(No Model.) 2 Sheets—Sheet 1.

J. H. STONEMETZ.

PRINTING PRESS.

No. 559,000. Patented Apr. 28, 1896.

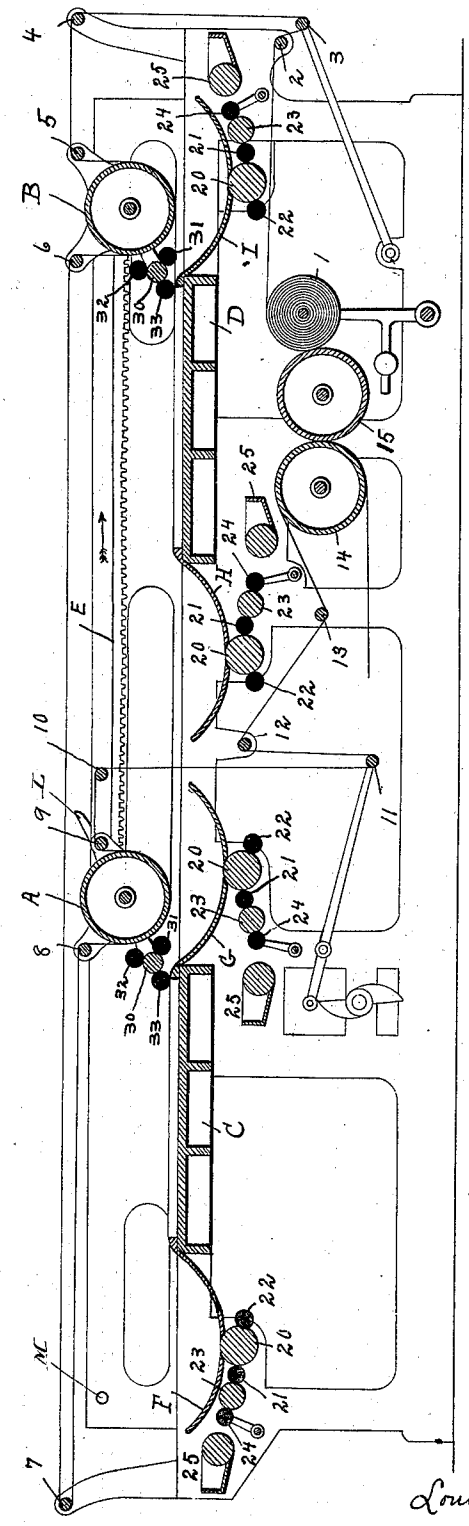

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

J. H. STONEMETZ.

PRINTING PRESS.

No. 559,000. Patented Apr. 28, 1896.

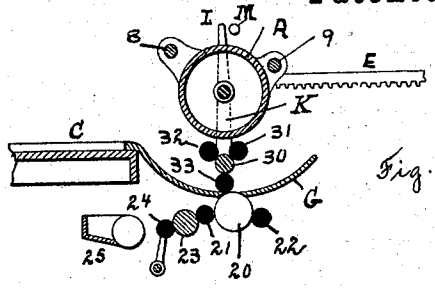

Fig. 2.

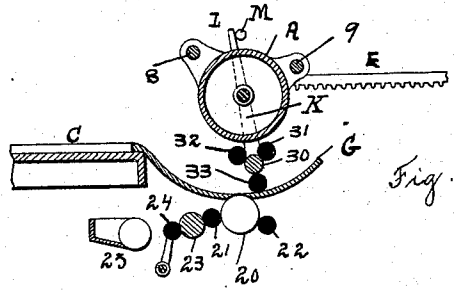

Fig. 3.

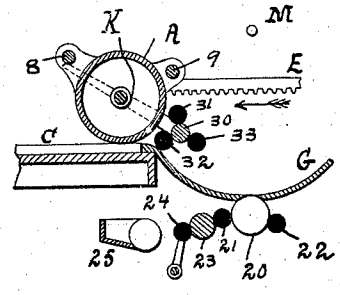

Fig. 4.

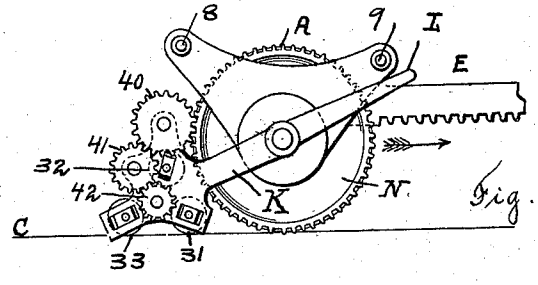

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN H. STONEMETZ, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE CAMPBELL PRINTING PRESS AND MANUFACTURING COMPANY, OF NEW YORK, N. Y.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 559,000, dated April 28, 1896.

