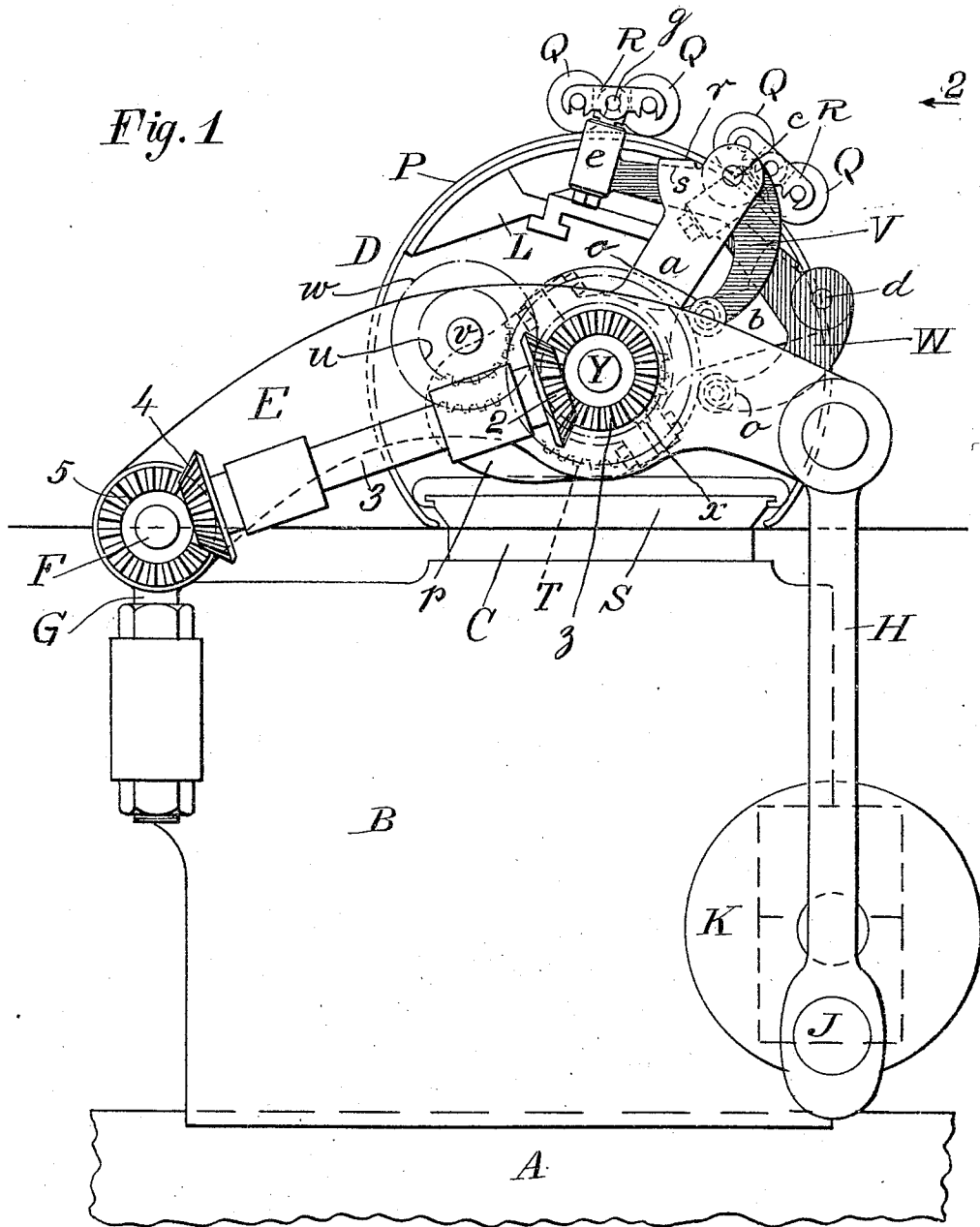


B. VON PHILP.
INKING DEVICE.
APPLICATION FILED APR. 3, 1909.

955,197.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 1.



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3 SHEETS—SHEET 2.

