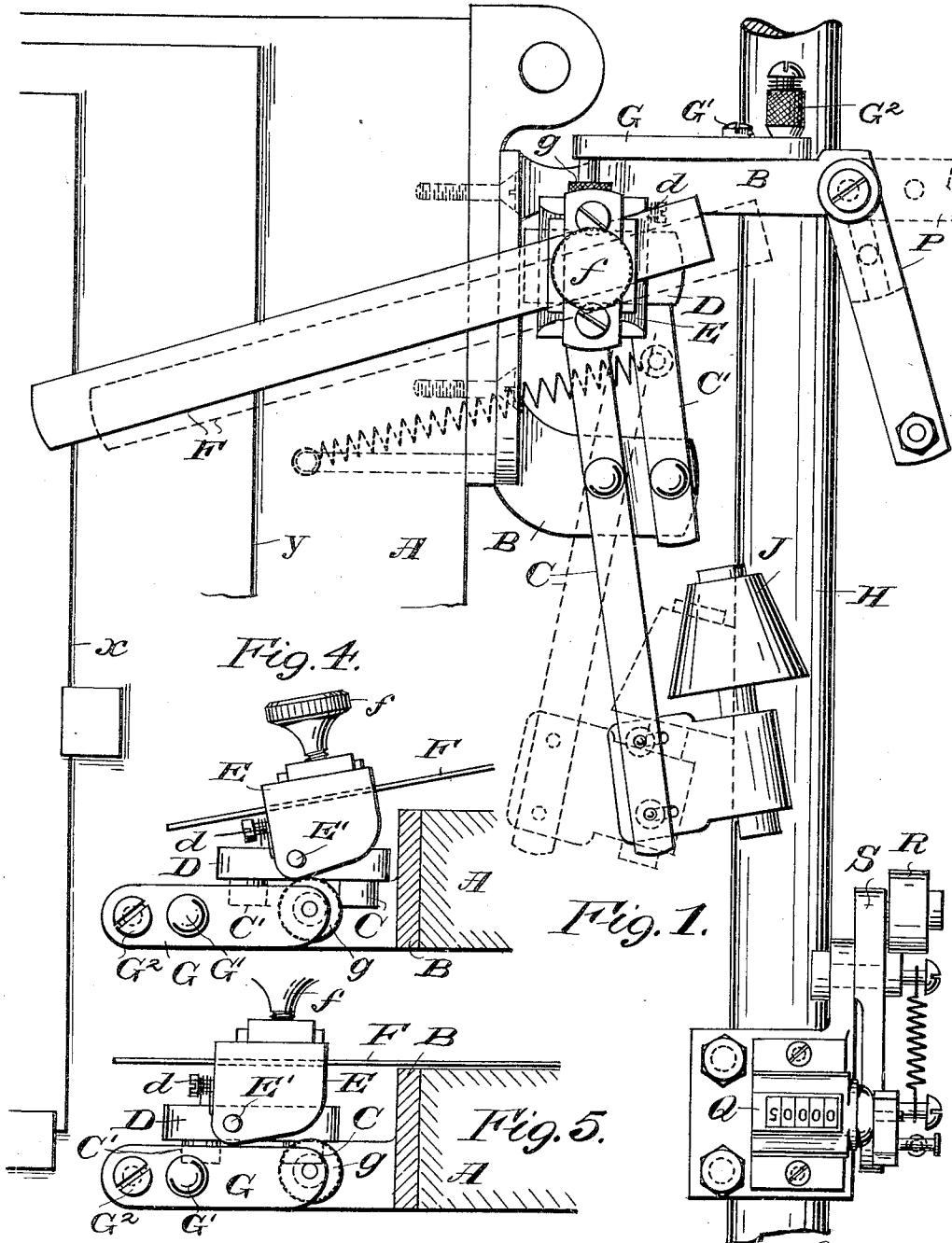


C. WOLSTENHOLME.
PLATEN PRINTING PRESS.
APPLICATION FILED JULY 16, 1913.

1,130,232.

