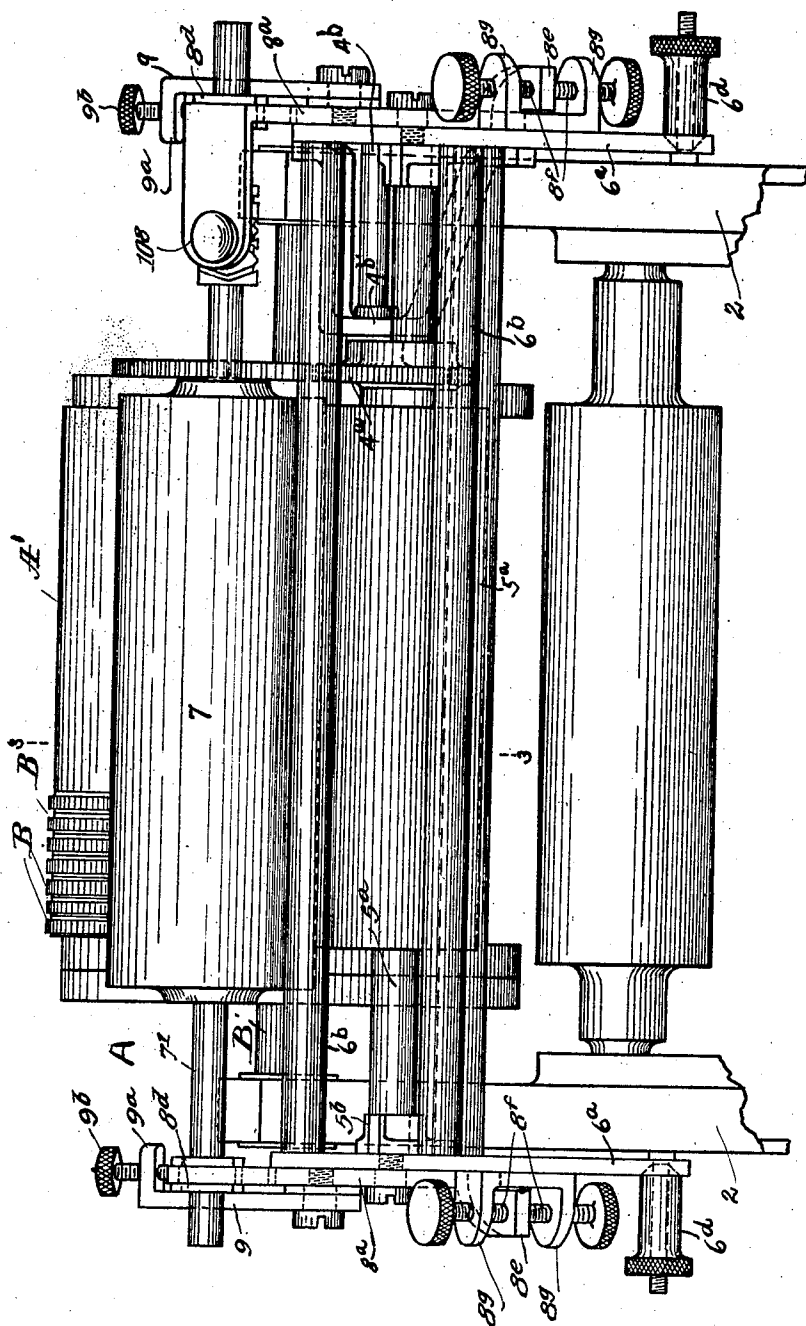


1,377,142.

Patented May 3, 1921
 3 SHEETS—SHEET 1.

