

L. M. STOLL.
 THROW-OFF ATTACHMENT FOR MULTIGRAPH PLATENS.
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 2 SHEETS—SHEET 1.

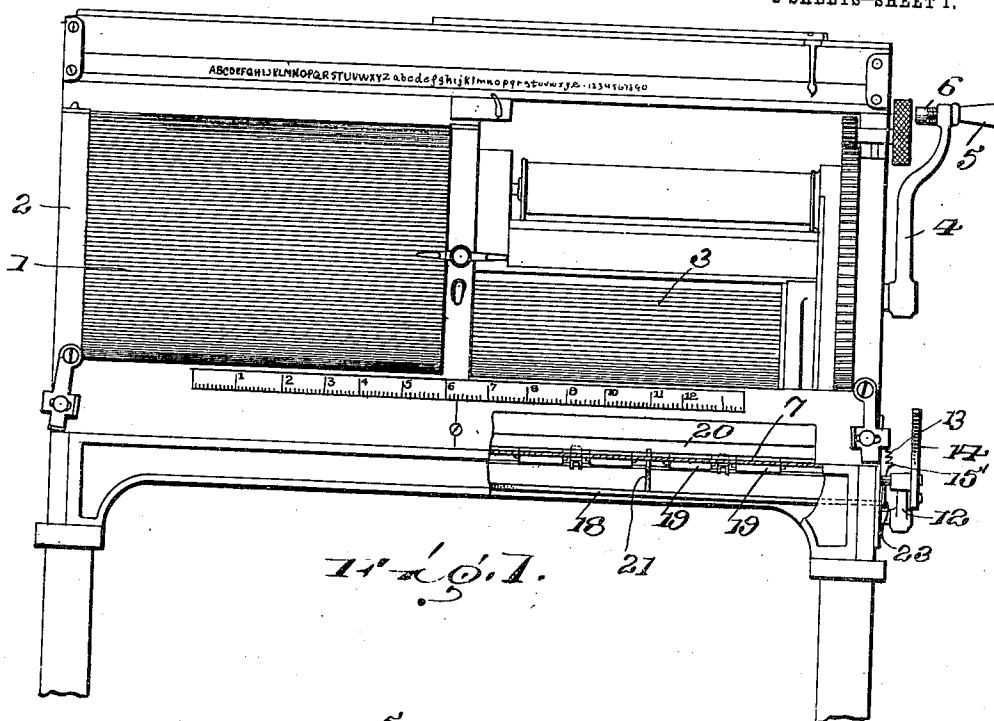


Fig. 1.

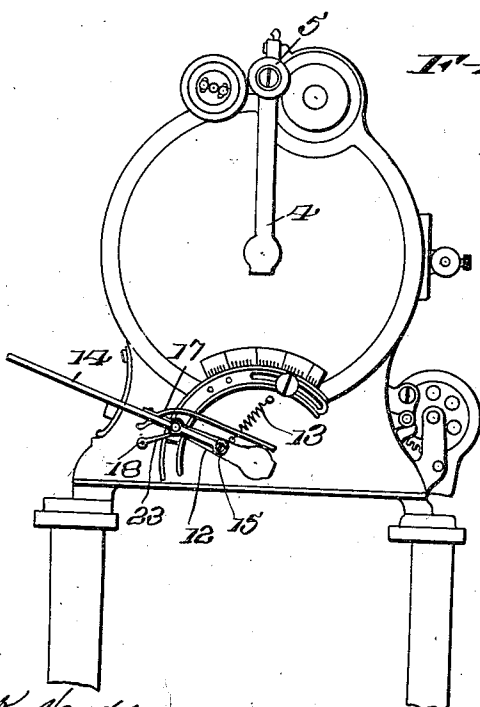


Fig. 2.

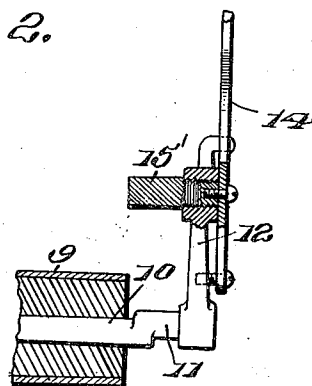


Fig. 3.

Witnesses

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THROW-OFF ATTACHMENT FOR MULTIGRAPH-PLATENS.

1,055,682.

Specification of Letters Patent.

Patented Mar. 11, 1913.

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To all whom it may concern:

Be it known that I, LOUIS M. STOLL, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented certain new and useful Improvements in Throw-Off Attachments for Multigraph-Platens, of which the following is a specification.