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Fig. 2

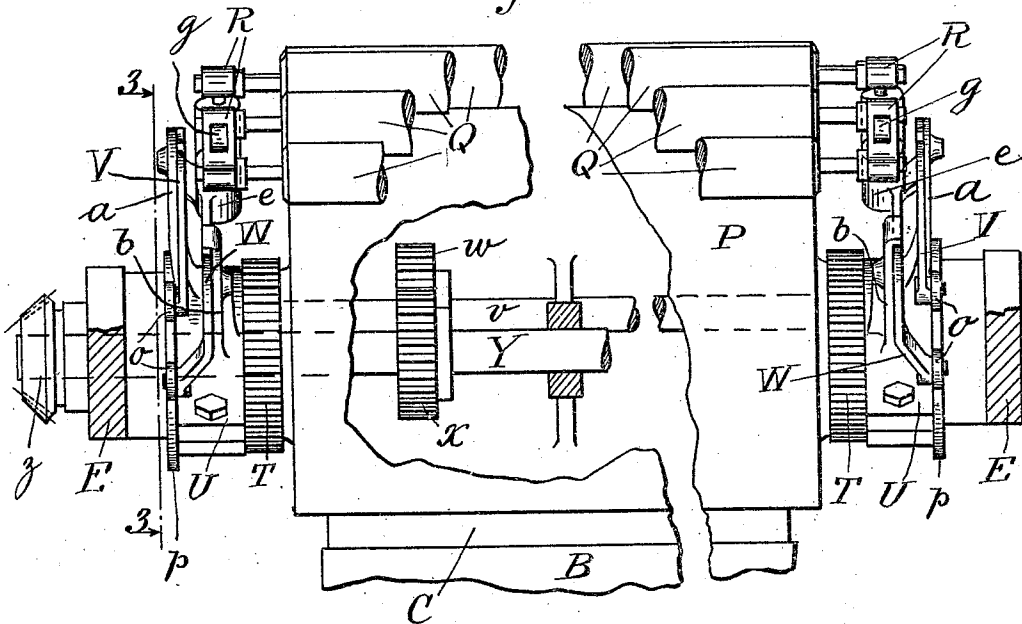
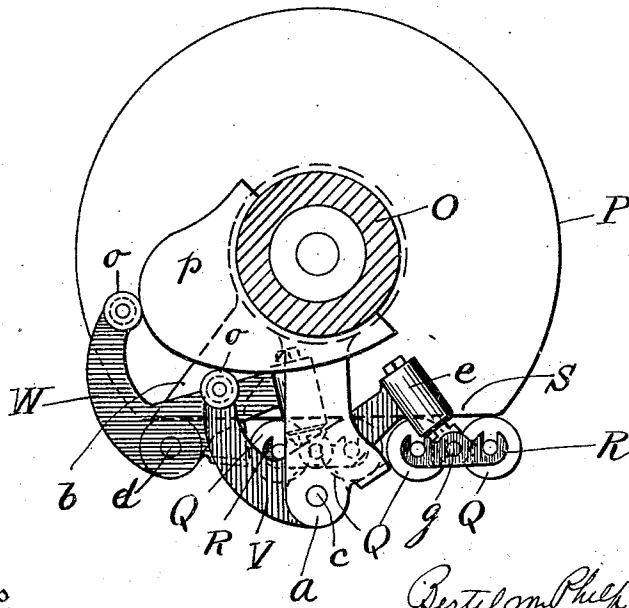


