

Feb. 27, 1934.

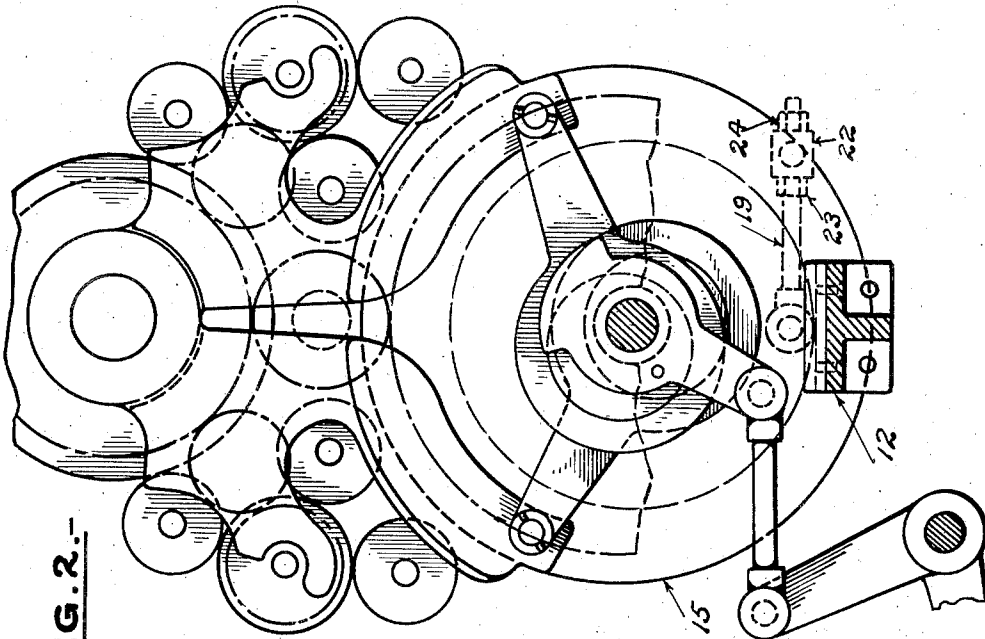
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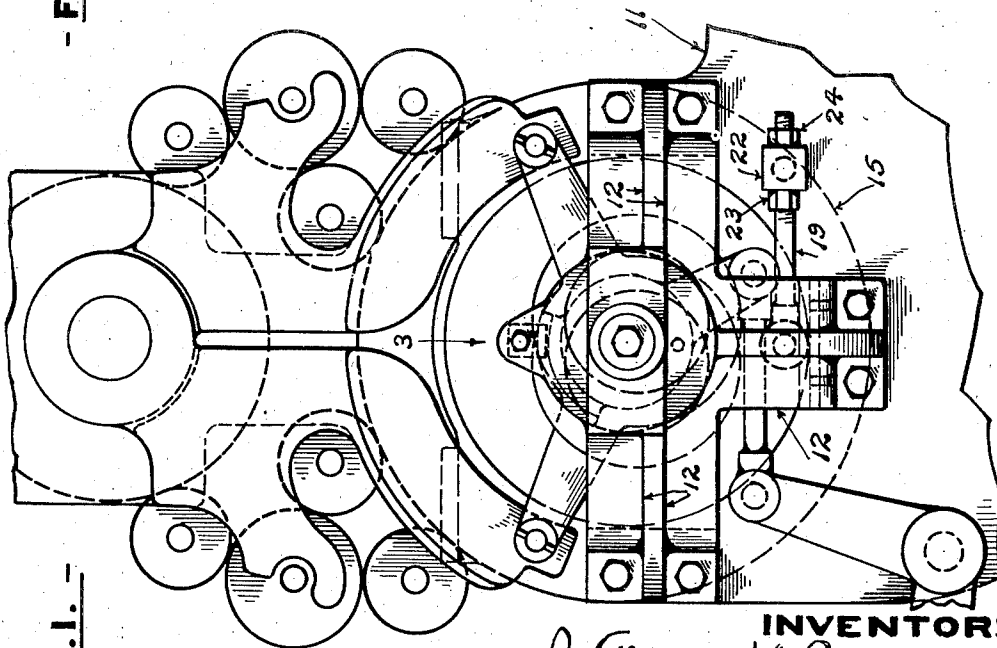
PRINTING MACHINE