Patented Mar. 2, 1915.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

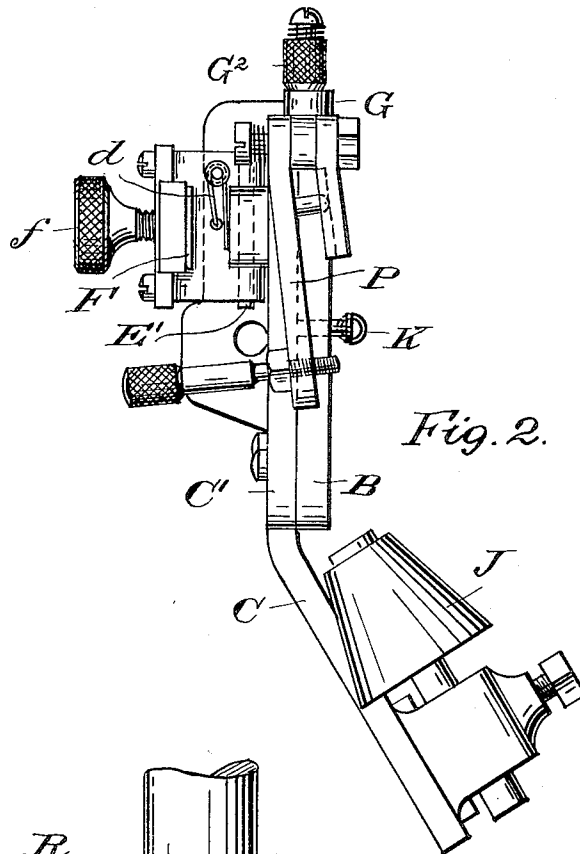


Fig. 2.

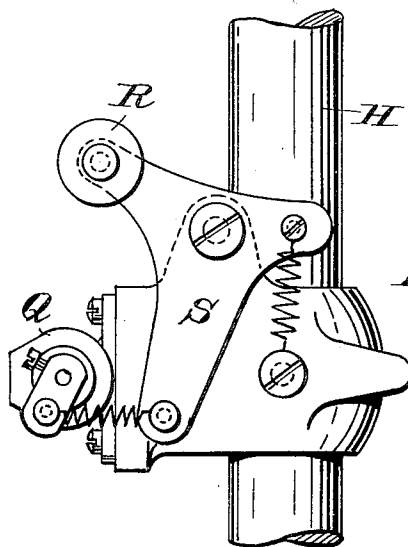


Fig. 3.

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4 SHEETS—SHEET 3.

