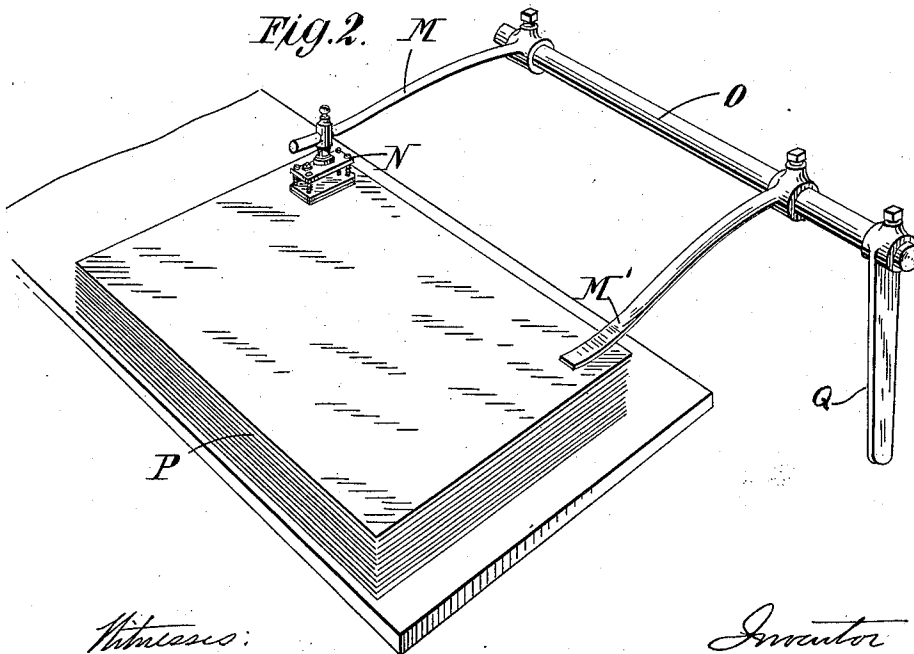
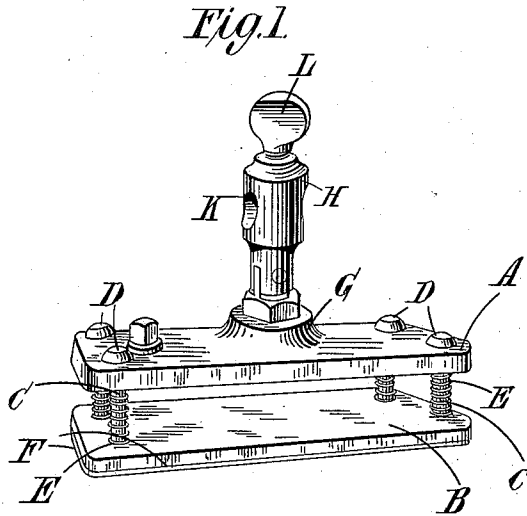


W. MATTHEWS.
PAPER FEEDING DEVICE.
APPLICATION FILED MAY 20, 1911.

1,045,418.

Patented Nov. 26, 1912.

2 SHEETS—SHEET 1.



Witness:
J. C. Rust
A. E. Hansmann.