Fig. 3



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Fig. 4

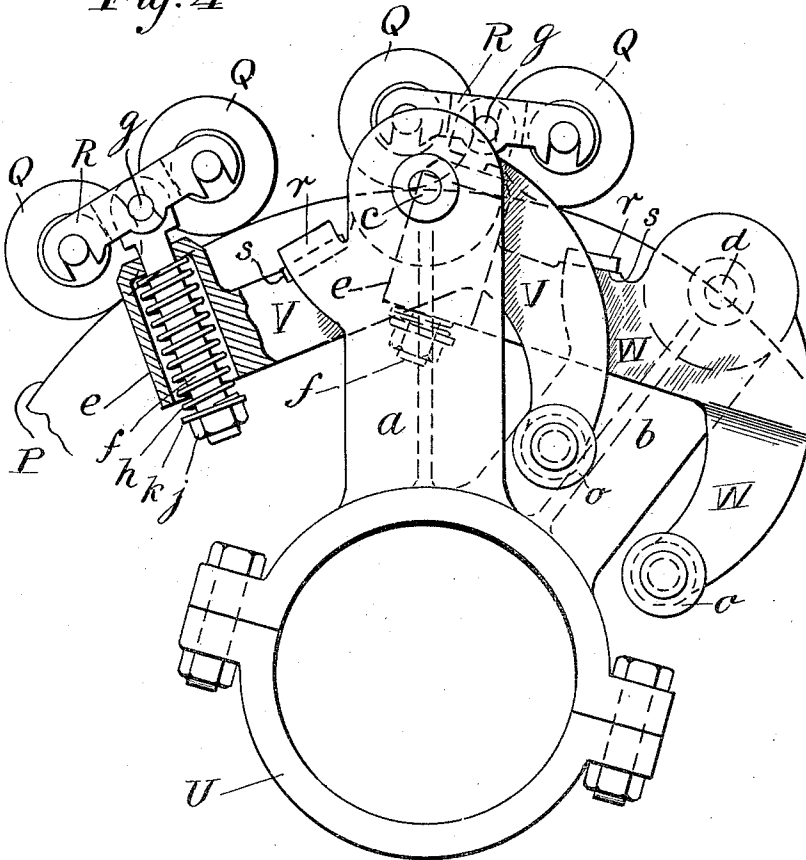


Fig. 5

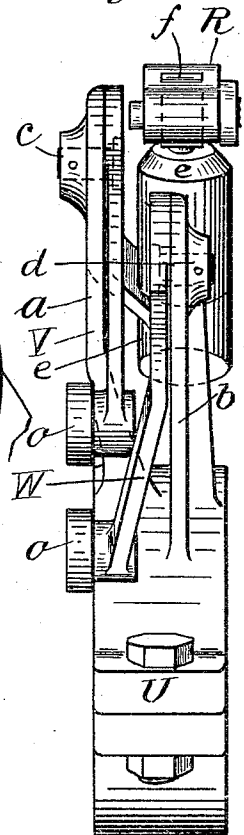
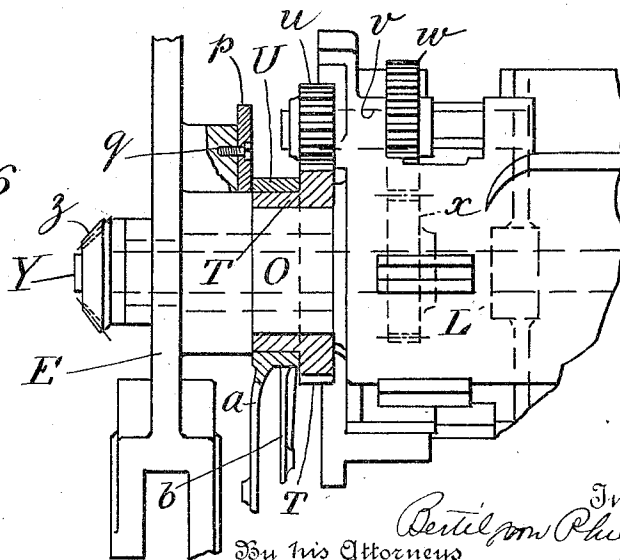


Fig. 6



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UNITED STATES PATENT OFFICE.

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INKING DEVICE.

955,197.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed April 3, 1909. Serial No. 487,765.

To all whom it may concern:

Be it known that I, BERTIL VON PHILP, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Inking Devices, of which the following is a specification, accompanied by drawings.

This invention relates to improvements in printing presses, and has for its object to keep the inking rollers against the face of the type and prevent them from jumping on the chase when the inking rollers are traveling at high speed.

To these ends the invention consists of the inking device substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a side elevation of the device; Fig. 2 is a front elevation of Fig. 1 looking in the direction of the arrow 2; Fig. 3 is a transverse detail sectional view on the line 3—3 of Fig. 2, looking in the direction of the arrows with the inking rollers in their lowermost position; Fig. 4 is an enlarged detail side elevation of a portion of the device partly in section with the inking rollers in a slightly different position from that shown in Fig. 1; Fig. 5 is a front elevation of Fig. 4; Fig. 6 is a partial plan view partly in section of the device with the inking plate removed and the operative connections for the inking rollers revolved to the lowermost position.

Referring to the drawings, A represents the bed of the press and B the frame upon which is carried the platen C and from which is supported the vertically movable form carrier D. The form carrier comprises the arms E pivoted on the studs F carried by the bolts G. The outer ends of the arms E are pivoted to connecting rods H which in turn are connected to the cranks J on crank disks K, and any suitable means may be provided for driving the crank disks and thus vertically reciprocating the arms E. Preferably forming part of the arms E is a casting L having reduced portions O and affording means for supporting the semi-circular inking plate P and the operative connections for rotating the inking roller carriages. The inking rollers Q are preferably arranged in pairs on the carriages R

and means are provided for rotating the carriages and rollers bodily about the form carrier, while keeping the rollers tight against the type in their chase S as shown in Fig. 3.