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- FIG. 2.-



- FIG. 1.-

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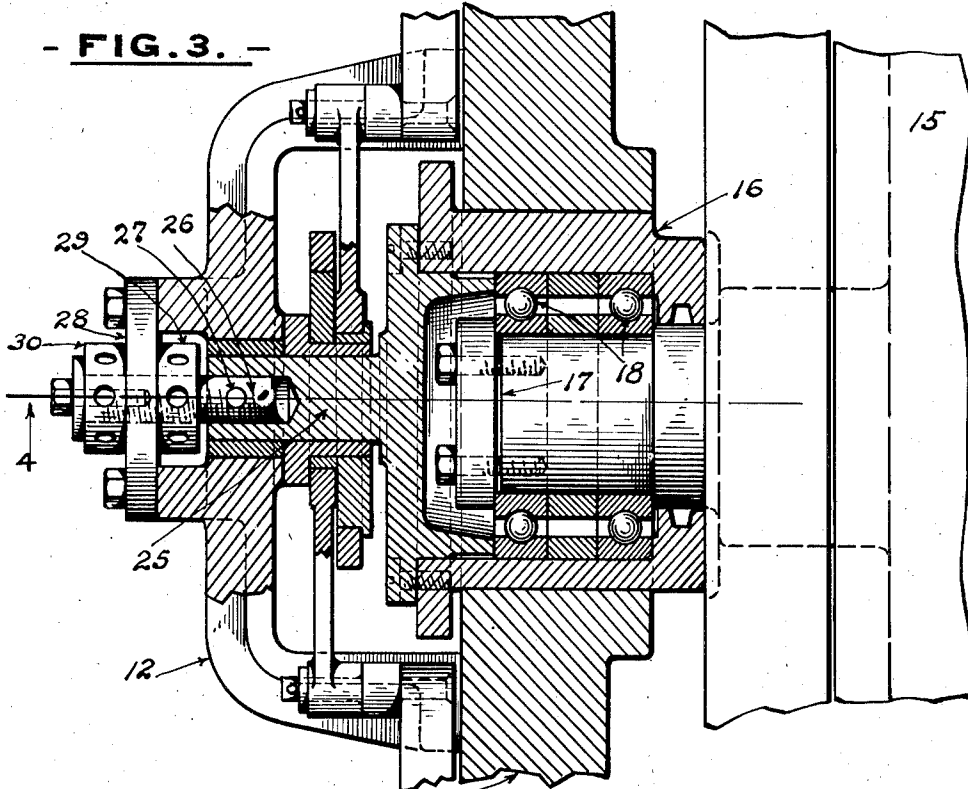
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PRINTING MACHINE

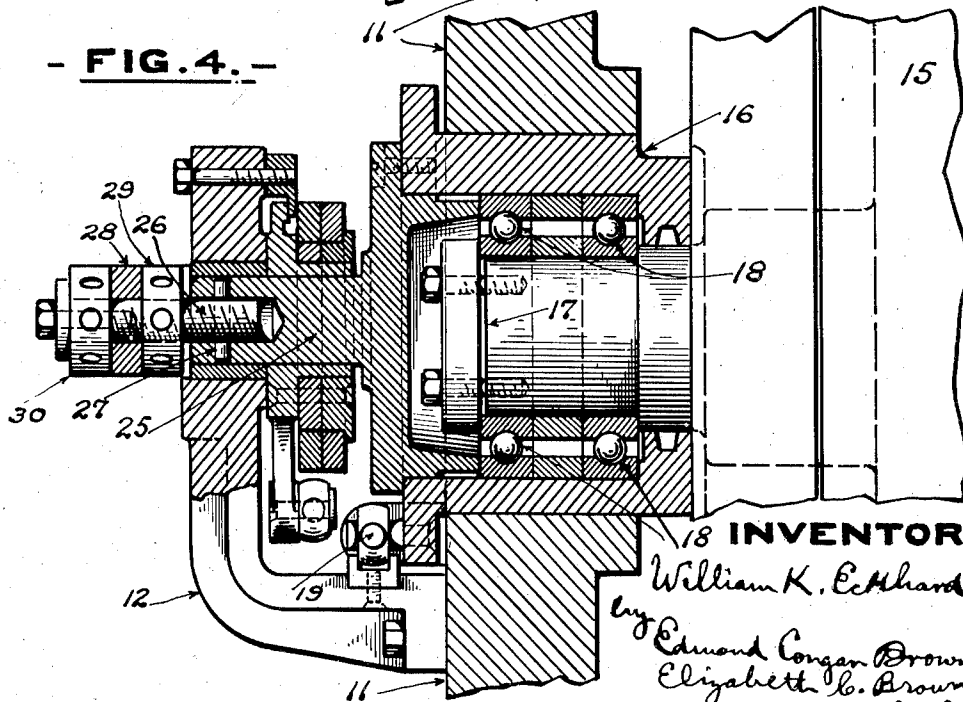
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- FIG. 3. -