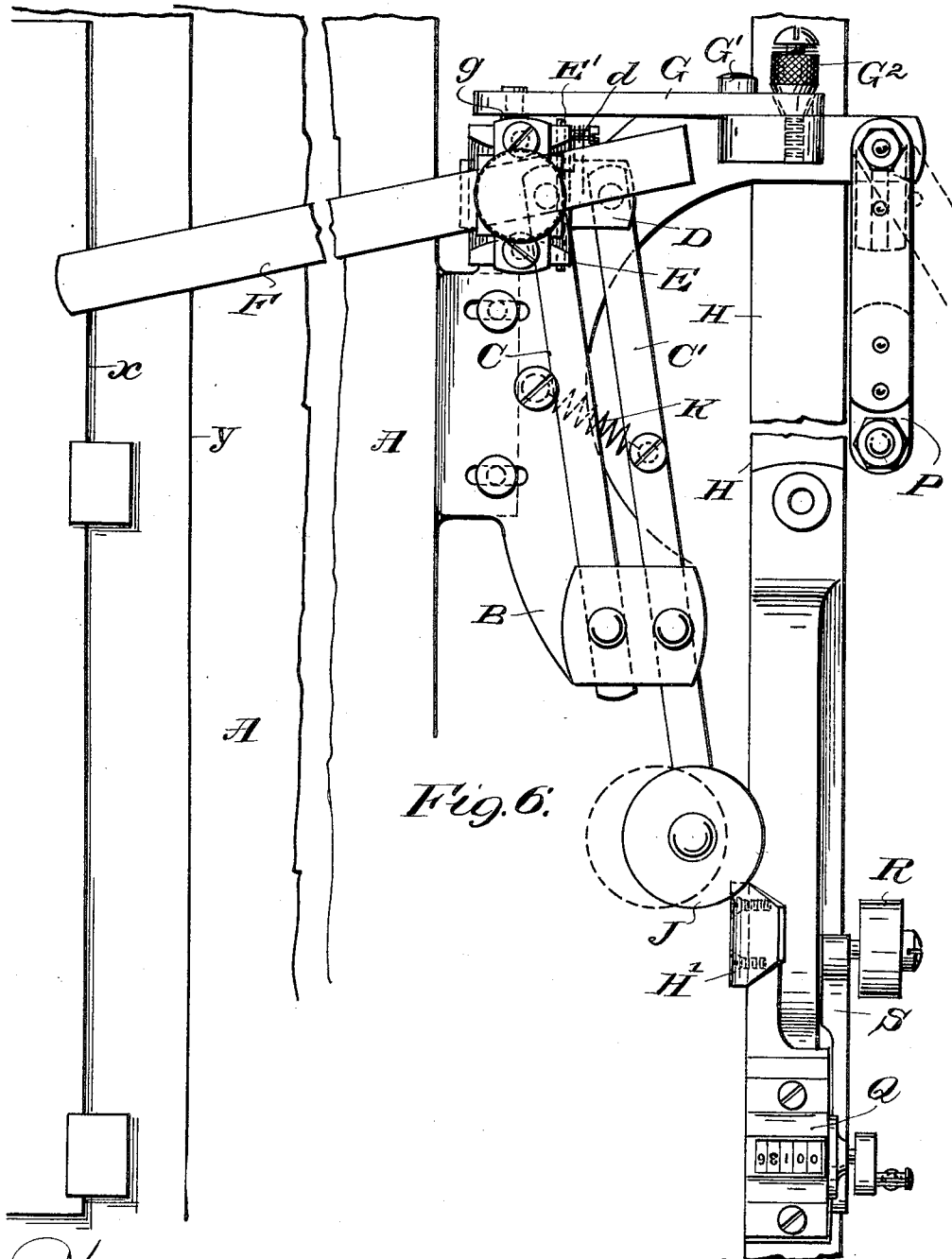


Fig. 6.

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4 SHEETS—SHEET 4.

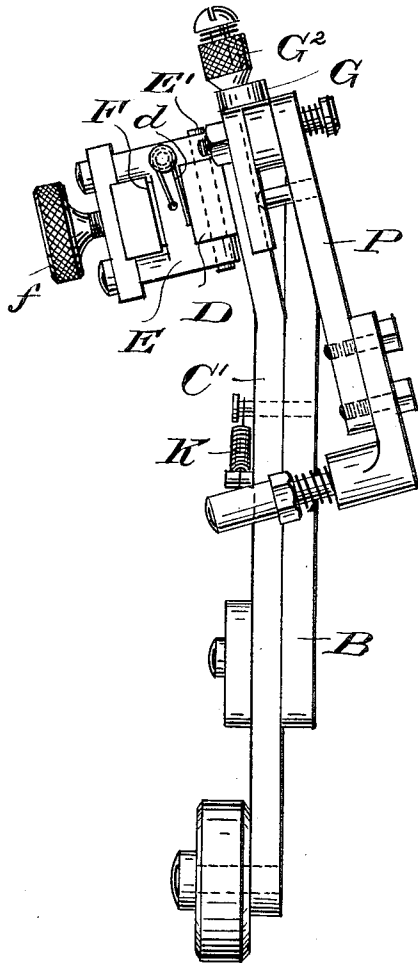


Fig. 7.

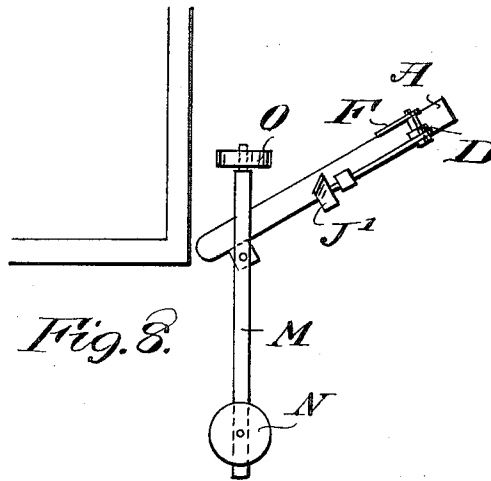


Fig. 8.

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UNITED STATES PATENT OFFICE.

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PLATEN PRINTING-PRESS.

1,130,232.

Specification of Letters Patent.

Patented Mar. 2, 1915.

Application filed July 16, 1913. Serial No. 773,262.

To all whom it may concern:

Be it known that I, CHARLES WOLSTENHOLME, a subject of the King of Great Britain and Ireland, and a resident of Blackpool, in the county of Lancaster, England, have invented new and useful Improvements in Platen Printing-Presses, of which the following is a specification.

This invention relates to improvements in and connected with the lifting finger by means of which a printed sheet of paper is raised from the platen of a printing press.

