

942,296.

36
35
34
27
29
26
37
39
41
40
42
38
43
46
44
45
4
3
2
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
33
32
31
30
24
23
22
21
20
19
10
9
8
7
6
5
4
3
2
1

TOP OF PAPER FILE.

J. J. J.

WITNESSES

INVENTOR

E. Nottingham
G. P. Downing.

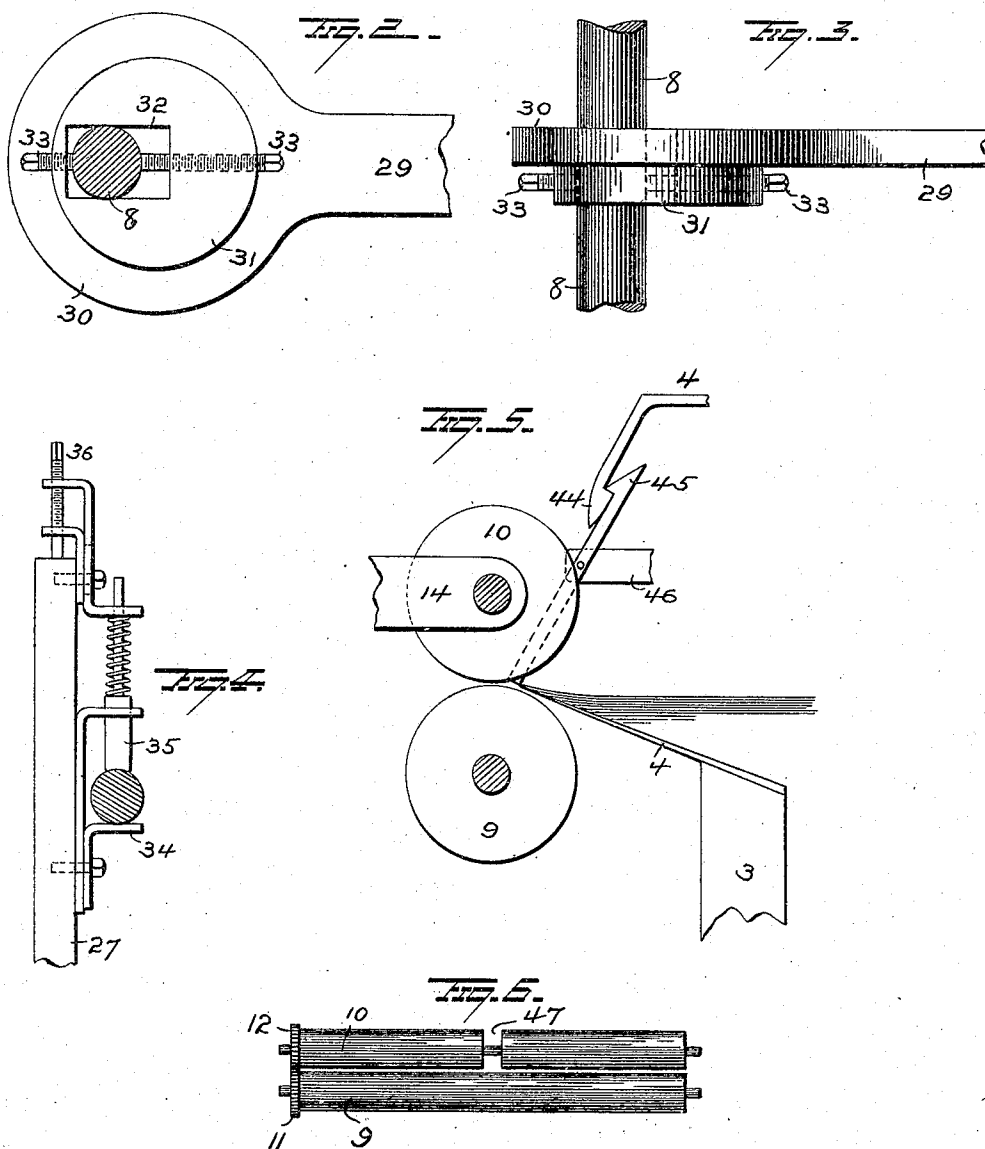
J. E. Tucker
Capt. A. Seymour Attorney

J. E. TUCKER.
PAPER FEED MECHANISM FOR PRINTING PRESSES.
APPLICATION FILED MAR. 18, 1907.

942,296.