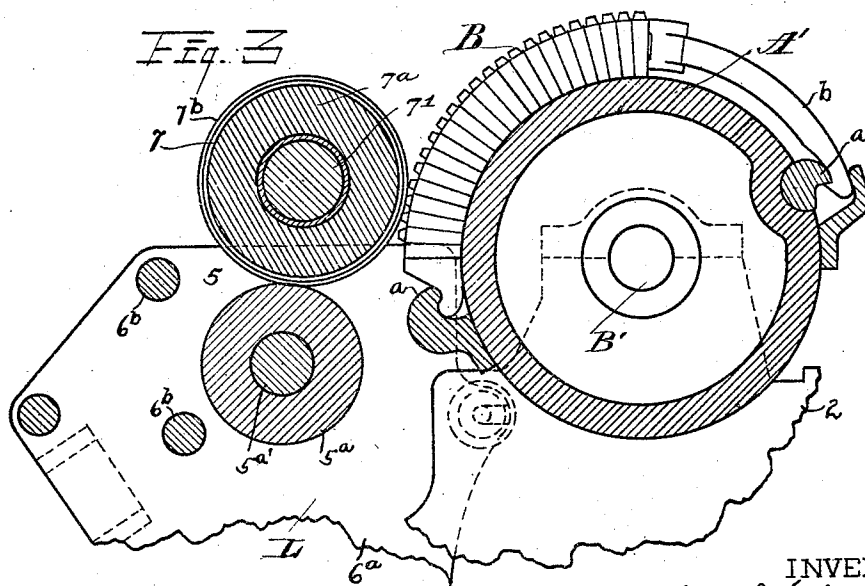
Fig. 1



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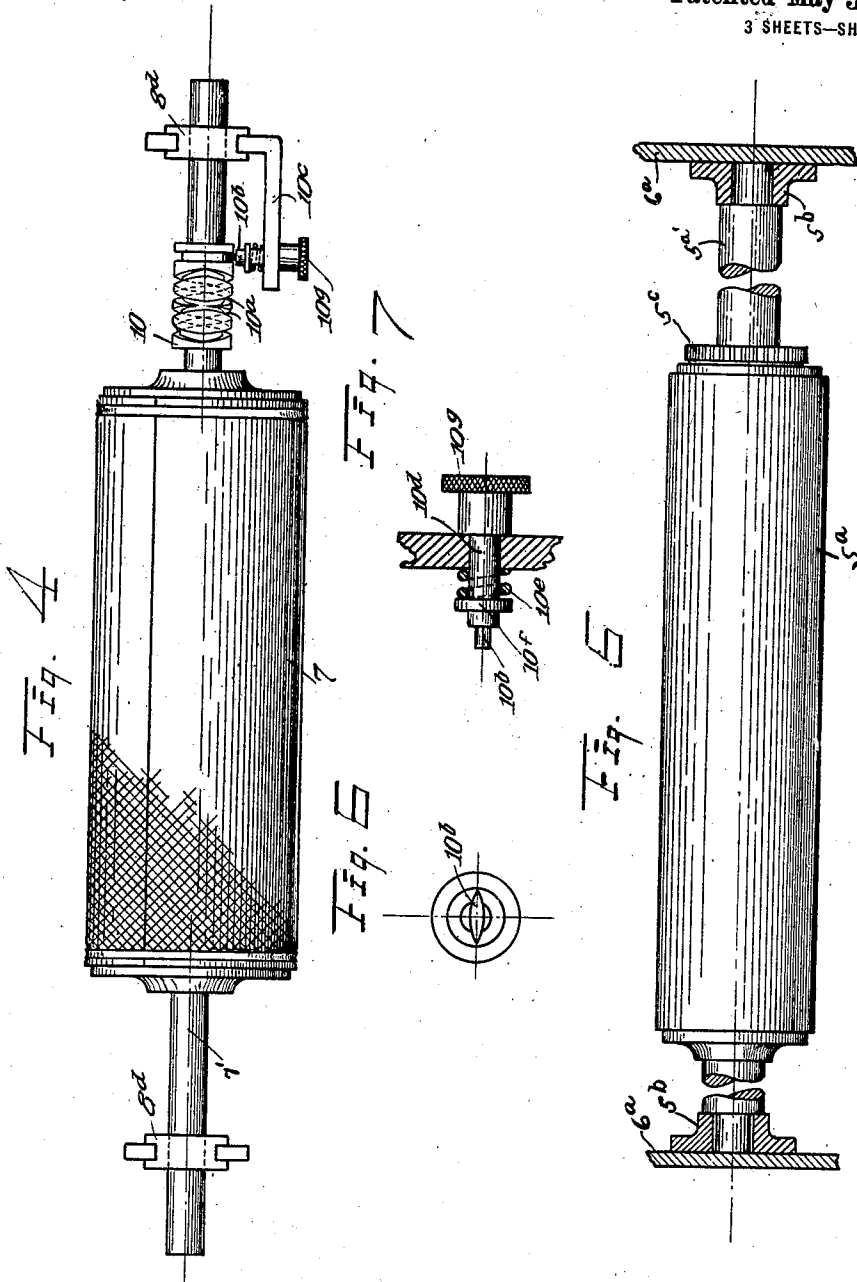


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A. D. SABORSKY.
 INKING MECHANISM.
 APPLICATION FILED DEC. 8, 1916.

1,377,142.

