

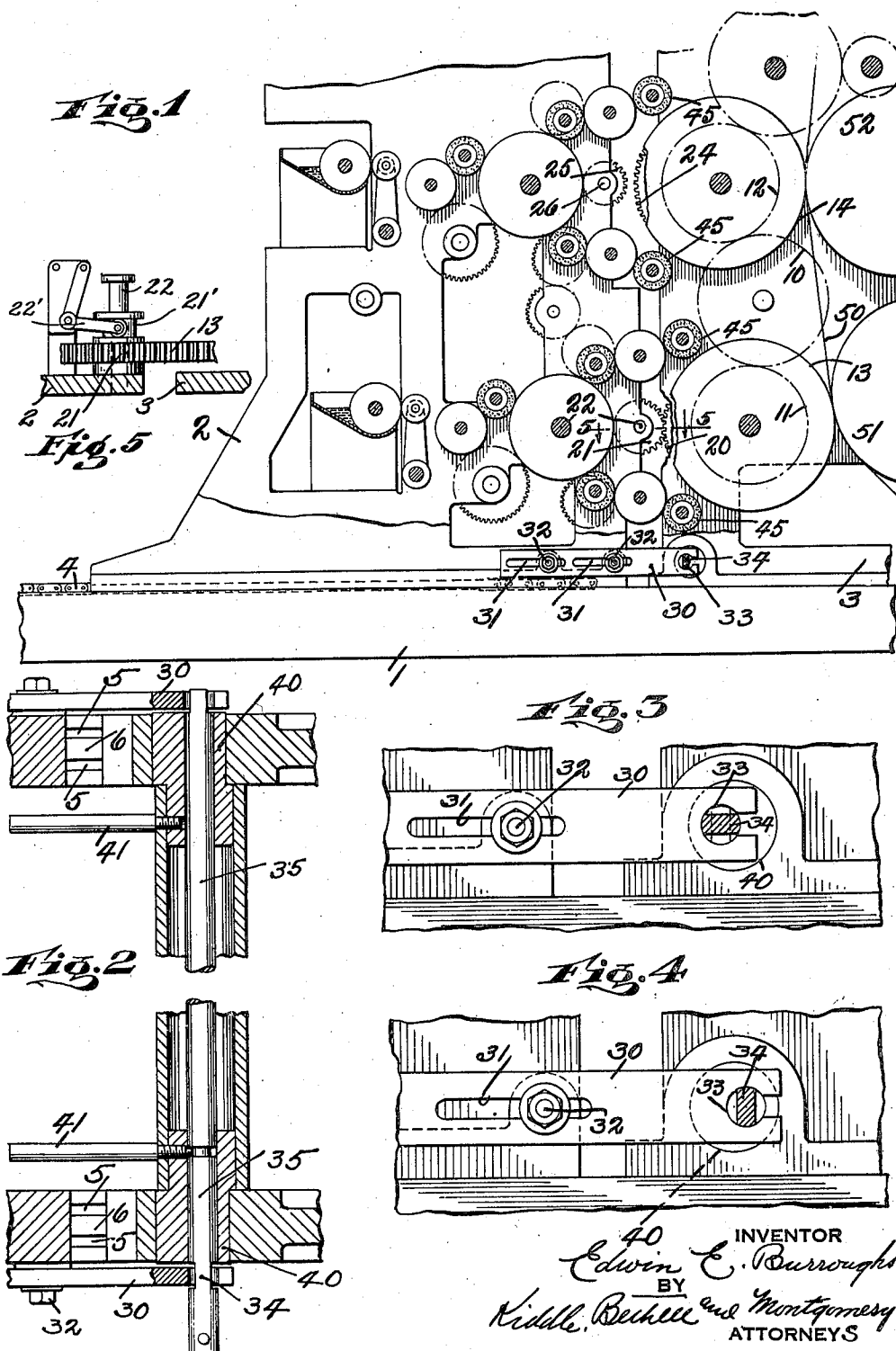
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E. E. BURROUGHS

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PRINTING PRESS

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INVENTOR
Edwin E. Burroughs
BY
Kiddle, Beckell and Montgomery
ATTORNEYS

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PRINTING PRESS

Edwin E. Burroughs, Hamilton Beach, Long Island, N. Y., assignor to Potdevin Machine Company, Brooklyn, N. Y., a corporation of New York

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This invention relates to improvements in printing presses and is particularly directed to the provision of a construction wherein the inking mechanism is movable as a unit toward and away from the printing mechanism.

It is an object of the present invention to provide a printing press of the character indicated wherein the inking mechanism as a unit can be entirely separated from the printing mechanism so as to provide access to the printing plates and wherein the two mechanisms can be separated to a lesser degree to disengage the inking rollers from the printing rollers without interrupting the drive for the inking mechanism so that the vibrating rollers may continue to ink the inking rollers.

From the following description and the accompanying drawing other objects of my invention will be manifest and the invention more clearly understood.

In the drawing:

Fig. 1 is a fragmentary elevational view of my improved device;

Fig. 2 is a transverse sectional view of the latching mechanism for the inking and printing mechanisms;

Fig. 3 is an enlarged elevational view of the said latching mechanism;

Fig. 4 is a similar view in another position; and

Fig. 5 is a view taken on line 5—5 of Fig. 1.

