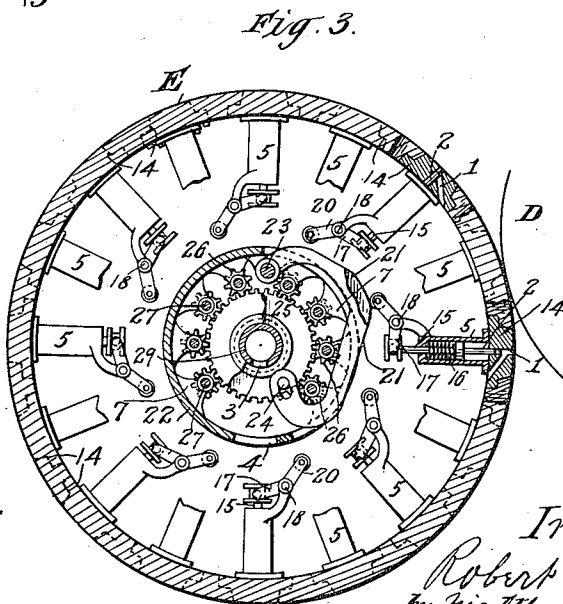
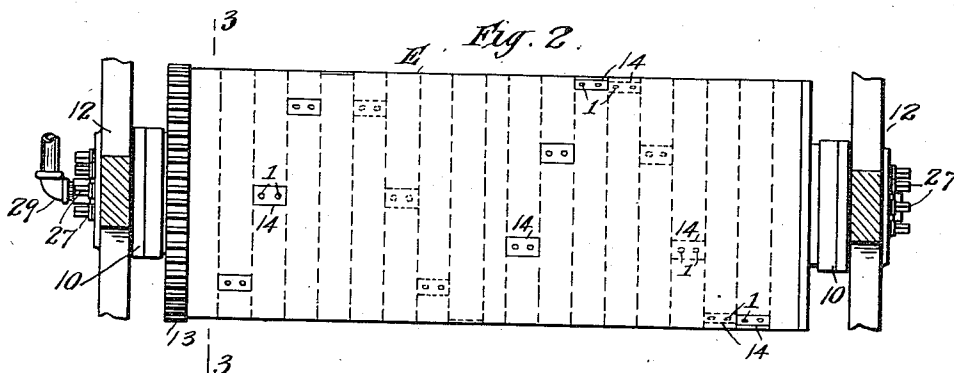
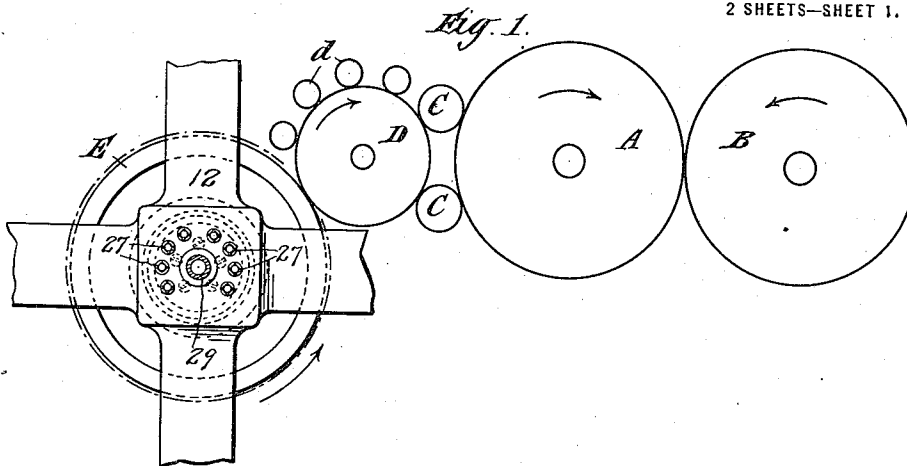


R. HOE.
 INKING MECHANISM FOR PRINTING PRESSES.
 APPLICATION FILED MAY 9, 1914. RENEWED JULY 7, 1916.

1,275,256.

