

1,044,450.

H. G. GAMMETER.
DELIVERY MECHANISM.
APPLICATION FILED OCT. 24, 1908.

Patented Nov. 12, 1912.
2 SHEETS-SHEET 1.

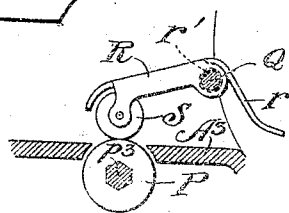
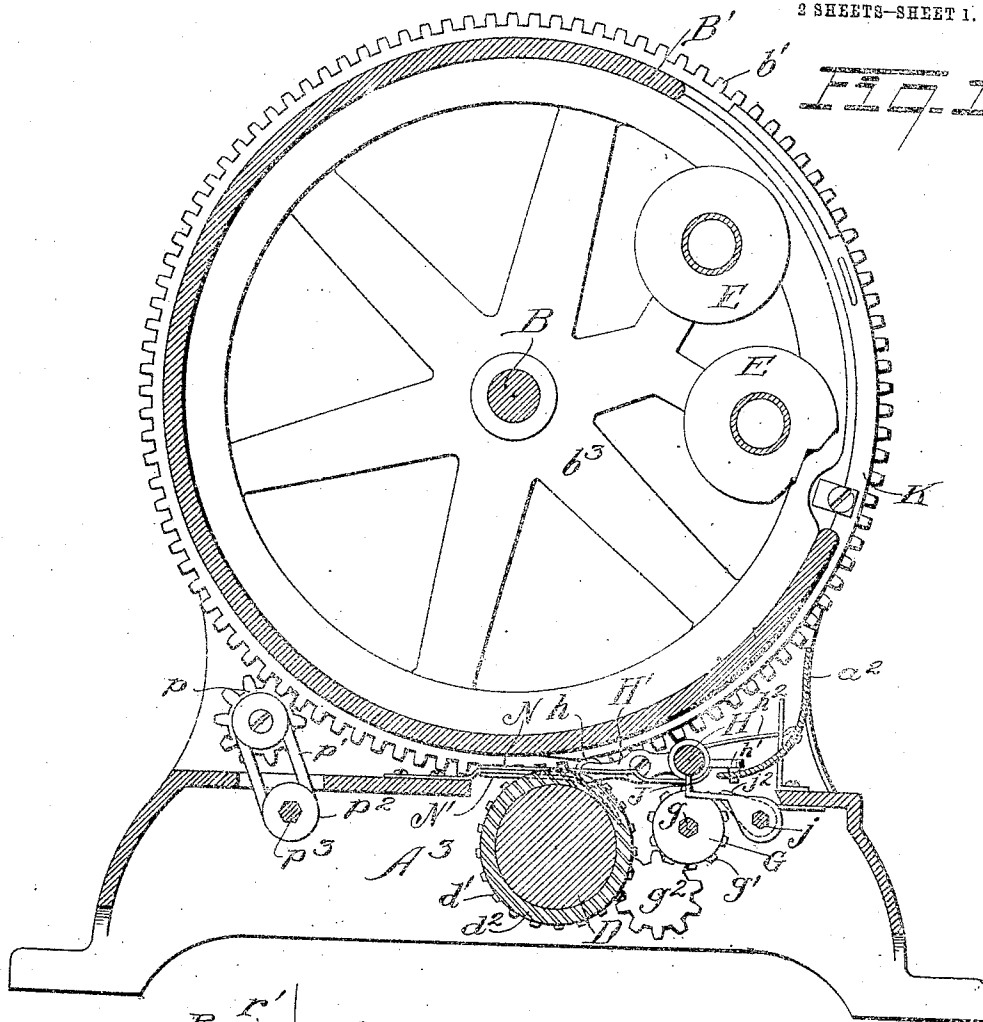


Fig. 4

Witnesses:

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Nathan F. Fretter.