This invention relates to improvements in multigraph and similar machines, and more particularly to a mechanism for "kicking" off the platen of such a machine when the member which coöperates with the platen, such as the printing drum, is rotated into coöperative relation to the platen and a sheet of paper has not been fed to the platen. In such machines, as at present constructed, when the operator fails to feed a sheet of paper between the platen and the printing drum and the drum is rotated to coöperate with the platen, the platen is printed upon and the next several sheets fed through the machine will be printed both upon the front and back.

The present invention therefore aims to provide means for automatically moving the platen out of coöperative relation to the printing drum, should a sheet of paper fail to be fed between the platen and the drum.

In this connection, the invention contemplates the provision of means for normally tending to move the platen moving member of the machine to position the platen in coöperative relation to the printing drum and means upon the lever or other member for rotating the drum to coöperate with the platen moving member to move the same out of such position at each revolution of the drum and immediately prior to the time the drum assumes its printing position. In connection with the platen moving member the invention contemplates the provision of means for holding it when moved to such position and means actuated by the feeding of a sheet between the platen and printing drum to render the latter means inoperative and release the platen moving member. By such a construction, the operation of the device is dependent solely upon the feeding of the cylinder to feed a sheet to the platen and printing drum and the attention of the operator is therefore not required.

For a full understanding of the invention reference is to be had to the following de-

scription and accompanying drawing, in 55 which:—

Figure 1 is a front elevation partly in section of a multigraph equipped with the invention. Fig. 2 is a side elevation thereof, the platen moving lever being shown in position prior to the feeding of a sheet of paper between the platen and printing drum. Fig. 3 is a vertical sectional view from front to rear in a plane through the printing drum and platen and illustrating the member which is to be engaged by a sheet of paper fed between the platen and printing drum. Fig. 4 is a view similar to Fig. 2 illustrating the platen moving lever in position after a sheet of paper has been fed between the platen and printing drum and illustrating in dotted lines the printing drum in position immediately prior to coöperation with the platen. Fig. 5 is a view similar to Fig. 4 illustrating the manner in which the printing drum rotating crank coöperates with the platen moving lever. Fig. 6 is a perspective view showing the platen moving lever and the detent therefor. Fig. 7 is a diagrammatic view illustrating the relation of the platen to the printing drum when the detent is in engagement with the platen moving lever and prior to the time a sheet of paper is fed between the platen and printing drum. Fig. 8 is a similar view illustrating the relation of the platen to the printing drum when the platen moving lever has been released. Fig. 9 is a detail vertical sectional view through one end of the platen, and through the platen moving lever.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawing by the same reference characters. 65

In the drawings, the supply drum of the multigraph is indicated by the numeral 1 and is mounted in the usual manner in the frame of the machine which is indicated in general by the numeral 2. 100

The printing drum is indicated by the numeral 3 and is mounted beside the supply drum 1, as is usual. This drum is rotated, as is usual, by means of a crank-handle 4 upon the right-hand end of the drum shaft. For a purpose to be presently explained instead of the usual nut for holding the hand-grip 5 of the crank-handle in place, there is 105

provided a stud which is indicated by the numeral 6 and which constitutes an abutment projecting toward the right-hand side plate of the machine frame.

5 The bed-plate of the machine frame is indicated by the numeral 7 and is formed with an opening 8 through which the upper side of the platen 9 projects in position to cooperate with the printing drum. The platen 10 9 is mounted, as usual, upon a spindle 10 having eccentric ends 11, and upon one of these ends there is secured the usual platen moving lever 12 which may be rocked to move the platen into and out of cooperative relation to the printing drum. In the 15 ordinary construction of the multigraph this lever is designed to be moved manually from one position to the other and to be held at either limit of its movement, but in the instance of the present invention, the spindle is so mounted that the lever may be freely swung and a spring 13 is connected to the lever and to the side-plate of the frame and normally tends to swing the lever 20 upwardly to position the platen in cooperative relation to the printing drum, it being understood that when the lever is swung down to move the platen out of such position, it is against the tension of the spring 30 13, that it is moved.

A finger 14 is secured to the platen moving lever by means of a screw 15 passing therethrough and threaded into an opening in the said lever, and a stud 15' is threaded 35 through the said lever and the finger 14 and projects normally laterally beyond the lever. The finger 14 extends beyond the lever 12 in substantial alinement therewith to a sufficient distance to insure engaging of the abutment 40 6 upon the hand-crank 4 therewith at each revolution of the said crank-handle. As before stated, the spring 13 serves to normally hold the lever and the finger 14 thereon normally swung up, in which position 45 the platen will be in position to cooperate with the printing drum when the latter is rotated. However, as will be presently fully explained, the crank-handle 4, at one point in its operative movement will cooperate 50 with the finger 14, through the medium of the abutment 6, to swing the platen moving lever downwardly, thereby moving the platen out of position to cooperate with the printing drum. To secure the engagement 55 of the abutment with the finger, a bowed leaf-spring 17 is secured at one end upon the upper side of the finger 14 and has its other end resting in engagement with the hub of the platen lever, it being understood that 60 the abutment is designed to ride over this spring, as illustrated in Fig. 5 of the drawings.