Patented Aug. 13, 1918.

2 SHEETS—SHEET 1.



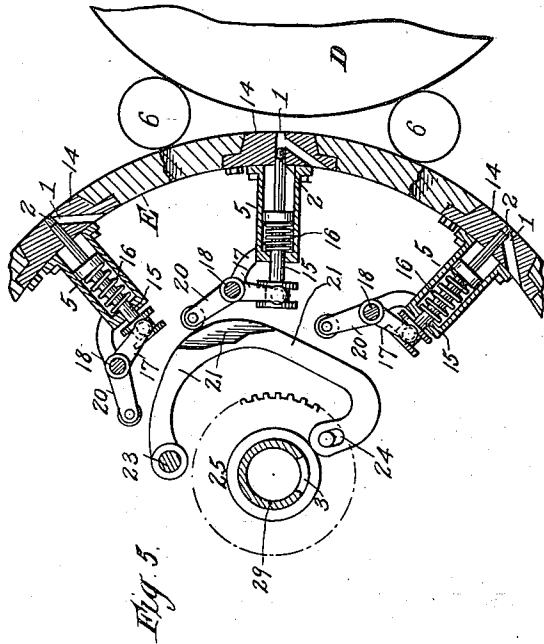
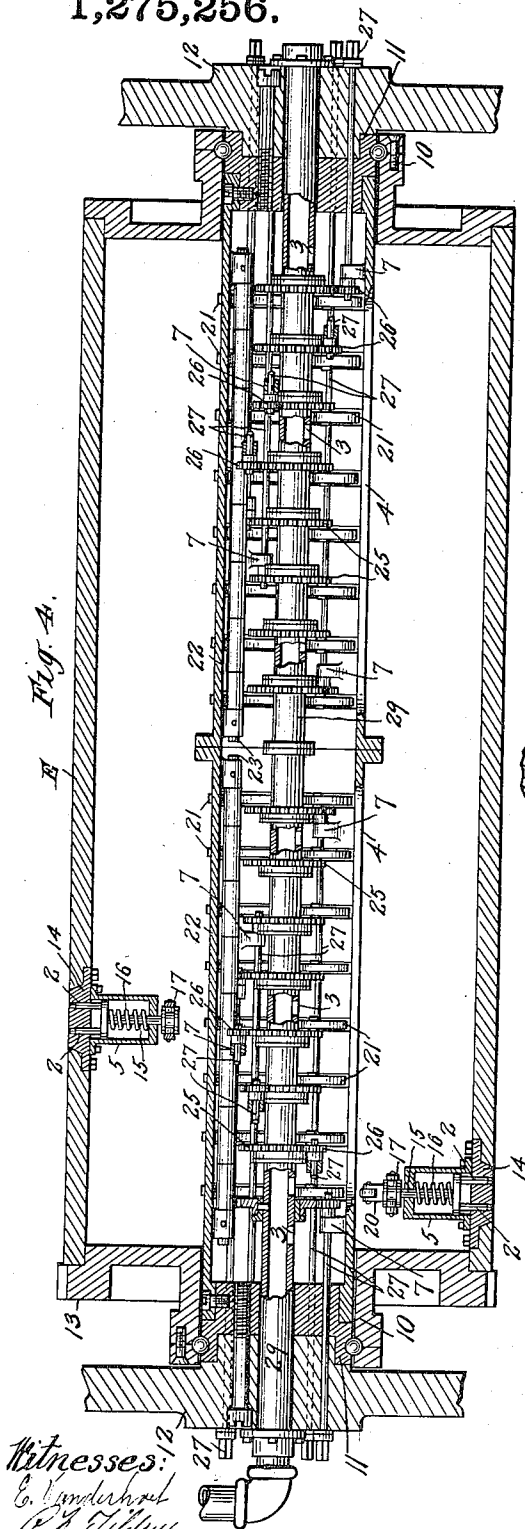
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Inventor:
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 2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

ROBERT HOE, OF NEW YORK, N. Y., ASSIGNOR TO R. HOE AND CO., OF NEW YORK, N. Y.,
A CORPORATION OF NEW YORK.