A lifting finger constructed disposed and operated according to this invention differs essentially from lifting fingers previously known, such, for example, as are described in the specifications to my British Letters Patent Nos. 5606 and 29340 both of 1910. The finger previously employed has had the sheet or card which was to be printed laid over or upon it, and has remained behind such sheet or card or between it and the platen packing during the impression. This arrangement has many disadvantages. According to this invention the finger is so arranged or disposed and combined with such operating appliances that when it is raised to lift a sheet of paper during the opening stroke of the platen, it may remain in such position for a sufficient length of time to enable a fresh sheet or card to be laid between it and the platen. During the impression stroke at any desired or predetermined point, the finger is moved or withdrawn or retracted to such a position that no part of it is over or upon or underneath the sheet or card and is lowered down on to the platen or packing. The impression then takes place and on the opening stroke the finger moves inward along the packing or platen until its end (which is properly shaped for the purpose) comes under the sheet or card. The finger or its end is then raised to lift the sheet or card and the operations are repeated. The finger is preferably adjustably mounted in its holder or support so that it can be "set" for different sizes of sheets or cards.

The accompanying drawings illustrate mechanism by which the invention may be carried into effect.

Figure 1 shows one form of such mechanism viewed from the impression face of the platen, with the paper lifting finger in its

raised position. While the finger is in this position a sheet of paper may be placed between it and the platen. Fig. 2 illustrates the same parts in edge elevation. Fig. 3 is a side view of counting apparatus attached to one of the draw bars by which the platen is drawn against the form. The same counting mechanism is shown in plan in Fig. 1. Figs. 4 and 5 are detail views of the swing block carrying the paper lifting finger, the first figure showing the finger raised from the platen, the latter showing it flat thereon. Figs. 6 and 7 are views which correspond generally to Figs. 1 and 2 but with different details of mechanism. Fig. 8 is a diagrammatic view of a further modification.

Referring first to Figs. 1, 2, 4 and 5 A is a platen which may be oscillated in any of the well known ways common to printing presses. Secured to its edge is a bracket B one limb of which carries pivoted upon it the parallel swing arms C C'. At their ends these arms transversely carry a block D hinged to them so that the bars have parallel motion. This block D has mounted upon it the swing block E by the pin E¹, which block adjustably carries the paper lifting finger F clamped in place by a thumb screw f. One of the lower faces of the block E is so shaped and disposed as to operate in conjunction with a friction bowl g carried by a lever G secured to the bracket B and with a spring d, to tilt the block around its pin E¹ and angularly lift or lower the finger F. The lever G is pivoted at G¹ on the bracket B. At the end which does not carry the bowl g it has a hole engaged by the coned end of a nut G² carried by a screw which passes through the hole. With the bowl g in its lowest or most depressed condition from the block E¹ the hole in the end of the lever G is not concentric with the nut G² and this nut being screwed down, engages by its coned end with the lower edge of the hole only, and depressing this end raises and adjusts the position of the bowl g. With the different parts in the position of Fig. 1 the finger F is in its raised position, the block E being tilted by contact with the bowl g as shown in Fig. 4. The impression stroke has commenced and a sheet of paper for the next impression is placed on the platen under the finger F. At a convenient

time before the impression takes place some part or member disposed on the draw bar H which diagonally crosses the path of the platen comes against the friction bowl J carried by an extension of the arm C, and moves such extension from the position shown in full lines in Fig. 1 to that shown in broken lines. As this extension moves to the left in Fig. 1 the block D carrying the swing block E moves to the right, and from the position shown in Fig. 4 to the position shown in Fig. 5. The block E is thus moved bodily away from the edge of the platen, taking the finger F with it from the position shown in full lines in Fig. 1 to that shown in broken lines. This movement allows the swing block E to tilt to the position of Fig. 5 by its removal from the bowl *g*. This tilting of the block E under the influence of its springs *d* brings the end of the finger F flat down on to the platen or packing *y* in the position shown in broken lines Fig. 1. The end of the finger F is now free of the area occupied by the sheet *x*. The draw bar retains the parts so as to keep the finger down on the platen or packing until after the impression is made. During the opening stroke of the platen the draw bar and the bowl J move free of each other and the different parts of the finger operating apparatus are free to return under the pull of the spring K to the full line positions of Fig. 1. In thus returning, the block D and the swing block E are moved from the position of Fig. 5 to that of Fig. 4. During the first part of this movement the end of the finger moves upon and along the surface of the platen or packing until its end comes under the edge of the sheet of paper *x*. The end of the finger is properly shaped and pressed down on to the platen to insure that it does pass under the edge of the sheet, and indeed it may form or have formed for it a slightly recessed path in the packing *y*. When the end of the finger F has entered under the edge of the sheet *x* further movement of the blocks D and E inward toward the edge of the platen A results in the block E coming upon the bowl *g* and being tilted as shown in Fig. 4. The finger F is thus lifted from the platen as well as moved farther inward and lifts with it the sheet *x*. The sheet *x* is then removed. The finger F remains lifted until the next impression stroke has been partly made and the operations described are then repeated. If desired of course the occurrence of the positively controlled and the spring controlled operations of the parts may be reversed. That is, the blocks D and E may be moved positively in toward the platen by engagement of some part of the draw bar with the bowl J, and a spring may be employed to move the blocks to the position of Fig. 5.