In connection with the platen moving lever there is provided a detent device illustrated to hold the lever when swung down,

until a sheet of paper has been fed to the platen and printing drum and this detent device will now be explained. A shaft 18 is journaled for rocking movement in the side and intermediate plates of the machine frame in rear of the usual rollers 19, between which and the usual roller 20, mounted thereabove, the sheet of paper to be printed upon is initially fed. A finger 21 70 is fixed upon the shaft 18 and projects with its free end in advance of the rollers 19 and 20 so that a sheet of paper fed between the rollers will ride against the free end of the finger. A spring 22 is connected to the finger and to the under side of the bed-plate 7 and serves to normally hold the finger in the position shown in Fig. 7 of the drawings. Upon the end of the shaft adjacent the platen moving lever 12 there is fixed a detent finger 23 having a hooked end 24. 85

The operation of the machine is as follows:—Supposing the platen moving lever to be in the position shown in Fig. 7 of the drawings, which position it will assume after the printing drum has been given one complete revolution and has been rotated to the left a short distance beyond the position shown in Fig. 5, the hooked end 24 of the detent finger 23 has become engaged with the stud 15' upon the said platen moving lever and the lever will be held in this position during the continued rotative movement of the drum, provided no paper is fed to the platen and printing drum. However, should a sheet of paper be fed by the rollers 19 and 20, it will ride against the free end of the finger 21 and will swing this finger down, thereby rocking the shaft 18 against the tension of the spring 22 and moving the detent finger 23 out of engagement with the stud upon the platen moving lever. The spring 13 will then immediately swing the platen moving lever upwardly and bring the platen into printing relation to the printing drum as shown in Fig. 8. The paper will then be fed between the platen and drum and be properly printed upon. As stated, however, should the operator of the machine fail to feed a sheet of paper as he rotates the printing drum from the position shown in Fig. 5, to and beyond the position shown in Fig. 4, or should an automatic paper feeding mechanism be employed in connection with the machine and fail to operate to so feed a sheet of paper, the printing drum may rotate or be rotated any number of times without making an impression upon the platen for the reason that the platen is then in the position shown in Fig. 7. 120

It will be understood from the foregoing description of the invention that it is not limited to embodiment in a multigraph machine, but may be equally as well employed in adding machines, duplicating machines, and in fact any machine in which there is a 130

platen cooperating with a printing drum or bed.

Having thus described the invention what is claimed as new is:—

5 1. In a platen-controlling device, the combination with a platen, and a printing member arranged to cooperate therewith, of a platen support adapted to move the platen to and from the printing member, a device
10 for moving the printing member to and past the platen, means upon said device adapted during only a portion of its travel to engage the platen support and thereby move the platen from the printing member,
15 means for engaging the platen support to hold the platen away from the printing member, means engaging the platen support and tending to move the platen to the printing member, and means actuated
20 by a sheet fed to the platen to release said holding means.

2. In a platen-controlling device, the combination with a platen, and a printing member, of a device for moving the printing
25 member and having an orbital movement, means normally tending to move the platen toward the printing member, means moving with the printing-member moving device normally free of the platen and the platen-
30 moving means and adapted at one point in its orbit to ride over the platen-moving means and thereby move the platen away from the printing member, means for holding the platen-moving means in such inoperative
35 position, and means actuated by a sheet fed to the platen to release said holding means.

3. In a platen-controlling device, the combination with a platen, and a printing member, of devices at the end of the platen for
40 moving the same to and from the printing member, a device at the end of the printing member for actuating the same, means carried by the device for actuating the printing member normally free of the platen and the
45 platen-moving devices and describing a path which intersects the platen-moving devices when the latter is in operative position whereby to move the same to an inoperative
50 position, and a detent device for holding the platen-moving member when moved to such position, said detent device being arranged to be released by a sheet fed to the platen.

4. In a platen-controlling device, the combination with a platen, and a printing member, of a platen-moving lever, a device for
55 moving the printing member, a stud on said device adapted during a portion of its travel to impinge against the platen-moving lever
60 and thereby move the platen to inoperative position, a detent device for holding the platen when moved to such position, and means normally tending to actuate the
65 platen-moving lever to move the platen into

coöperative relation to the printing member, said detent device being actuated to release the platen-moving lever by a sheet fed to the platen.