INKING MECHANISM FOR PRINTING-PRESSES.

1,275,256.

Specification of Letters Patent.

Patented Aug. 13, 1918.

Application filed May 9, 1914, Serial No. 837,378. Renewed July 7, 1916. Serial No. 107,975.

To all whom it may concern:

Be it known that I, ROBERT HOE, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Inking Mechanism for Printing-Presses, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to inking mechanism for printing presses, the especial object of the invention being to provide an ink containing drum or roller by which the ink shall be properly fed to the distributing devices and readily adjusted so as to secure the desired inking, and particularly to provide for supplying ink separately for each column of the printing and adjusting the feed for each column so as to secure the desired printing of all portions of the sheet or web.

In the accompanying drawings forming a part of this specification, I have shown, for purpose of illustration, a construction embodying the invention in the preferred form, and this construction will now be described in detail and the features forming the invention then specifically pointed out in the claims.

In the drawings—

Figure 1 is a diagrammatic end elevation of a printing couple with inking mechanism embodying the invention;

Fig. 2 is a side elevation of the ink drum;

Fig. 3 is an enlarged cross section of the ink drum on the line 3—3 of Fig. 2;

Fig. 4 is an enlarged longitudinal central section of the ink drum, and

Fig. 5 is a detail of a part of the ink drum and distributing roll, showing also a slight modification.

Referring to the drawing, A, B are the type and impression cylinders of a printing couple, C the form rollers, D the distributing drum or roll, shown as provided with the usual vibrating rolls *d*, and E the ink drum which contains the ink and feeds it to the distributing drum or roll D. In Fig. 1, the drum is shown as rotating in contact with the distributing roll D, but in Fig. 5, the drum and roll are separated and composition rolls 6 are placed on opposite sides of the roll D, which may be found preferable in limiting the throw of the ink from drum

E. All the inking mechanism, except the ink drum, may be of any other usual or suitable construction and arrangement, and the ink may be distributed in any desired manner, the invention relating solely to the ink drum itself.

The ink drum E is a hollow drum provided at its ends with journals 10 supported and rotating in bearings 11 provided preferably with antifriction bearings, such as the balls shown, the bearing sleeves 11 being carried by frame bars 12. The ink drum is shown as driven by gear 13 at one end of the drum. The outer wall of the drum E is provided with passages for the ink, these passages consisting, in the form shown, of two holes 1 for each column, these holes being formed in plugs 14 set into the surface of the cylinder, and these holes 1 are controlled by valves 2 so as to open the holes once in each rotation of the drum to permit the passage of the ink outward through the openings. The openings 1, as shown clearly in Fig. 3, are inclined in the direction from which the drum is rotating, so that the tendency of the centrifugal force from the rotation of the drum is to force the ink through the opening, and thus secure a quick throw of the ink when the valves 2 are withdrawn. The plugs 14, with their openings 1, are preferably staggered around the drum, so as to provide for the adjusting devices, and in the construction shown the sixteen plugs for the sixteen columns are arranged in two series, with the adjusting devices for the two series at the opposite ends of the drum, for compactness and convenience of adjustment.

The valves 2 are carried by valve stems 15 mounted in casings 5 secured to the plugs 14 and spring pressed by springs 16 to force the valves outward and close the openings 1, and the valve stems and valves are moved inward by arms 17 on rock shafts 18 mounted in brackets 19 on the inner side of the drum, and carrying arms 20 having bowls engaged by stationary cams 21, one of these cams 21 being provided for each plug 14 and pair of ink openings. Each cam 21 is mounted to move in a slot in fixed cylinder 22 within the drum E and is pivoted at 23 at one end, and connected at the opposite end by a pin and slot connection 24 to the side of a gear wheel 25 which meshes with a pinion 26 carried by shaft 27 mounted in brackets 7 on cylinder