Patented Dec. 7, 1909.

2 SHEETS—SHEET 2.



WITNESSES
E. Nottingham
G. J. Downing.

INVENTOR
J. E. Tucker
By H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

JUNIUS EDGAR TUCKER, OF MEMPHIS, TENNESSEE, ASSIGNOR, BY MESNE ASSIGNMENTS, TO TUCKER FEEDER COMPANY, OF AUGUSTA, MAINE.

PAPER-FEED MECHANISM FOR PRINTING-PRESSES.

942,296.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed March 18, 1907. Serial No. 362,953.

To all whom it may concern:

Be it known that I, JUNIUS E. TUCKER, of Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Paper-Feed Mechanism for Printing-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

My invention relates to improvements in paper feeding mechanism for printing presses, the object of the invention being to provide improved mechanism for feeding the paper sheets to the tapes for carrying the sheets to the platen, improved means for adjusting the pressure of the sheet feeding fingers, and improved mechanism for moving the feeding rolls to grasp a sheet presented thereto.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation illustrating my improvements. Figs. 2 and 3 are enlarged views showing the connection of the rod 29 with the shaft 8; Fig. 4 is an enlarged detail view showing the yielding connection between the rod 29 and upright 27; Fig. 5 is an enlarged detail view showing the feed rollers 9, 10, guide plate 4, and trip devices 44-45, and Fig. 6 is a detail view showing the feed rollers.

The feeding mechanism is applied to a printing press, and mounted on the frame thereof. For sake of clearness, I have not shown the various parts of the press frame in the drawing but have shown the relation of the feeding mechanism to the platen 1 of the press.

A table 2 is provided for the reception of a pile of paper sheets to be fed to the platen. This table may be fed upwardly by means of any approved devices (not shown), and at one side of the table, a guide 3 is located, said guide being provided at its upper end with an inclined plate 4 to direct the sheets from the pile to feed rollers hereinafter described.

A gear 5 is mounted on the frame of the press and receives motion from a gear 6 of

the press. The gear 5 transmits motion to a larger gear 7 secured to a shaft 8 located above the gear 5. Two feed rollers 9, 10 are disposed to receive paper sheets directed thereto from the pile of sheets by the inclined plate 4. The feed rollers 9, 10 are provided with intermeshing pinions 11, 12, the teeth of which are of sufficient length to permit one of said feed rollers to have a slight movement toward and away from the other. Motion is transmitted to the feed rollers 9, 10 by means of a pinion 13 interposed between the pinion 11 and the gear 5. The upper feed roller 10 is mounted in a bracket 14 pivoted at 15 and provided with an arm 16 having a roller 17 at its free upper end. The large gear 7 is provided with a cam 18 which coöperates with the roller on arm 16 and causes the upper feed roller 10 to be pressed downwardly after a paper sheet has entered between the feed rollers and thus insure the proper forward feeding of the sheet. When a sheet shall have passed between the feed rollers, it will be delivered to feeding tapes 19, 20 by which the sheet will be carried to suitable guide devices (not shown) for directing it to position on the platen 1 of the press. The feeding tapes 19 pass over the feed roller 10 and a roller 21 disposed over the platen 1, and the lower feeding tapes pass over the lower feed roller 9 and a roller 22 disposed under the roller 21. The feeding tapes are guided by idlers 23 carried by suitable brackets 24.

A frame 25 is disposed horizontally near the top of the frame work of the press and over the table on which the pile of paper sheets are to be located. Beneath the frame 25, a horizontal bar 26 is located and provided at its ends with upright arms 27-28 attached at their upper ends to the frame 25. The bar 26 is so located as to be disposed a comparatively short distance above the top of the pile of sheets on the table 2, and between the frame 25 and bar 26, a horizontal reciprocating rod 29 is located. One end of this rod is provided with a circular enlargement 30 mounted upon an eccentric 31 on the shaft 8, so as to cause the rotation of said shaft to impart a reciprocating motion to the rod 29. Means for feeding the paper sheets from the pile of sheets are connected with the rod 29 (as hereinafter described) and therefore it is desirable that provision be made for adjustment of the

