such as are commonly used in such machinery—and its end passes down freely through the guide 24 and between the feeding-reels 15 15\*, which are then separated by the cam 23, so that their operation is intermitted. When a proper portion of the web—say about half the length of the sheet to be cut—has passed between the feeding-reels, the said cam passes by the roller at the end of the arm 19 of the rock-shaft 17 and allows the spring 16\* to so push the reel 15\* toward that 15 that the web is seized between

said reels at about the same time the blades of the cutters come together and sever the web, leaving the severed sheet under the control of the feeding-reels, which, running at a greater speed than the cutters and feeding-in rollers 61, so carry it forward over the curved guide 25 that a space is left between it and the following end of the sheet. While the sheet thus passes forward, the knockers 27 are raised out of its way, and it continues onward under the guide 26 and over the table until its front end strikes the stop 34, when the knockers 27, being depressed by the cam 32, knock down its rear end upon the table, where it is brought to its proper position by the several joggers 36 and 38\*. The knockers 27 having thus knocked down the sheet are quickly raised above the guides 25 26 by the action of the spring 33 in time to afford free passage for the front end of the succeeding sheet and remain so raised until the whole length of the latter sheet has arrived over the table, when they are again depressed.

What I claim as my invention is—

1. The combination with cutters for cutting sheets from a running web and a table for receiving the so-cut sheets, of an intermittently-operated sheet-feeding device located between the said cutters and table having a speed greater than that of the continuous run of the web and of the movement of the cutters and arranged and operated to permit the uncut web to pass through it and to engage the same as and after the sheets have been severed from the web, for carrying the severed sheets to the table.

2. The combination with cutters for cutting sheets from a running web and a table for receiving the so-cut sheets, of sheet-feeding reels between said cutters and table having a speed greater than that of the continuous run of the web and of the movement of the cutters, means for separating said reels while the uncut web is passing between them and means for pressing them together during and after the severing of the sheets from the web for carrying the severed sheets to the table.

3. The combination with cutters for cutting sheets from a running web and a table for receiving the so-cut sheets, of a sheet-feeding device between said cutters and table, a guide between said sheet-feeding device and table for directing the sheets from said sheet-feeding device over the table, a second guide arranged over the table, and knockers arranged to operate between said guides for knocking down the tail ends of the sheets as they arrive over the table.

4. The combination with cutters for cutting sheets from a running web and a table for receiving the so-cut sheets, of an intermittently-operating sheet-feeding device be-



5 between said cutters and table, a guide between said sheet-feeding device and table for directing the sheets from said sheet-feeding device over the table, a second guide arranged over the table, knockers arranged to operate between said guides for knocking down the tail ends of the sheets as they come over the table, a sheet-stop at the forward end of the table and a jogger at the rear end of the table.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 13th day of March, 1905.

CHARLES P. COTTRELL.

Witnesses:

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ARCHIE C. THOMPSON.