22 and extending to the outside of the drum and through the frame 12, where the shaft is provided with a head 28 for rotating it, the rotation of the shaft 27, pinion 26 and
 5 gear 25 thus swinging the cam 21 outward or inward so as to withdraw the valve 2 more or less by the rocking of shaft 18, and thus open the ink opening 1 for feeding a
 10 greater or less amount of ink at each action of the valve. Each pair of openings 1 and valves 2 have their own cam 21 and separate gear and pinion adjusting device, so that the ink supply for any column may be ad-
 15 justed independently of the other columns, and this may readily be done while the press is running by rotating the corresponding shaft 27 from the outside of the frame.

The ink is supplied to the interior of the drum through fixed supply pipe 29 extend-
 20 ing through the frame, which pipe also forms the support for the adjusting gears 25 loosely mounted thereon, and the pipe is provided on its underside with openings 3 through which the ink falls onto the bottom
 25 of the stationary cylinder 22, and passes through a slot 4 therein onto the inner side of the drum E. The amount of ink thus fed will be regulated by any suitable means so as to maintain a thin layer of ink on the in-
 30 side of the drum by centrifugal force while the drum is rotating, this ink not being of sufficient depth to extend inside the casings 5 inclosing the valve stems 15 and springs 16 so that these parts are kept free from the
 35 ink.

The operation of the construction will be understood from a brief description, in connection with the drawing. Ink being supplied to the drum E, the centrifugal force
 40 from the rotation of the drum forces the ink outward into the feed openings 1, and, during a portion of each rotation, each of the valves 2 is withdrawn to open its feed opening, by its cam 21, acting through arm 20,
 45 rock shaft 18 and arm 17, and, during this opening of the valve, ink is ejected by centrifugal force through the openings 1 onto the distributing drum D in line with the column corresponding to the valves opened.
 50 Immediately upon the arm 20 passing the cam 21, the valve is closed by a spring 16 on the valve stem. The required inking of each column may readily be secured by ad-
 55 justing the corresponding cam 21, by the rotation of the gear 25 by pinion 26 and shaft 27.

It will be understood that the invention is not to be limited to the particular form or arrangement of parts shown, but that many
 60 modifications may be made while retaining the invention defined by the claims.

What is claimed is:

1. In an inking mechanism for printing
 65 presses, a rotating ink containing drum hav-
 ing openings in its periphery through which

the ink is fed by centrifugal force, and valves acting to open and close said open-
 ings for intermittent feed of the ink.

2. In an inking mechanism for printing
 presses, a rotating ink containing drum hav- 70
 ing openings in its periphery through which the ink is fed by centrifugal force, valves acting to open and close said openings for intermittent feed of the ink, and actuating
 devices for said valves adjustable to vary 75
 the ink feed.

3. In an inking mechanism for printing
 presses, a rotating ink containing drum hav-
 ing openings in its periphery through which 80
 the ink is fed by centrifugal force, valves acting to open and close said openings for intermittent feed of the ink, and means
 brought into action by the rotation of the drum for actuating the valves to feed ink
 during a part of the rotation. 85

4. In an inking mechanism for printing
 presses, a rotating ink containing drum hav-
 ing openings in its periphery through which 90
 the ink is fed by centrifugal force, valves acting to open and close said openings for intermittent feed of the ink, stationary cams
 for controlling the opening and closing movements of the valves, and means for ad-
 justing the cams to vary the ink feed.

5. In an inking mechanism for printing 95
 presses, a rotating ink containing drum hav-
 ing in its periphery separate ink feeding openings for different columns or sections of the matter to be printed, and means for
 controlling the feed of ink through the open- 100
 ings for the different columns or sections independently of each other, whereby ink is supplied to the different columns or sections independently of each other.