Patented May 3, 1921.
 3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ARTHUR D. SABORSKY, OF LAKEWOOD, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO THE ADVANCE MANUFACTURING COMPANY, OF DETROIT, MICHIGAN, A CORPO-
RATION OF MAINE.

INKING MECHANISM.

1,377,142.

Specification of Letters Patent.

Patented May 3, 1921.

Application filed December 8, 1916. Serial No. 135,726.

To all whom it may concern:

Be it known that I, ARTHUR D. SABORSKY, a subject of the Emperor of Austria-Hungary, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in and Relating to Inking Mechanism, of which the following is a specification.

This invention relates to a printing apparatus, more particularly to the devices for inking type or embossed surfaces for printing purposes.

One object of the invention is to provide means adapted to ink the type of a printing press in such manner that the printed impression therefrom will have the appearance usually effected by a ribbon such as in a typewriter.

Another object of the invention is to provide an improved ink distributing roller for inking the type of a printing press whereby manually operated typewriter effects can be obtained.

With these and other objects in view, the invention consists of the parts and combination or combinations of parts hereinafter described and set forth in the appended claims.

For the purpose of illustration, I have in the accompanying drawings shown and herein described one embodiment of my invention.

Referring to the drawing, Figure 1 is an elevation of an inking means embodying my invention, and a portion of the form of printing press to which said inking means may be applied.

Fig. 2 is a side elevation of the parts shown in Fig. 1.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a plan view of the ink distributing device.

Fig. 5 is a view of the ink supplying device.

Figs. 6 and 7 are detail views.

In the drawings, A indicates, as an entirety, a printing press which may be of any preferred form of construction; a portion only of the press being shown. In the construction of press herein chosen to be illustrated, there is provided a bed, which may consist of a cylinder or drum A', to carry type B upon its surface. In using the term "type" herein, I wish to cover any and all forms of devices, such as type, plates, slugs,

etc., from which impressions can be made, it being entirely immaterial, so far as my present invention is concerned, what particular form of printing devices are used. The type or printing devices B may be secured to the drum in any suitable manner, but preferably by arc members b, which may extend through openings in the type and be detachably secured at their opposite ends to engaging members a, a, on the drum A'.

The drum A' is preferably fixed to a shaft B'. The opposite ends of the shaft B' are mounted in suitable bearings provided in the walls 2 constituting the frame of the printing press. At one end, the drum A' may be provided with two gears 3, 4, one of which, 3, meshes with a gear 3^a, that forms an element of suitable power transmitting devices to rotate the drum A'. The other gear, 4, meshes with and drives a pinion 4^a which in turn drives the inking devices 5, as will be later set forth.

6 indicates a frame for supporting the inking devices 5. The frame 6 preferably comprises a pair of plates 6^a, 6^a, which are rigidly connected in spaced relationship by a plurality of tie rods 6^b. The opposite ends of the rods 6^b may be reduced to form shoulders against which the inner faces of the plates 6^a, 6^a rest. The inner side edges of the plates 6^a are formed with slots 6^c which receive pins 2^a projecting from the outer faces of the press frame 2 to detachably connect the frame 6 to the frame 2. The pins 2^a may be formed with screw threads to receive clamping nuts 6^d by which the plates 6^a may be securely fixed to the frame 2.

Of the inking devices 5, 5^a indicate an ink supply or fountain roller, which is preferably formed of suitable material, such as felt, capable of absorbing and maintaining a relatively large quantity of printing or transferring ink. The shaft 5^{a'} of the absorbent roller 5^a is mounted in suitable bearings 5^b preferably provided on the inner faces of the plates 6^a. The upper walls of the bearing 5^b are open to permit the easy removal of the roller shaft 5^{a'}. Near one end, the shaft 5^{a'} has fixed to it a gear 5^c, which meshes with and is driven by the gear 4^a. The gear 4^a is mounted on a stud shaft 4^b. The inner end of the stud shaft 4^b is mounted in a bearing provided on a bracket

4^b; the outer end of the shaft is mounted in a bearing provided on the adjacent wall 6^a.