Referring to the drawing in detail, 1 designates the base of the press which supports a frame 2 carrying the inking mechanism and a frame 3 supporting the printing mechanism.

The inking mechanism frame 2 is mounted on a roller chain 4 whereby the same may be moved along the base 1 of the machine relative to the printing mechanism, the links of the chain 4 resting in grooves 5 in track 6, while the rollers of the chain ride on the track. This track is shown in plan in Fig. 2. It will be obvious that when the inking mechanism and printing mechanism are not latched to each other the inking mechanism may be moved away from the printing mechanism on the roller chain along the base 1 to any desired extent to provide access between the two mechanisms.

The printing press illustrated is for multi-color printing and comprises a plurality of printing rollers in banks or tiers. The inking mechanism having corresponding cooperating banks or tiers of inking rollers, fountain rollers, etc., as is well known in this art.

The printing mechanism and inking mechanism

are driven from gear 10 receiving its power from any suitable source. This gear 10 meshes with gears 11 and 12 to drive printing rollers 13 and 14, respectively. The rollers above the roller 14 (not shown in the drawing) are driven by suitable gearing from the gear 12 as will be obvious.

Mounted on the shaft of the gear 11 but outside of the frame of the printing mechanism is a gear 20 adapted to mesh with a pinion 21 mounted on shaft 22 outside of the inking mechanism frame. Gear 24 mounted on the shaft of gear 12 also on the outside of the frame of the printing mechanism is adapted to engage pinion 25 mounted on a shaft 26 outside of the frame of the inking mechanism. The pinions 21 and 25 are not in mesh with their respective gears 20 and 24 at the same time, as will be hereinafter pointed out.

In addition to moving the inking mechanism away from the printing mechanism to provide access between the two mechanisms thereby disconnecting the drive entirely as above described, it is also desired to move the inking mechanism away to a lesser extent when no printing is taking place, but to retain the driving connection between the two. In this case, the inking rollers are moved out of contact with the printing rollers 13 and 14, but the inking of the inking rollers will continue. In other words, the vibrating rollers will continue to rub and spread ink on the inking rollers to secure the proper density of the color which is very desirable in color printing.

When the inking mechanism has been moved away from the printing mechanism, thereby disengaging the pinion 25 from the gear 24, and it is desired to retain the driving connection between the two mechanisms the inking mechanism or the lower bank of rollers thereof is connected to the drive gear 10 through gear 20 and pinion 21, the pinion 21 at this time having been moved transversely on the shaft 22 to bring the same in line with the gear 20. The pinion 21 is provided with a collar 21' which is engaged by a fork 22', as shown in Fig. 5, whereby the said transverse movement of the pinion 21 along the shaft 22 may be effected by manual operation.

In this regard I have provided a novel latching mechanism which will permit of such movement without disconnecting the drive. This mechanism comprises a bar or plate 30 adjustably mounted on the frame 2 of the machine. This plate 30 is slotted at 31 to receive bolts 32 to provide for the adjustment thereof on the frame 2 of the machine. The forward end of the plate 30

is provided with a circular transverse bore 33 slotted at its end to receive the flattened portion 34 of a transverse bar 35 when the inking mechanism is moved into juxtaposition with the printing mechanism.

The bar 35 is adapted to be rotated by means of a handle to rotate the flat portion 34 to vertical position in the bore 33 as shown in Figs. 1 and 4 to lock the same in place and to a horizontal position in the bore 33 as shown in Fig. 3 whereby the plate 30 may be engaged or disengaged thereby, as the case may be.

The rod 35 has its bearing in an eccentric sleeve 40 mounted for rotation in the frame of the printing frame. This eccentric sleeve is provided with an operating handle 41 whereby the same may be rotated.

It will be obvious from the description thus far that the inking mechanism can be moved away from the printing mechanism thereby entirely disconnecting the drive to provide access between the two mechanisms. It will also be obvious that the same may be moved to a lesser degree to disconnect the inking rollers from the printing rollers. When the mechanisms are separated to this lesser degree the parts are in the position as shown in Figs. 1 and 3. When it is desired to bring the two mechanisms into operating position, that is, with the inking rollers 45 in contact with the printing rollers 13 and 14, assuming that the flat 34 is in horizontal position as shown in Fig. 3, the inking mechanism frame 2 is rolled out or moved away from the printing mechanism frame 3 to disconnect or free the plate 30 from the rod 35. The pinion 21 is then moved manually transversely on its shaft to disconnect the same from the path of the gear 20, the operator will then move the handle or lever 41 to rotate the eccentric sleeve 40 to the position shown in Fig. 4. The inking mechanism frame 2 is then moved into engagement with the printing mechanism, bringing the pinion 25 into mesh with the gear 24 thereby to provide a drive for the inking mechanism instead of through the pinion 21 and gear 20. It will be appreciated that with the parts in this position the flat 34 will be in vertical position as shown in Fig. 4, whereby to lock the parts in position.