Fig. 5

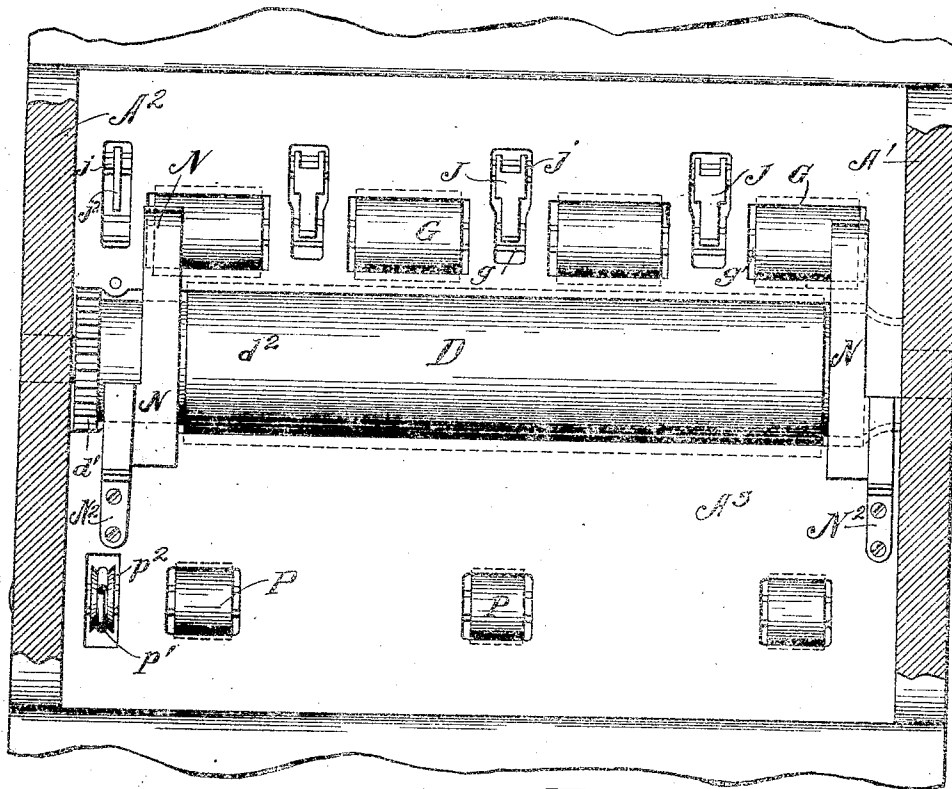
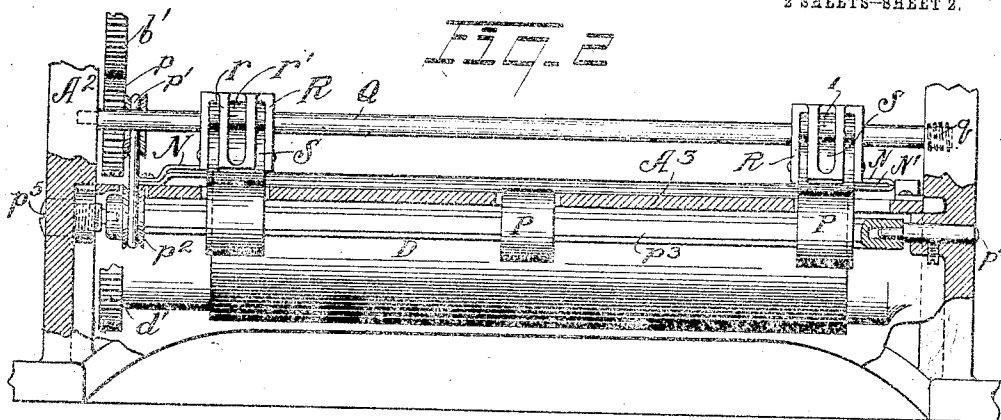
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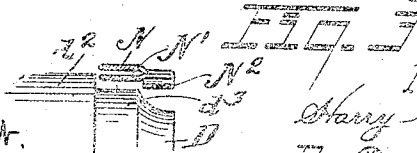
2 SHEETS-SHEET 2.



Witnesses:

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Arthur H. Metter.



Inventor:

Harry C. Gammeter.

By Robert Ford & Hull,

Attys

UNITED STATES PATENT OFFICE.

HARRY C. GAMMETER, OF BRATENAH, OHIO, ASSIGNOR TO THE AMERICAN MULTY-
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DELIVERY MECHANISM.

1,044,450.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Original application filed October 22, 1906, Serial No. 339,909. Divided and this application filed October 24, 1908. Serial No. 459,343.

To all whom it may concern:

Be it known that I, HARRY C. GAMMETER, a citizen of the United States, residing at Bratenahl, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Delivery Mechanisms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide a very simple and effective mechanism for insuring the discharge of printed sheets from a printing machine. The mechanism is particularly well adapted for embodiment with an office printing press of the type known as the multigraph wherein there is a rotary printing drum adapted to carry individual type and a suitable platen cooperating therewith. In the multigraph the rotation of the drum and platen operates to carry the paper between them and print successive lines thereof, discharging the printed sheet. Occasionally, with thin paper, a sheet tends to wrap around the printing drum. This difficulty does not ordinarily occur, but in cold, dry weather it sometimes happens, owing to the frictional electricity in the paper.

The present invention provides means for receiving the sheet as it emerges from the printing couple and holding it away from the printing drum, insuring its proper ejection.