7 indicates the inking device which applies or coats the type B with ink and at the same time imparts thereto the property of causing the type B to imitate ribbon effects such as are produced by typewriters. The device 7 preferably comprises a roller formed of a core of suitable material, the surface of which may be embossed to imitate a typewriter ribbon, or provided with one or more layers of fabric, or wire mesh material as shown at 7^b. The fabric or wire mesh material may be in the form of or applied to a belt running around the roller 7^a and one or more guide rollers, or the fabric may be directly applied to the surface of the roller. As shown in the drawings, the fabric 7^b is wrapped around the core 7^a several times, care being taken to prevent any uneven surfaces in the circumference of the roller. Preferably the ribbon or fabric is wrapped twice around the core with its ends terminating at substantially the same point. The fabric 7^b may be of silk or other material and preferably woven with a mesh corresponding to that of the ribbons usually used on typewriters. The roller 7 normally rests in engagement with the fountain or supply roller 5^a and in a position to engage with and ink the type B as the drum A' rotates. The roller 7 receives ink from the fountain roller 5^a and then applies it to the type B. Where the core of material comprising the roller 7^a is formed of felt, the ink may be supplied to such core and it in turn supplies the ink to the inner surface of the fabric. In carrying out its function, the fabric 7^b imparts to the surface of the type B an impression of its weaving and the type B in turn transfers such impression in printing onto the papers or cards being operated upon, so that the latter have the eye appearance of work or typewriting actually done on a typewriter by a typist.

I prefer to provide means, indicated as an entirety at 8, for supporting the ink applying roller 7 in a manner which permits it to be moved or adjusted toward and from the printing devices and also permits it to be moved or adjusted toward and from the fountain roller 5^a, said means providing for either of these adjustments independently of the other. Of these supporting means, 8^a, 8^b, indicate a pair of rockers each pivoted at 8^b to the outside face of the adjacent frame plate 6^a. The axis 8^b for rockers 8^a, is preferably coincident with the axis of the shaft 5^a in order that the roller 7 may be adjusted toward and from the printing devices B without affecting its position relative to the roller 5^a. 8^c indicates an elongated slot formed in the upper end of each rocker 8^a to slidably receive a plate 8^d. The plates 8^d are formed with bearing openings in

which the shaft 7' of the roller 7 rotates and slides endwise, as will be later described. The opposite side edges of the plates 8^d are grooved to receive the walls of the slots 8^c. The lower end of each rocker 8^a is provided with a foot piece 8^e which is preferably disposed between the free ends of two aligned screws 8^f. The screws 8^f are mounted in screw-threaded openings formed in spaced brackets 8^g which are fixed in any well known manner to the outer face of the adjacent plate 6^a. Both screws are tightened against the foot 8^e and thus hold the rocker 8^a fixedly in any desired position. To adjust the rocker 8^a, one screw 8^f is backed and the other screwed up, thus causing the rocker 8^a to move about its pivot the desired distance. The effect of this operation will be to move the roller 7 toward or from the printing devices B, accordingly as the screws 8^f are moved in one direction or the other.

9 indicates an arm carried by each rocker 8^a. Each arm 9 extends longitudinally of the rocker and is provided at its free end with an inwardly turned support 9^a. The support 9^a is formed with a threaded opening to receive an adjusting screw 9^b which is preferably disposed in the plane of the adjacent bearing plate 8^d so that its free end can engage therewith. The screws 9^b serve to prevent the bearing plates 8^d for the roller 7 from sliding outwardly in the slots 8^c, and to maintain the roller in operative engagement with the fountain roller 5^a; the screws 9^b also serve as adjusting devices to move the roller 7 toward the roller 5^a whereby the former may be caused to bear against the roller 5^a with any desired degree of pressure. The longitudinal axis of each slot 8^c preferably extends in a direction which is coincident with a plane cutting the axis of the rollers 7 and 5^a, so that the adjustment of the former will take place in that plane. The arms 9 are curved or otherwise shaped, as indicated at 9', to extend around the shaft 7' to permit the latter to extend outwardly beyond their bearings a considerable distance. Each arm 9 is preferably pivoted at 9^c to the adjacent rocker 8^a. This form of construction permits the arms 9 to be moved outwardly (see dotted lines in Fig. 2) when it is desired to remove the roller 7.

The shaft 7' is preferably extended at its opposite ends so that in addition to its rotary movement, it may be caused to reciprocate axially in its bearings by the following devices chosen as one form of construction for effecting such movement: 10 indicates a sleeve fixed to the shaft 7' between one end of the core 7^a and the adjacent plate 6^a. 10^a, 10^b, indicate two grooves formed in the sleeve. These grooves are spiraled in opposite directions and the opposite end of each groove merges in or connects with the op-