Application filed October 1, 1892. Serial No. 447,542. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. STONEMETZ, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Printing-Presses, of which the following is a specification.

The aim of this invention is to improve on the printing-press shown in Letters Patent granted to me January 3, 1888, No. 376,053; and to this end the invention consists of the device described and claimed in this specification, and illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation of enough of such a printing-press to illustrate my improvement. Figs. 2, 3, and 4 are diagrams illustrating the action of the inking-rollers, and Fig. 5 is a detail of part of the carriage on an enlarged scale.

In the patent referred to I have shown a web-printing press in which there are two reciprocating impression-cylinders coacting with two stationary form-beds, and means for intermittently drawing the web forward, so that a sheet will be perfected at each movement of the impression-cylinders in either direction. In the patent I have shown form-rollers as arranged on only one side of the impression-cylinder, whereby a heavy deposit of ink will be made on the form, so that enough ink will be put on the form for two impressions. While this is sufficient as regards newspaper or ordinary work, it may be desired in some cases to ink the form for each impression, and this invention covers a device whereby this may be nicely done with one set of form-rollers.

In this present device I have shown a form roller or rollers which will automatically move from one side of the impression-cylinder to the other, so that the form may be inked for every impression.

Referring to the drawings, and in detail, A and B represent the reciprocating impression-cylinders, and C and D the form-beds with which the impression-cylinders coact.

The impression-cylinders A and B are mounted in the usual carriage or framing E, and this carriage may be reciprocated by the mechanism shown in the patent referred to.

The web is led from the roll 1 around the stationary roll 2, looping-roller 3, stationary roll 4, guide 5, carried by the carriage, around impression-cylinder B, around guide 6, carried by the carriage, to the stationary roll 7, then around guide 8, carried by the carriage, around impression-cylinder A, then around guide 9, carried by the carriage, to the stationary roll 10. From the stationary roll 10 the web passes down between the two form-beds, around the looping-roller 11, then around the stationary rolls 12 and 13, between the cylinders 14 and 15, which are continuously driven to slowly draw the web from the looping-roller 11, and to feed the web from the roll 1 to the looping-roller 3.

The looping-roller 11 is actuated by any suitable means to draw the web forward when the impression-cylinders are off the forms in either direction, and with a machine organized as thus described a perfected sheet will be printed for each movement of the impression-cylinders, and the operation of these details is readily understood, and is described at length in the patent referred to.

At the ends of the form-bed C are arranged ink-tables F and G, which are curved, as shown, and on the ends of the bed D are arranged similar ink-tables H and I. Projecting up through each of these ink-tables is an ink-carrying roller 20, which has distributing-rollers 21 and 22 bearing against the same, and each distributing-roller 21 bears against a drum-roller 23, to which ink is supplied by the ductor-roller 24 from a fountain 25. Thus an ink-supply is attached or used in connection with each ink-table.

Mounted on the shaft of each of the impression-cylinders are frames K, which have suitable projecting arms L, and in these frames K are mounted the distributing-roller 30 and form-rollers 31, 32, and 33, as shown, and the frames K are free to swing or turn around the center of the impression-cylinders. The distributing-rollers 30 may be positively driven from one of the gears, as N, arranged on the side of the impression-cylinders by means of

intermediates 40 and 41 and gear 42, fastened on the side of the same; and it will be seen that the distributing-rollers 30 will always be turned in an opposite direction from the impression-cylinders, whereby the form-rollers will be turned in the same direction as the impression-cylinders, so that they will be always turned to properly engage the forms.

The ink-tables are not formed on an arc of a circle, but on a curve somewhat extended, so that as the impression-cylinders reverse in either direction, during a slight portion of this movement, the form-rollers may be swung around the center of the cylinders, and thereby take a supply of ink from the ink-tables and move back on the opposite side of the impression-cylinders.

As shown, the form-rollers are arranged to drag behind the impression-cylinders, although it is within the scope of my invention and could be easily arranged to have the form-rollers move in front of the impression-cylinders.

In Fig. 1 the impression-cylinders are shown as just completing their movement to the right, and the web as being shifted, and the form-roller 33 as just leaving the edge of the forms. Now, as the impression-cylinders move still farther to the right, the form-roller 33 will leave the forms and will run down the ink-tables to the right of the form-beds, or, referring especially now to the case of the form-rollers used in connection with the impression-cylinder A, it will be seen that they will drop to the position shown in Fig. 2. As the impression-cylinder moves a slight distance still farther to the right the arms L will come against fixed projections M, and this will tend to move the form-rollers past the center of the ink-tables, so that the form-roller 33 will pass over the ink-supplying roller 20, and so that the nest of form-rollers will be to the right of the impression-cylinder. Now, as the impression-cylinder starts on its movement to the left, the nest of form-rollers will draw up the incline of the ink-table G to a position behind the impression-cylinder, and as this movement of the impression-cylinders continues the form-rollers 32 and 33 will pass over the form and will ink the form for the next impression that the cylinder will make on its movement to the right.