5. In a platen-controlling device, the combination with a platen, and a printing member, of a platen-moving member, a member
70 for moving the printing member, means upon the last-mentioned member to actuate the platen-moving member and thereby
75 move the platen to an inoperative position, means acting on the platen-moving member to normally bring the platen to operative position, a rock shaft arranged in advance
80 of the platen-moving member, a detent rigid with said rock shaft and projecting toward the platen and into the path of the platen-moving member to engage said member and hold the platen in inoperative position, and
85 an element fixed upon the rock shaft and arranged for engagement by a sheet fed to the platen whereby to rock the shaft and release the detent from the platen-moving member.

6. In a platen-controlling device, the combination with a platen, and a printing member, of a platen-moving lever, a device for
90 moving the printing member, means upon the said device arranged to actuate the platen-moving lever to move the platen out of position for coöperation with the printing member, a rock shaft arranged in advance
95 of the platen and the platen-moving lever, a detent carried by the shaft and extending toward the platen and the platen-moving lever to engage the lever and hold the platen in inoperative position, a finger
100 fixed upon the shaft and extending toward the platen and the platen-moving lever but diverging from the detent, and means normally acting on the shaft to hold the finger
105 in position for engagement by a sheet fed to the platen, the said finger being arranged to be depressed by said sheet whereby to rock the shaft and dis-engage the detent
110 from the platen-moving lever.

7. In a platen-controlling device, the combination with a platen, and a printing member, of a device for moving the printing
115 member, of a device for moving the printing member and having an orbital movement, a platen-moving lever, a spring having one end fixed and its opposite end secured to said lever to hold the lever normally
120 in a platen which intersects the orbit of the device for moving the printing member whereby the movement of said device will actuate the lever to move the platen to an inoperative position, means arranged to hold said platen-moving lever in such in-
125 operative position, and means actuated by a sheet fed to the platen to render said holding means inoperative.

8. In a platen-controlling device, the combination with a platen, and a printing mem- 130

ber, of a platen-moving lever, a device for moving the printing member, a finger carried by the platen-moving lever arranged longitudinally of the same and projecting beyond the end thereof, means upon the device for moving the printing member to engage said finger and thereby actuate said lever to move the platen out of operative position, means for holding the platen-moving lever when moved to such position, and means actuated by a sheet fed to the platen to release said holding means.

9. In a platen-controlling device, the combination with a platen, a member arranged for coöperation therewith, a platen moving member, and a member for moving the first mentioned member, of means upon the last mentioned member arranged to actuate the platen moving member to move the platen out of position for coöperation with the first mentioned member during the movement of said first mentioned member to position to coöperate with the platen and prior to its assuming such position, a stud upon the platen moving member, a detent having a hooked end arranged to engage with the said stud and holding the platen moving member when moved to such position, means tending to move the platen moving member to position the platen in coöperative relation to the said first mentioned member, and means arranged for actuation by the feeding of a sheet to the platen to disengage the detent from the stud and release the platen moving member.

10. In a platen-controlling device, the combination with a platen, a member arranged for coöperation therewith, a platen moving lever and a member for moving the first mentioned member, of a finger upon the platen moving lever projecting therebeyond, an element upon the last mentioned member arranged to engage with the finger and

swing the platen moving lever to move the platen out of position for coöperation with the first mentioned member during the movement of the first mentioned member to position to coöperate with the platen, a stud securing the finger to the platen moving lever, a detent having a hooked end arranged to engage with the said stud and hold the platen moving lever when moved to such position, means tending to normally swing the platen moving lever to move the platen into position to coöperate with the first mentioned member, and means arranged for actuation by a sheet fed to the platen to disengage the detent from said stud.

11. In a platen-controlling device, the combination with a platen, a member arranged for coöperation therewith, a platen moving lever and a member for moving the first mentioned member, of a cushioning spring carried by the platen moving lever, an abutment upon the last mentioned member arranged to ride upon the spring and actuate the platen moving lever to move the platen out of position for coöperation with the first mentioned member during the movement of the first mentioned member to position to coöperate with the platen, means for holding the platen moving lever when moved to such position, means normally tending to swing the platen moving lever to position the platen in coöperative relation to the said first mentioned member, and means arranged for actuation by a sheet fed to the platen to release said holding means.

In testimony whereof, I affix my signature in presence of two witnesses.

LOUIS M. STOLL. [L.S.]

Witnesses:

JOHN B. MANNIX,
MARY GALLIVAN.