6. In an inking mechanism for printing 105
 presses, a rotating ink containing drum hav-
 ing in its periphery separate ink feeding openings for different columns or sections of the matter to be printed, and adjustable
 means for controlling the feed of ink 110
 through the openings for the different columns or sections independently of each other, whereby the ink supplied for the different columns or sections may be regulated
 independently of each other. 115

7. In an inking mechanism for printing
 presses, a rotating ink containing drum hav-
 ing openings in its periphery through which 120
 the ink is fed, valves acting to open and close said openings, a stationary support inside the drum, and actuating devices
 mounted on said support for operating said valves by the rotation of the drum.

8. In an inking mechanism for printing
 presses, a rotating ink containing drum 125
 having openings in its periphery through which the ink is fed, valves acting to open and close said openings, a stationary support inside the drum, actuating devices
 mounted on said support for operating said 130

valves by the rotation of the drum, and devices extending outside the ends of the drum for adjusting the actuating devices during the rotation of the drum for varying the ink feed.

9. In an inking mechanism for printing presses, a rotating ink containing drum having in its periphery separate ink feeding openings for the different columns or sections of the matter to be printed, separate valves controlling the feed of ink through the openings for the different columns or sections independently of each other, said openings and valves for the different columns or sections being arranged in different planes about the axis of the drum, a stationary support within the drum, and actuating devices for the valves carried by said support.

10. In an inking mechanism for printing presses, a rotating ink containing drum having in its periphery separate ink feeding openings for the different columns or sections of the matter to be printed, separate valves controlling the feed of ink through the openings for the different columns or sections independently of each other, said openings and valves for the different columns or sections being arranged in different planes about the axis of the drum, a stationary support within the drum, actuating devices for the valves carried by said support, and adjusting devices outside the ends of the drum for adjusting the actuating devices.

11. An ink containing drum E having ink feed openings 1 and valves 2 controlling said openings, in combination with stationary cylinder 22 inside the drum, cams 21 on said cylinder, and connections for operating said valves by the cams.

12. An ink containing drum E having ink feed openings 1 and valves 2 controlling said openings, in combination with stationary cylinder 22 inside the frame, cams 21 adjustably mounted in said cylinder, gears 25 for adjusting the cams, pinions 26 for rotating the gears, and pinion shafts 27 extending to the outside of the drum for rotating the pinions, whereby the cams 21 may be adjusted independently of each other while the drum is rotating.

13. An ink containing drum E having ink feed openings 1 and valves 2 controlling said openings, in combination with station-

ary cylinder 22 inside the frame, cams 21 adjustably mounted in said cylinder, hollow ink supply pipe 29 inside the cylinder, gears 25 loosely mounted to rotate on said pipe for adjusting the cams, pinions 26 for rotating the gears, and pinion shafts 27 extending to the outside of the drum for rotating the pinions, whereby the cams 21 may be adjusted independently of each other while the drum is rotating.

14. In an inking mechanism for printing presses, means for supplying ink under pressure, feeding openings through which ink is fed for different columns or sections of the matter to be printed, valves controlling the feed of ink through the respective openings, and means for operating the valves to feed ink intermittently through the openings for the different columns or sections.

15. In an inking mechanism for printing presses, means for supplying ink under pressure, feeding openings through which ink is fed for different columns or sections of the matter to be printed, and intermittently operating valves controlling the feed of ink through the openings for the different columns or sections.

16. In an inking mechanism for printing presses, means for supplying ink under pressure, feeding openings through which ink is fed for different columns or sections of the matter to be printed, valves and means for operating the valves during the operation of the machine to control the feed of ink through the openings for the different columns or sections, and independent adjusting means for each valve for regulating the amount of ink fed through it.

17. In an inking mechanism for printing presses, means for supplying ink under pressure, feeding openings through which ink is fed from the supply for different columns or sections of the matter to be printed, intermittently operating valves controlling the feed of ink through the openings for the different columns or sections, and means for operating the valves.

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

ROBERT HOE.

Witnesses:

C. J. SAWYER.

J. A. GRAVES.