- FIG. 4. -



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PRINTING MACHINE

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tion of New York; Irving Trust Company,
receivers

Application April 20, 1931. Serial No. 531,427

5 Claims. (Cl. 101-247)

My invention relates to printing machines of the rotary or cylinder type, and relates especially to such machines as are provided with means for adjustably mounting the printing cylinders in such a way that they may be moved transversely to adjust the impression pressure and also that they may be moved longitudinally or endwise to obtain accurate register of the printing.

It is already known in the art to carry the journals of the printing cylinders in machines of this kind, in eccentric bushings which are capable of being rotated in the side frames of the machine, in order to adjust the impression pressure. It is also known in the art to provide means to adjust the cylinders endwise in their bearings, to obtain accurate register of the printing, particularly where multi-color work is being done. It is one of the objects of the present invention, however, to provide means for incorporating anti-friction bearings into the machine and still retaining the possibility of the adjustments which have heretofore been used.

Further objects and advantages of the invention will be in part set forth in the following specification, and in part will be obvious therefrom without being specifically pointed out, the same being realized and attained by means of the instrumentalities and structural characteristics and relative arrangements and combinations which will be hereinafter more fully described and which will be pointed out in the claims hereof.

With the above and other objects of the invention in view, the invention consists in the novel construction, arrangement and combination of various devices, elements and parts, as set forth in the claims hereof, one embodiment of the same being illustrated in the accompanying drawings and described in this specification.

In the accompanying drawings,

Fig. 1 shows a portion of the side of a printing machine, including a form cylinder and co-acting inking mechanism;

Fig. 2 is a view similar to Fig. 1, with the outer bracket and side frame removed;

Fig. 3 is a plan view partly in section, showing the arrangement of parts, in the direction indicated by the arrow marked 3 in Fig. 1; and

Fig. 4 is a sectional view in a vertical plane indicated by the arrow marked 4 in Fig. 3.

In carrying my invention into effect in the embodiment thereof which I have selected for illustration in the accompanying drawings and for description in this specification, I provide a supporting frame, comprising a side member,

portions of which are shown in the drawings and marked 11, and a supporting bracket thereon, marked 12. In these supporting means are journaled various moving parts of the mechanism, comprising a form cylinder 15, and the inking mechanism shown diagrammatically in the upper parts of Figs. 1 and 2, which may be of standard construction and which forms no part of the present invention. In machinery of this kind there is of course also journaled in the said supporting frame a suitable impression cylinder, not shown in the accompanying drawings.

By reference more particularly to Figs. 3 and 4, it will be seen that the form cylinder 15 is not journaled directly in the side frame 11 of the machine, but that each end of the shaft 17 of the cylinder is journaled in an eccentric bushing 16, rotatably mounted in the side frame 11. Between the shaft 17 and the inner surface of the bushing 16 are located ball bearings of the usual or any suitable type, comprising balls 18 carried in runways in a manner which will be well understood and which is well shown in Figs. 3 and 4.