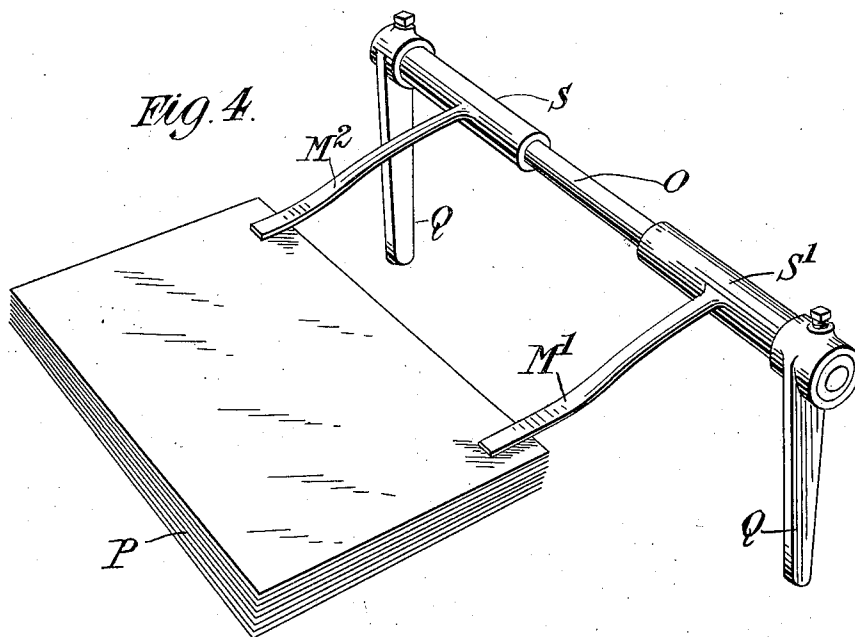
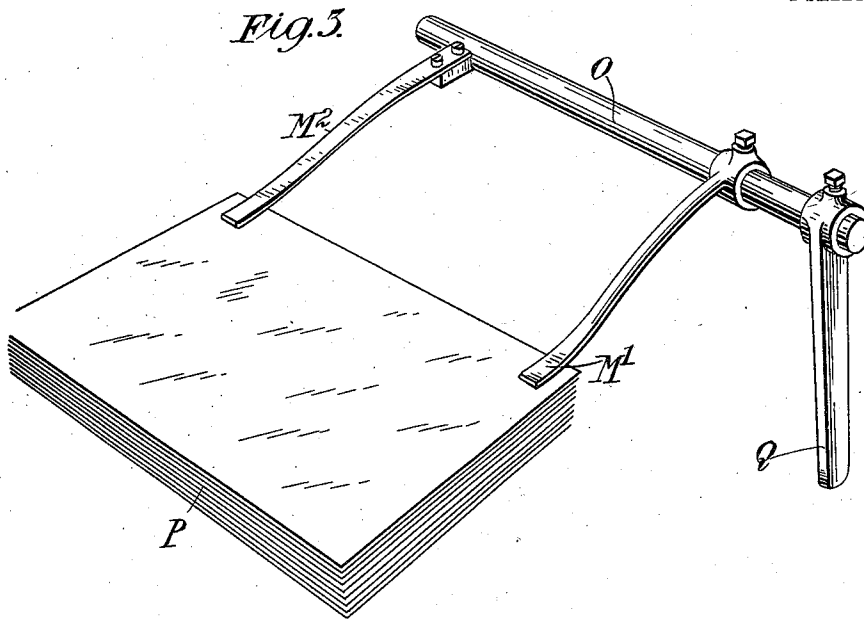
Inventor
William Matthews
by Foster Freeman Watson & Co.
Attys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

WILLIAM MATTHEWS, OF LONDON, ENGLAND, ASSIGNOR TO GEORGE WILLIAM JONES,
OF LONDON, ENGLAND.

PAPER-FEEDING DEVICE.

1,045,418.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed May 20, 1911. Serial No. 628,423.

To all whom it may concern:

Be it known that I, WILLIAM MATTHEWS, a subject of the King of England, residing in London, England, have invented certain new and useful Improvements in Paper-Feeding Devices, of which the following is a specification.

The present invention relates to feeding devices for printing and other machines and more particularly to automatic feeding devices therefor.

I will describe my invention as applied to printing machines of the type usually known as flat bed, although it is not necessarily limited thereto but may be applied to any kind of machine requiring to be fed with sheets of material. In such machines a feeding device is employed which comprises two feelers mounted upon levers carried by a shaft suitably journaled and adapted to rock the shaft when the pile or stack of papers upon which the feelers rest becomes depleted. When the pile or tack diminishes owing to the sheets being fed into the machine the feelers remain in contact with the top sheet and descend so as to rock the levers and by means of mechanism which forms no part of the present invention operates a trip-latch which by means of a cam actuated mechanism restores the pile of paper to its proper level. Hitherto it has been found that the surface of the pile or stack of paper does not remain flat, that is to say, one end or edge as the case may be is at a lower level than the other portions of the top of the pile and consequently the feelers hitherto employed have not satisfactorily governed the feeding operations, for one feeler resting on the pile may if the pile is aslant and the feelers are rigidly interconnected, hold its companion up at the same level, where it will not bear upon that part of the slanted pile which is beneath it.

The object of the present invention is to overcome this draw-back and my invention consists in making the feelers automatically adjustable so as to compensate for variations in the level of different portions of the pile or stack of paper being fed into the machine for the purpose that they can bear on both ends of the front margin of the top of the pile even though it be or become slanted or curved.

Referring to the accompanying drawings:—Figure 1 illustrates a feeler or “dab-

ber” constructed in accordance with the present invention, and Figs. 2, 3 and 4 illustrate diagrammatically modifications of my invention.