The arrangement of the extension of the

arm C and the bowl J of Figs. 1 and 2 are specially intended for use with the Arab type of machine.

In Figs. 6 and 7 the finger operating parts are essentially the same as in Figs. 1 and 2. The arm C¹ is however in this case extended and its extension and the bowl J are of the form shown. The bowl is operated by a ramp plate H¹ attached to the draw bar H. This modification is intended for use in the Phoenix type of machine.

The movement of the swing arms toward or away from the platen may be otherwise effected than from the draw bar or from any other suitable and positively operated part of the machine. As shown by the diagram Fig. 8 a lever M may be pivoted to the edge of the platen and be so weighted at its lower end N as always to maintain a vertical position. The upper end of the lever carries an antifriction bowl O. At a certain point during the impression stroke of the platen A the friction bowl O intercepts the path of an inclined extension or ramp J¹ forming part of the arm C¹. By engagement of the bowl O and ramp J¹ the block D is forced away from the edge of the platen. This engagement is maintained until the ramp J¹ leaves the bowl O during the opening stroke of the platen and thus permits the block D to return to the platen under the pull of a suitable spring.

P indicates an angularly movable arm attached to the bracket B. When in the position shown in full lines it is adapted to operate the counting mechanism Q through the medium of a bowl R attached to the operating lever S. The counting mechanism is carried on the draw bar H. When the arm P is moved to the position shown in broken lines it misses the counting mechanism which is then inoperative.

It is evident of course that the timing of the sequence of operations may be varied as compared with the acts of the operator. Thus the finger F may move to its position outside the area to be occupied by the sheet of paper before the sheet is put in place.

What I claim is:—

1. In a platen printing press, the combination of a platen, a lifting finger for the printed sheet mounted on said platen, means for lifting the finger during the opening stroke of the platen, means for withdrawing the finger from opposite the area of the platen occupied by a sheet, and means for returning the finger to and closely upon the area occupied by a sheet, substantially as set forth.

2. In a platen printing press the combination of a platen, a lifting finger for the printed sheet, means for lifting the finger during the opening stroke of the platen, means for laterally withdrawing the finger and bringing it down on the platen clear of

the sheet area during the impression stroke, and means for laterally moving the end of the finger along the platen to and upon the sheet area during the opening stroke of the platen, substantially as set forth.

3. In a platen printing press the combination of a platen, a lifting finger for the printed sheet which lifting finger after lifting a printed sheet is withdrawn from opposite the sheet area until another impression stroke has been made when it is again returned to and upon the sheet area to again lift, and means for operating the said finger such means comprising parallel swing arms attached to the platen, means for reciprocating said parallel swing arms, a tilting finger carrying block mounted on the parallel swing arms, and means for tilting the said block as it is reciprocated by the parallel swing arms, substantially as set forth.

4. In a platen printing press the combination of a platen, a lifting finger for the

printed sheet which lifting finger after lifting a printed sheet is withdrawn from opposite the sheet area until another impression stroke has been made when it is again returned to and upon the sheet area to again lift, and means for operating the said finger, comprising a weighted lever hinged to the platen so as to remain vertical, parallel swing arms attached to the platen and reciprocated by said weighted lever, a tilting finger carrying block mounted on the swing parallel arms, and means for tilting the said block as it is reciprocated by the said weighted lever, substantially as set forth.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

CHARLES WOLSTENHOLME.

As witnesses:

JOHN O'CONNELL,
FRANK A. HEYS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."