posite ends of the other groove to form one substantially continuous groove or cam. 10^b indicates a shoe which slides in the grooves 10^a, and by its engagement with the side walls of the grooves, causes the shaft 7' to move or reciprocate longitudinally when it is rotated. The shoe 10^b is supported by a bracket 10^c which in turn is preferably fixed to the adjacent rocker 8^a. The shoe 10^b is connected to the bracket 10^c by a pin 10^d which rotatably fits a bearing opening therein, so that the shoe 10^b, which is preferably elongated as shown in Fig. 6, may accommodate itself to the direction of the grooves 10^a. The pin 10^d is preferably movable axially in its bearing opening to permit its removal from the grooves 10^a, but is normally pressed toward the bottom walls of the grooves by a coiled spring 10^e interposed between the bracket 10^c and a collar 10^f that is fixed to the pin. At its outer end the pin carries a head 10^g which engages the bracket 10^c to limit the inward movement of the pin 10^d. When it is desired to rotate the roller 7 without moving it endwise, the shoe 10^b is disengaged from the grooves 10^a and placed in an annular groove 10^h formed in the sleeve 10 near its outer end. When so arranged, the shoe 10^b will prevent longitudinal or axial movement of the shaft 7'.

By my invention I am enabled to rapidly print from printers' type, as well as other forms of printing devices, upon surfaces in a manner which gives typewriter ribbon effects. It will therefore be seen that by the use of a mesh material on the ink applying devices, printed matter, such as letters, substantially imitating individual work on a typewriter, can be produced in a rapid and economical manner. The fabric or section of woven material surrounding the roller serves to form a resilient surface for contact with the printing devices and operates to efficiently apply the ink thereto. My invention is advantageously adapted for use in connection with printing machines of the drum type, such as shown in the drawings; when so applied it simplifies the construction of the apparatus and permits it to be operated at a high rate of speed.

To those skilled in the art of making apparatus of the class described, many alterations in construction and widely differing embodiments and applications of my invention will suggest themselves, without departing from the spirit and scope thereof. My disclosures and the description herein are purely illustrative, and are not intended to be in any sense limiting.

What I claim is:

1. In apparatus of the class described, the combination with a frame and a printing drum, of an ink supplying roller mounted on said frame, a pair of members pivotally mounted intermediate their ends on an axis

coincident with the axis of said roller, a roller adapted to apply ink to the printing devices on said drum supported by corresponding ends of said members, and devices engaging with the other ends of said members to hold the axis of said applying roller in fixed relation to said drum, said devices being adjustable to adjust said roller relative to said drum.

2. In apparatus of the class described, the combination with a printing drum, of a roller adapted to apply ink to the printing devices on said drum, means for supplying ink to said roller, adjustable supports for said applying roller, and means movable with said supports for reciprocating said roller endwise of its axis relative to said drum.

3. In combination, a frame, a type bearing cylinder, a source of ink supply, and an inking roll, shafts for said type bearing cylinder and inking roll supported on said frame, means for adjusting the position of said inking roll relative to said type bearing roll, and means for reciprocating the inking roll relative to the face of the type bearing roll.

4. In combination, a frame, a type bearing cylinder, a source of ink supply and an inking roll, shafts for said cylinder and roll supported on said frame, means for adjusting the position of said inking roll relative to said type bearing cylinder, means for reciprocating the inking roll relative to the face of the type bearing cylinder, and means for engaging and disengaging said reciprocating means to either reciprocate said inking roll or to confine the same to direct revolution upon its shaft.

5. In combination with supporting means and a type bearing cylinder rotatably mounted thereon, of an inking roller, devices on said supporting means for removably supporting the shaft of said inking roll, said devices including means for adjusting the inking roll relative to said type bearing cylinder, the shaft of said inking roll being provided with a controlling groove, and a releasable device upon said supporting means for engaging the walls of said controlling groove to move said roll endwise.

6. In apparatus of the class described, the combination with a printing drum, of a roller for applying ink to the printing devices on said drum, the shaft of said roller being formed with spiral grooves and an annular groove, and a shoe movably mounted to engage either the walls of said spiral grooves or the walls of said annular groove.

7. In apparatus of the class described, the combination with a support, a printing drum mounted thereon and provided with a gear and means for rotating said drum, of a frame, an ink supplying roller rota-

ably mounted on said frame, an ink applying roller rotatably mounted on said frame and in contact with said supplying roller and said drum, a gear carried by said frame arranged to mesh with and be driven
5 by the gear on said drum for rotating one of said rollers, and means for detachably

connecting said frame to the said support, whereby it can be detached from and attached to said support without changing the relationship of said ink applying roller to said drum. 10

In testimony whereof I affix my signature.
ARTHUR D. SABORSKY.