As shown in the drawings, Figure 1 is a vertical section through a multigraph embodying this invention; Fig. 2 is a rear elevation of a paper ejecting device, being partly sectional; Fig. 3 is a plan taken just above the impression platen and showing the lower members of the paper feed and the paper ejection mechanism; Fig. 4 is a detail of the paper ejecting rollers, the same being in side elevation; Fig. 5 is a perspective of the paper stripper; and Fig. 6 is a vertical cross section through the paper stripper, showing also its relation to the platen.

In the embodiment shown in the drawings, there is a suitable base A from which rises a pair of vertical standards or end plates A' and A². Journaled in these is the main driving shaft B on which is the printing drum B'. This drum may be formed with longitudinal channels for the reception of individual type, as set out in my applica-

tion Serial No. 339,909, of which this case is a division.

Beneath the printing drum is a rotary impression platen D connected with the gears b' and d' on the drum and platen respectively. The drum is shown with an opening in its periphery and as containing a pair of ribbon spools E from which an inking ribbon may pass around a type on the drum. The drum being rotated by suitable means, paper drawn between it and the platen is thus impressed by the type through the inking ribbon.

The mechanism which grips and feeds the paper shown herein is the subject matter of my Patent No. 846,992. Briefly, it consists of the following: On a shaft g are mounted sleeves G forming an interrupted roller projecting through openings in a horizontal frame plate A³ constituting a table. This roller has a gear d' meshing with an idler g' which meshes with the gear d' on the platen. Above the rollers G is a roller H mounted at its ends in pivoted arms, of which the right hand one is shown at H'. This arm H' is extended inwardly and carries a roller h which is adapted to be engaged and depressed by a cam K carried by the printing drum. Such depression maintains the roller H out of engagement with the rollers G, as shown in Fig. 1.

J represents fingers adapted to project through openings in the table A³, these fingers being rigidly mounted on a rock shaft j. A spring surrounding this rock shaft tends to keep the fingers with their upturned ends projecting above the plane of the table and into engagement with the roller H. On the forward end of the arm H' is an extension h' which has a downwardly extending lug adapted to bear on a rock arm j' on the shaft j. When the parts are in the position shown in Fig. 1, (the cam engaging the roller h) the sheet of paper is shoved by hand across the front portion of the table A³ until its rear edge is stopped by fingers J.

When the cam clears the roller a spring h² swings the cam roller upward, bringing the forward end of the arm H' downward. This movement through the extension h' swings the rock shaft j and draws the fingers J downwardly out of the way of the paper. At the same time, the roller H descending, comes on the paper and moves it between

itself and the rollers G, these latter rollers being constantly revolving to feed the paper so that it passes between the drum and the impression platen.

5 When the sheet of paper is placed in position against the fingers J, one edge of the paper at least lies beneath the metal strip N. This strip extends from beneath the roller H rearwardly across the barrel d^3 of the impression platen and adjacent to the soft surface d^2 thereof. Beneath the strip N is a strip N' the forward portion of which curves downwardly around the upper part of the platen barrel, the two strips extending rearwardly in parallelism from a point adjacent to the highest line of the platen. The parallel portions of the two strips are brought together at their outer edges and are carried by a sheet metal bracket N² which is secured to the table plate A³. In the preferred form, the two strips N N' and the bracket are a single integral piece of sheet metal bent on itself, as shown in Fig. 5. This guiding structure is supplied at each end of the raised surface to the impression platen. If the paper is of a full width, each edge is guided by these strips. If the paper is narrower than the full width, one edge is guided, which has been found sufficient.

30 The paper strippers and their combination with the paper feed are claimed in my application Serial No. 339909, of which this is a division. The paper strippers are claimed herein in combination with the paper ejecting mechanism, with which they also cooperate.

When the movable cam K has been adjusted and locked to properly time the paper feed according to the letter head on the paper, a rotation of the drum causes the paper to be fed rearwardly between the drum and platen, one or both edges of the paper passing between the strips of the edge guide or guides. In such operation, it sometimes happens that the friction of the sheet of paper develops sufficient frictional electricity to give it a tendency to cling to the printing drum, so that as the paper emerges from the guiding strips, it is carried around toward the front of the machine by the printing drum, and, unless removed, will again pass through the printing mechanism. This difficulty does not ordinarily occur, but in cold dry weather it sometimes happens, especially if the paper be light and flexible.

To overcome the difficulty mentioned, I have provided the ejecting mechanism which is the subject matter of this application, and which operates to receive the paper as it emerges from the printing couple,—preventing it from wrapping around the drum. I will now describe this mechanism.