throw of said rod. To accomplish this, the eccentric 31 is provided with an elongated slot 32 through which the shaft 8 passes and adjusting screws 33—33 are provided for retaining the cam on the shaft in any position to which it may be adjusted. The arm 27 at one end of the bar 26 is provided with a bearing or rest 34 for the rod 29, but when the feed devices carried by this rod are in position to feed a paper sheet, the rod 29 will be elevated somewhat above the bearing or rest 34. It is desirable however, that means be provided for regulating the pressure of the said feed devices upon the sheets on the pile of sheets. For this purpose, a spring-pressed bar 35 is mounted in suitable guides on the arm 27, and a screw 36 is provided for adjusting the tension of the same.

It now remains to describe the construction of the devices above referred to for feeding the sheets of paper from the pile of sheets.

A bracket 37 is secured to the rod 29, at a point intermediate the ends of the latter and provided in its lower end with a socket for the reception of the shank of a scraper finger 38, adapted to engage the top sheet on the pile and feed it forwardly to the feed rollers 9, 10 as said finger is moved forwardly by the motion of the rod 29. When the paper sheet enters between the feed rollers, the operation of the scraper finger on this sheet should stop. For accomplishing this automatically, the devices now to be described are employed.

A cam block 39 is pivoted at 40 to the lower part of bracket 37 and projects below said bracket. The cam block is weighted at 41 and at the opposite side of its pivotal support, said cam block is provided with a laterally projecting pin 42. A lever 43 is pivotally attached to the arm 28, and the long arm of this lever rests upon the pin 42 of cam block 39. The short arm of the lever 43 is provided with a detent 44 which engages a detent 45, the latter being pivoted between its ends to an arm 46 projecting from one end of the bar 26. The lower arm of the detent 45 projects across the path of a paper sheet entering between the feed rollers 9, 10. To enable this detent to be so located that it will be engaged by a paper sheet at the same time that the feed rollers receive the sheet, the upper feed roller 10 is provided with a peripheral groove 47. Now it will be observed that when the scraper 38 has fed a sheet from the pile to the feed rollers, the forward end of the sheet will engage the detent 45 and move it so as to release the detent 44. The lever 43 will thus be released and the weight of its long arm

upon the pin 42, will overbalance the weighted portion of the cam blocks 39 and cause the latter to turn and engage the horizontal bar 26. As the rod and scraper finger which it actuates continue to move forwardly, the cam block 39 will roll on the horizontal bar 26 and thus cause the parts which carry the scraper finger to rise and the scraper to leave the paper sheet, thus arresting any further feeding of the latter by the scraper. During the return movement of the rod 29 and the parts carried thereby, the cam block 39 will roll in the reverse direction, causing the engagement of the pin 42 with lever 43 to raise the latter and re-set the detents 44—45. The parts are then in position to feed the next sheet from the pile to the feed rollers.

It will be understood that a series of scraping fingers may be provided if desired.

Various slight changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope, and hence I do not wish to limit myself to the precise details herein set forth.

Having fully described my invention, what I claim as new and desire to secure by Letters-Patent, is:—

1. In a feeding mechanism, the combination with a stationary bar, a rod disposed above said bar, and means for reciprocating said rod, of a bracket secured to the rod, a scraper finger carried by said bracket, an elongated cam block pivotally supported by said bracket and weighted at one side of its pivotal support, means controlled by a paper sheet for holding said cam block out of contact with the stationary bar and for releasing said cam block to permit it to engage said stationary bar during a portion of the travel of the rod and scraper finger to raise the latter.

2. In a feeding mechanism, the combination with a frame, a stationary bar secured to said frame, and a shaft, of a slotted eccentric mounted on said shaft, screws for adjusting the eccentric relatively to the shaft, a rod connected with said eccentric, a scraper finger carried by said rod, and a cam block cooperating with said finger and the stationary bar to raise said finger and the reciprocating rod during a portion of the travel of the same.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

JUNIUS EDGAR TUCKER.

Witnesses:

JAMES THOMAS FERGUSON.

HUGH BARCLAY WHITE.