Referring to Fig. 1, the feeler or “dabber” is composed of a plate A and a plate B of any suitable thickness and of substantially the same area. Plate B is provided with a number of bolts or pins C which register with and pass through perforations in the plate A. The bolts or pins C are tapped or riveted or otherwise secured to the plate B and at their upper extremities are provided with heads or collars D for the purpose hereinafter referred to. Interposed between the plates and surrounding the bolts or pins C are helical springs E which normally retain the parts in the position shown in Fig. 1, the heads D serving to prevent the plate B and bolts C from being separated from the plate A. The bottom plate B is covered with a sheet of resilient or other suitable material F, for instance rubber. The plate A is provided with a boss G to which is secured a rod or post H perforated and provided with a set screw L. By means of this arrangement the feeler or “dabber” may be adjusted and secured in position upon a rod which passes through the opening K.

Referring now to Fig. 2, M indicates the rod which passes through the opening K and carries the feeler represented as a whole at N. The rod M is mounted upon a shaft O which also carries a second arm M' which in the present case is not provided with a feeler or “dabber.” As the top sheets of the pile of paper P are removed the arms M and M' will fall by gravitation and in falling will rock the shaft O and consequently the member Q, which latter when it has moved sufficiently far operates a trip-latch in the well known manner and causes a cam actuated mechanism to restore the pile of paper to its proper level.

In the ordinary way if the surface of the pile of paper P becomes inclined or curved and the two arms M and M' are rigidly interconnected one or other of the arms would be in contact with the paper and consequently, as for instance when a pneumatic blast is employed for separating the top sheets of paper, the separation would not be satisfactorily performed. According to the present invention, however, if that portion

of the pile immediately below the "dabber" N is higher than the portion below the arm M' the plate B will be arrested by the pile, but this will not stop the descent of the arm M' for the arm M and plate A will continue to descend, the springs between the plates A and B yielding to permit this and at the same time allowing the arm M' to come into contact with the pile of paper.

10 It should be noted that in the construction shown in Fig. 1 the plate B may assume positions which are not parallel with the plate A so that the bottom surface of the "dabber" always makes good contact with the

15 paper. In order for the bottom plate B to assume positions which are not parallel with A I make the holes in the plate A through which the pins C pass with sufficient clearance. Of course a "dabber" may be suitably located on the arm M' if desired.

Instead of using the construction shown in Fig. 1 located near the end of the arm M, I may substitute for the arm M shown in Fig. 2 a plate or leaf spring arm M² suitably secured to the shaft O as shown in Fig. 3.

Instead of arranging that the end of the "dabber" (such as is constituted by the plate A in Figs. 1 and 2) should yield under the control of springs, it may be loaded by gravity alone as in Fig. 4 in which the arm M² is carried by a sleeve S loose on the shaft O and independent of the sleeve S' which carries the arm M'. The arm M' is also provided with a member Q which independently controls the operation of the same mechanism to restore the pile of paper to its proper level.

What I claim as my invention and desire to secure by Letters Patent is:—

40 1. In a paper-feeding device the combination of a plurality of feelers, a rocking member supporting each feeler, means whereby at least one of the feelers will be automatically adjusted to the work beneath it irrespective of the position of any other feeler, and means whereby an adjusting mechanism for a paper-support can be controlled by any of the feelers individually.

2. In a paper-feeding device the combination of a plurality of feelers, a rocking member supporting each feeler, a yielding device

interposed between the connection of at least one feeler with its rocking member and the paper over which it projects, and means whereby an adjusting mechanism for a paper-support, can be actuated by any of the feelers individually.

3. In a paper-feeding device the combination of a plurality of feelers arranged to project over a paper support, a rocking member supporting each feeler, and an adjusting means in connection with at least one of the feelers whereby it may be automatically adjusted for cooperating with the paper beneath it irrespective of the position of any other feeler.

4. A paper-feeding device of the character referred to comprising a rocking member, a rigid feeler carried by said rocking member, and a yielding feeler carried by said rocking member.

5. In a paper-feeding device the combination of a plurality of feelers, a rocking member supporting each feeler, and a member secured to the extremity of one of the feelers and comprising two plates, the upper one of which is secured rigidly to the feeler so that it is normally substantially parallel to the work beneath it, while the lower plate is capable of moving toward or away from the first plate, and spring-members between the two plates tending to separate them.

6. In a paper-feeding device the combination of a rocking-feeler supporting member, and a feeler comprising two normally parallel plates, springs arranged between the two plates to keep them normally spaced from one another, and a projection from the top plate, connected with said rocking member.

7. In a paper feeding device the combination of a yielding feeler or "dabber" and a rigid feeler or "dabber" mounted upon the same shaft and operating substantially as hereinbefore described.

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

WILLIAM MATTHEWS.

Witnesses:

HARRY B. BRIDGE,
PERCY G. HEWITT.