It will be seen that as the impression-cylinders move to the left the form-rollers 32 and 33 will ink the forms, and that as the impression-cylinders move to the right the form-rollers 31 and 33 will ink the forms, the same action taking place when the impression-cylinders reverse at their left-hand extremes. Thus the forms are inked for each movement of the impression-cylinders in either direction.

In some cases I can omit the arms L and the stationary projections M and let the form-rollers change their position relatively to the impression-cylinders by the momentum that they acquired and by dropping down on the ink-tables; but I prefer in most cases to use the arms and projections as described, so that the form-rollers will be positively swung from one side to the other, and so that they cannot possibly cramp between the ink-tables and the impression-cylinders as they commence to run up onto the form-beds. Thus it will be seen that the ink will be largely distributed on the form-rollers, and that the form-rollers will take up their ink by a slight movement of the impression-cylinders, as the ink-tables are curved, as shown.

In some cases the form-rollers 31 and 32 can be omitted, and only one form-roller, as roller 33, may be used, and any other means for supplying ink to the form-rollers may be used.

Thus it will be seen that I have invented an efficient and simple inking mechanism whereby the forms will be inked for each impression of the cylinders if they print in both directions.

The arrangement of parts and the details herein shown and described may be greatly varied by a skilled mechanic without departing from the scope of my invention as expressed in the claims.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, and a form-roller moving with said impression-cylinder and arranged to automatically move from one side of the cylinder to the other, substantially as described.

2. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, a distributing-roller and a form-roller moving with said impression-cylinder and arranged to automatically move from one side of the impression-cylinder to the other, substantially as described.

3. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, a distributing and three form rollers moving with said cylinder, and arranged to move automatically from one side of the impression-cylinder to the other, substantially as described.

4. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, a pivoted frame mounted to move with said impression-cylinder and a form-roller carried by said frame arranged to automatically move from one side of the cylinder to the other, substantially as described.

5. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, a pivoted frame mounted substantially concentrically with said impression-cylinder, a form-roller carried by said pivoted frame, and means for supplying ink to said form-roller at each side of said bed, substantially as described.

6. The combination in a printing-press of a

form-bed, a reciprocating impression-cylinder coacting therewith, a pivoted frame mounted substantially concentrically with said impression-cylinder, a form-roller mounted in said frame, and a curved ink-table arranged at one end of the bed, over which, said form-roller is adapted to move to get its supply of ink, substantially as described.

7. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, a pivoted frame moving with said impression-cylinder, a form-roller mounted in said pivoted frame, and a curved ink-table arranged at each end of said bed, over which said form-roller is arranged to move as the impression-cylinder reverses in either direction, and means for supplying ink to said form-roller as the same moves over said ink-tables, substantially as described.

8. The combination in a printing-press, of a form-bed, a reciprocating impression-cylinder coacting therewith, a pivoted frame moving with said impression-cylinder, and carrying a distributing-roller and three form-rollers arranged so that the rollers will move from one side of the impression-cylinder to the other, whereby two of said form-rollers will coact with said bed, as the impression-cylinder moves, substantially as described.

9. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, a form-roller and a distributing-roller moving therewith, and arranged to move automatically from one side of the cylinder to the other, and gearing between said cylinder and distributing-roller, substantially as described.

10. The combination in a printing-press of the form-bed, the reciprocating impression-cylinder coacting therewith, a pivoted frame moving with said impression-cylinder, a form-roller carried by said frame, and means for positively swinging said form-roller from one side of the impression-cylinder to the other, when the impression-cylinder is off the bed, substantially as described.

11. The combination in a printing-press of a form-bed, a reciprocating impression-cylinder coacting therewith, a pivoted frame moving with said impression-cylinder, and carrying a form-roller, an arm projecting from said frame, and a stationary projection with which said arm is adapted to coact to positively swing said form-roller from one side of said impression-cylinder to the other, when the impression-cylinder is off the bed, substantially as described.

12. The combination in a printing-press of the stationary form-bed, a reciprocating impression-cylinder coacting therewith, a pivoted frame moving with said impression-cylinder, a distributing-roller 13, and form-rollers arranged in said pivoted frame, as described, and means for positively swinging said frame from one side of the impression-cylinder to the other, when the impression-cylinder is off the bed, substantially as described.

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

JOHN H. STONEMETZ.

Witnesses:
H. O. W. WOOD,
JOSEPH A. GALLAGHER.