Mounted on the end frame member A² is a pinion p which carries a belt pulley. A belt p' connects this with a pulley p^2 on the

shaft p^3 which is carried between the frame members, extending parallel with the platen, as shown in Fig. 2. This shaft is carried at one end by a removable stud p^4 , extending into an opening in the shaft and at the other end by a screw p^5 , which projects into an opening in that end of the shaft. This shaft p^3 carries rollers P which project upwardly through openings in the table A². Extending horizontally across the machine near its rear edge is a rod Q on which are slidably mounted arms R in the form of cages which carry freely journaled rollers S adapted to bear upon the rollers P. The paper being fed rearwardly in a substantially horizontal plane along the top of the table, runs between the rollers S and P, which continue to guide it so that when the paper is freed from the guiding strips, it is not able to come up onto the drum and cling thereto.

When the printing mechanism is used with narrow paper, as, for example, postal cards, only one of the paper strippers engages such paper and only one of the endmost rolls P of the ejector comes into action therewith. To take care of such narrow paper, I provide one or more intermediate rolls P. In the embodiment shown, there is one intermediate roll P which is ordinarily sufficient, as it is seldom desirable to print on paper materially less than half the width of the drum. But two rolls S need be provided, because their carrying members R are slidable upon the rod Q, so that the two rolls S may be made to cooperate with any two of the rolls P, according to the position of the type F on the printing drum. To furnish convenient means for shifting these rolls S, I form tails or extensions r on the members R by which they may be easily taken hold of by the fingers. Between the two ears of the cage, which surround the rod Q, I place a split sleeve r' which engages this rod with sufficient friction to prevent accidental displacement of the cage R, while allowing it to be shifted when desired.

The cage R, as shown, is made of a single piece of sheet metal, bent to present the following parts, namely; a smooth top surface, downturned sides which stiffen it and provide for the bearings on the rod Q and for the pin of the roll S, the rearwardly projecting arm r , referred to, and a forward downwardly curved tongue in front of the roll S. It will be seen that this construction really cages the roll, so that it is possible for the paper to slide easily over the tops of members R, if, for any reason, it should fail to pass between the rolls S and P.

The parts constituting the paper ejector are made so that they may be conveniently removed when it is not desired to use them. When they are in place, it is simply neces-

sary to position the cages or arms R with their rolls in accordance with the position of the type F and the ejector is ready for use. To remove the ejector, it is simply necessary to shift the rod Q to the right in Fig. 2, against the action of the spring g, and take out the rod with the cages and rolls, and to remove the stud p⁴ by loosening its set screw and take out the shaft p³ with its rolls P. The belt, of course, comes off with the removal of this last shaft and the gear p may be removed by removing its screw stud, if desired, or it may be left in place.

Having thus described my invention, what I claim is:

1. The combination of a rotary printing drum, a rotary under-running impression platen, a pair of paper strippers at the ends of the platen respectively and each comprising a guide for the upper and under side of the paper and each extending from in front of the line of printing contact to the rear thereof, and a paper ejector at the rear comprising surmounting rolls with provision for lateral adjustment for different widths of paper.

2. The combination of a rotary printing drum, a rotary under-running impression platen, a pair of paper strippers at the ends of the platen respectively, and each extending from the front of the line of printing contact to the rear thereof, and a paper ejector at the rear comprising an under roll and a surmounting roll, one of which is laterally adjustable.

3. The combination with a rotary printing couple of an ejector therefor, comprising a lower driven roll, an upper roll receiving its motion from the driven roll, an arm carrying the upper roll and having a smooth upper surface rising as high as the top of said roll, and a protecting portion in front of the

upper part of the roll whereby the paper may, if necessary, slide onto and along the top of said arm.

4. The combination with a rotary printing couple, of a pair of paper strippers located at the ends of the platen and extending to the rear of the line of contact, a paper ejector at the rear of said line comprising two rolls near the ends of the platen, and an intermediate roll and surmounting rolls.

5. The combination with a rotary printing couple, of paper strippers opposite the ends of the platen extending to the rear of the line of contact, a paper ejector at the rear of said line comprising a driven roll, an adjustably positioned arm, and a roll carried by said arm and adapted to rest by gravity on the driven roll.

6. The combination with a rotary printing couple and paper strippers, of a paper ejector comprising two cooperating rolls, one of which is driven, and the other of which is mounted in a movable arm and bears against the other with a light pressure, said strippers extending from in front of to the rear of the line of contact of the couple.

7. The combination with a rotary printing couple, paper strippers, feeding mechanism on one side of the strippers, an ejecting mechanism on the other comprising a pair of rolls, one of which is driven and the other of which is carried by an arm and adapted to be thereby moved to and from the driven roll, said strippers extending from in front of to the rear of the line of contact of the couple.

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

HARRY C. GAMMETER.

Witnesses:

ALBERT H. BATES,
BRENNAN D. WEST.