The bushing 16 is rotatably adjustable with reference to the side frame 11 by means of the rod 19, which is pivotally connected to the said bushing at its inner end, in a manner best shown in Figs. 1 and 2, and which will be well understood from the drawings. The outer end of the rod 19 passes through a sleeve 22, fast on the side frame, and is slidably supported thereby. This outer end is screw-threaded, and bears a lock nut 23 on the inside of the sleeve 22 and a similar nut 24 outside of said sleeve for the purpose of locking the rod 19 in any desired position after it has been moved longitudinally for the purpose of adjusting the bushing.

In the drawings, mechanism is shown for raising and lowering the inking mechanism, or portions of the same, away from or toward the form cylinder, but the same forms no part of the present invention.

For the purpose of providing for the adjustment of the cylinder in an axial or endwise direction, I provide mechanism shown in Figs. 3 and 4. The bushing 16 is provided with a laterally extending member 25, which projects beyond the frame of the machine and is journaled in the bracket 12. This bracket comprises three branches, a lower vertical branch and two lateral branches, all three of which are shown in Fig. 1, the two lateral branches in Fig. 3, and the lower branch in Fig. 4. The extension 25 is hollowed out to receive a bolt 26, which may be secured in said hollowed-out socket by a pin 27. This bolt

projects laterally and passes through a supporting member 28 (see Fig. 3). The outer end of the bolt 26 is screw-threaded, and bears a lock nut 29 inside of the supporting member 28, and a similar nut 30 outside of the same. It will be obvious that upon one or the other of the nuts 29 or 30, as may be desired, being loosened, so as to afford sufficient play to the parts to be actually moved, the bolt 26 and the member 25, may be moved to adjust the bushing 16, shaft 17 and cylinder 15, axially, and that upon the desired position being attained the lock nuts may be tightened, thus holding the parts securely in position.

The operation of my invention will be obvious from what has been above said with regard to its construction.

The advantages of the invention will also be obvious from what has been above said, and need not be here again particularly pointed out.

I do not limit myself to the particular details of construction set forth in the foregoing specification and illustrated in the accompanying drawings, as the same refer to and set forth only one embodiment of the invention, and it is obvious that the same may be modified, within the scope of the appended claims, without departing from the spirit and scope of the invention. For instance, I do not consider that the invention is by any means limited to the use of ball bearings, as it is obvious that any type of anti-friction bearings, such as roller bearings, could be employed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is as follows:

1. In a printing machine, the following elements in combination: a supporting frame, an eccentric bushing rotatably mounted therein, anti-friction bearings in said eccentric bushing, a printing cylinder journaled in said anti-friction bearings, and means adapted to move said eccentric bushing and said printing cylinder axially.

2. A machine as set forth in the preceding claim, in which the means adapted to move the eccentric bushing and the printing cylinder axially comprise a bracket on the supporting frame of the machine, a shaft laterally extending from said bushing through said bracket, a bolt secured to said shaft and having its outer end screw-threaded and extending through a fixed support on said bracket, and a lock nut on said bolt adjacent said fixed support.

3. In a printing machine, a supporting frame, an anti-friction bearing having an inner member and an outer member, an eccentric bushing rotatably supported in the frame and secured to the outer member, a printing cylinder having a shaft to which the inner member is secured, means to rotate the bushing to adjust the printing cylinder transversely of its axis, and means to move the bushing axially to effect an axial adjustment of the cylinder.

4. In a printing machine, the following elements in combination: a supporting frame, a bushing, a lateral extension on one end of said bushing having a screw threaded portion on same, and means for adjusting said screw threaded portion and locking same when an adjustment is made.

5. In a printing machine, the combination of a supporting frame, a bushing mounted therein, a printing cylinder journaled in said bushing, means adapted to move the bushing and the printing cylinder axially which comprises a bracket on the supporting frame of the machine, a shaft laterally extending from said bushing through said bracket, a bolt secured to said shaft and having its outer end screw-threaded and extending through a fixed support on said bracket, and lock nuts on said bolt adjacent said fixed support to adjust said bushing and lock same in an adjusted position.

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