With the parts moved into the position just described the press is ready for the printing operation, the paper 50 being fed between the rollers 51, 52 and 13, 14.

It is to be understood that various changes and modifications may be made in the structure herein illustrated and described without departing from the spirit and scope of my invention.

What I claim is:—

1. In a printing press the combination of printing mechanism and inking mechanism movable into and out of contact with each other, a latch comprising a plate carried by one of said mechanisms and having a slotted end communicating with a circular bore therein, a transverse rotatable rod carried by the other of said mechanisms and having a flattened portion adapted to enter said circular bore through said slot, and an eccentric bearing for said rod, said bearing being rotatable to latch said mechanisms in operating contact with each other.

2. In a printing press the combination of printing mechanism and inking mechanism, a support therefor, a track on said support, one of said mechanisms being movable along said track into and out of contact with the other,

latching mechanism, one component of which is carried by one of said mechanisms and comprising an adjustably mounted plate having a slotted end communicating with a circular bore therein, a transverse rotatable rod comprising the other component of said latching mechanism carried by said support, said rod having a flattened portion adapted to enter said circular bore through said slot, an eccentric bearing for said rod, said bearing being rotatable to latch said mechanism in printing position when the said eccentric bearing is in one position and to latch the said mechanisms in non-printing position when in another position.

3. In a printing press the combination of printing mechanism and inking mechanism, a support therefor, a track on said support, one of said mechanisms being movable along said track into and out of contact with the other, latching mechanism, one component of which is carried by said movable mechanism and comprising an adjustably mounted plate having a slotted end communicating with a circular bore therein, a transverse rotatable rod comprising the other component of said latching mechanism carried by said support, said rod having a flattened portion adapted to enter said circular bore through said slot, an eccentric bearing for said rod, said bearing being rotatable to latch said mechanism in printing position when the said eccentric bearing is in one position and to latch the said mechanisms in non-printing position when in another position, a common drive including a drive gear for said inking and printing mechanisms, a pinion driven by said drive gear for driving the inking mechanism when the two mechanisms are in printing position and another pinion driven by said drive gear for driving said mechanisms when the same are in non-printing position, the latter pinion operating only when the said mechanisms are latched in non-printing position by said mechanism and the first-mentioned pinion operating only when the said mechanisms are latched in printing position by said latching mechanism.

4. In a printing press the combination of inking mechanism, printing mechanism, means for effecting relative bodily movement between the inking mechanism and the printing mechanism, to bring the one out of operative relation with respect to the other, driving mechanism for driving the said printing mechanism and inking mechanism in their normal operative position, and a driving connection adapted to be shifted into operative position when the inking mechanism and printing mechanism have been moved out of operative relation with respect to each other whereby the inking mechanism and printing mechanism will continue to be driven.

5. In a printing press the combination of inking mechanism, printing mechanism, means for effecting relative bodily movement between the said two mechanisms to bring the one out of operative relation with respect to the other, a gear train for driving the inking and printing mechanisms, and a gear adapted to be moved into the driving train when the inking mechanism and printing mechanism are out of cooperative relation whereby the inking mechanism and printing mechanism will continue to run.

6. In a printing press the combination of inking mechanism, printing mechanism, means for effecting relative bodily movement between the said two mechanisms to bring the one out of operative relation with respect to the other, latching mechanism,

anism for latching the mechanisms in adjusted position, a gear train for driving the inking and printing mechanisms, and a gear adapted to be moved into the driving train when the inking mechanism and printing mechanism are out of cooperative relation whereby the driving of the inking mechanism and printing mechanism will be continued.

7. In a printing press the combination of inking mechanism and printing mechanism, means for effecting relative bodily movement between the said two mechanisms to bring the one out of operative relation with respect to the other, latching mechanism comprising a rotatable eccentric member for latching the inking mechanism in contact with the printing mechanism and out of contact with the printing mechanism, a gear train for driving the inking and printing mechanism, and a gear adapted to be moved into and out of the driving train whereby the inking mechanism and printing mechanism are driven at all times.

8. In a printing press the combination of inking mechanism comprising fountain rollers and inking rollers, printing mechanism comprising printing rollers, said inking mechanism being movable relative to the printing mechanism to move said inking rollers into and out of contact with said

printing rollers, a latch carried by one of said mechanisms and a cooperating member carried by the other to latch the inking mechanism with the inking rollers in contact with the printing rollers, an eccentric mount for said cooperating member, the rotation of said member moving the inking rollers into and out of contact with said printing rollers, a gear train for driving the inking and printing mechanism, and a gear adapted to be moved into and out of said gear train whereby the inking mechanism and printing mechanism are driven at all times.

9. In a printing press the combination of inking mechanism comprising fountain rollers and inking rollers, printing mechanism comprising printing rollers, a track for said inking mechanism, said inking mechanism being movable along said track to bring said inking rollers into and out of contact with said printing rollers, a gear train for driving said inking mechanism and printing mechanism, a gear adapted to be moved into and out of said train so that the inking mechanism and printing mechanism are driven at all times, and manually operable means for latching said inking mechanism into and out of contact with the printing mechanism.

EDWIN E. BURROUGHS.