Split gears T are mounted on the reduced portions O on the ends of the casting L and on these gears are mounted the split sleeves U carrying the arms a and b upon which are pivoted at c and d the bell cranks V and W. The outer ends of these bell cranks are provided with boxes e through which pass the rods f pivoted at g to the inking roller carriages R. The compression springs h are arranged in the boxes e and are compressed between the upper ends of the boxes and adjusting nuts and washers j and k, so that the springs h are adapted to maintain the inking rollers in contact with the inking plate. The inner ends of the bell cranks V and W are provided with the rollers o which are adapted to follow the surfaces of the cams p suitably secured against the inside of the arms E as by means of the bolts q. The outer arms of the bell cranks are sufficiently bent or curved as shown in the drawings to bring the pivotal connections of the carriages R in line with each other, and the inner ends of the bell cranks are sufficiently offset to bring the rollers o in line, so that they will travel over the surfaces of the cams p. These cams p are so shaped and provided with a high portion of such design that as the gear T and with it the arms a and b and bell cranks are revolved, the inner ends of the bell cranks will be forced outwardly when the inking rollers are traveling across the type, thus forcing the inking rollers inwardly against the type and making even contact between the rollers and the type. As the inking rollers rise on the inking plate to their uppermost position, the rollers o or followers o leave the cam surfaces, and the inking rollers follow the surface of the inking plate. The arms a and b are preferably provided with stops r and the outer arms of the bell cranks are provided with stops s, so that the outward movement of the bell cranks is limited by the stops r. When the stops s and r are in contact the inking rollers bear tightly against the inking plate and adjustment of the pressure is provided by means of the springs h. As the inking rollers pass over the type, the springs h allow for inequalities

in the cam and provide elasticity in the rollers.

In order to actuate the inking rollers and revolve the gears T, any suitable means may be provided, but in this instance pinions *u* are provided on the counter shaft *v* meshing with the gears T and a gear *w* inside the casting L on counter shaft *v* meshes with the gear *x* on the central shaft Y which extends through one of the trunnions of the form carrier and is provided with a bevel gear *z*. Bevel gear *z* on the outside of the form carrier meshes with bevel gear 2 on the inclined shaft 3 which in turn is provided with a bevel gear 4 meshing with the bevel gear 5 on the stud F. Any suitable means may be provided for driving the bevel gear 5 and motion is transmitted by the train of mechanism described, to the gears T, whereby the arms *a* and *b* are revolved.

Great difficulty has heretofore been experienced in maintaining the inking rollers tight against the face of the type, as the rollers pass over the type, and this is especially true in high speed presses where the inking rollers are revolved at high speed. If a spring alone is depended upon to maintain tension on the inking rollers, the spring must be very strong to withstand the centrifugal force tending to extend the spring. Said spring must also be of considerable length, which makes it too bulky to be practical.

According to this invention positive means are provided for controlling the inward and outward movements of the inking rollers, so that they are caused to bear exactly and evenly both on the inking plate and on the type in their chase.

I do not herein claim anything disclosed and claimed in my co-pending application Serial No. 469,919, filed December 30, 1908, for improvements in continuous printing presses.

I claim and desire to obtain by Letters Patent the following:

1. In a printing press, the combination with a form carrier having an inking plate, of inking rollers adapted to be revolved about the form carrier, carriages for the rollers, revoluble arms extending adjacent the carriages, bell crank levers pivoted to said arms and to the carriages and cams coöperating with the inner ends of said levers to draw the inking rollers inwardly against the type as said rollers pass over the chase.

2. In a printing press, the combination with a form carrier having an inking plate, of inking rollers adapted to be revolved about the form carrier, carriages for the rollers, revoluble arms extending adjacent

the carriages, bell crank levers pivoted to said arms and to the carriages and means coöperating with the inner ends of said levers to draw the inking rollers inwardly against the type as said rollers pass over the chase.

3. In a printing press, the combination with a form carrier having an inking plate, of inking rollers adapted to be revolved about the form carrier, carriages for the rollers, revoluble arms extending adjacent the carriages, levers pivoted to said arms, said levers being adjustably pivoted to said carriages, and cams coöperating with the inner ends of said levers for drawing the rollers against the type as the rollers pass over the chase.

4. In a printing press, the combination with a form carrier having an inking plate, of inking rollers adapted to be revolved about the form carrier, carriages for the rollers, revoluble arms extending adjacent the carriages, levers pivoted to said arms, said levers being adjustably pivoted to said carriages, and means coöperating with the inner ends of said levers for drawing the rollers against the type as the rollers pass over the chase.

5. In a printing press, the combination with a form carrier having an inking plate, of inking rollers adapted to be revolved about the form carrier, carriages for the rollers, revoluble arms extending adjacent the carriages, levers pivoted to said arms, said levers being adjustably pivoted to said carriages, means coöperating with the inner ends of said levers for drawing the rollers against the type as the rollers pass over the chase, and stops on said arms for limiting the outward movement of the levers and rollers.

6. In a printing press, the combination with a form carrier having an inking plate, of inking rollers adapted to be revolved about the form carrier, carriages for the rollers, revoluble arms extending adjacent the carriages, levers pivoted to said arms, said levers being adjustably pivoted to said carriages, cams coöperating with the inner ends of said levers for drawing the rollers against the type as the rollers pass over the chase, and stops on the arms for limiting the outward movement of the levers and rollers.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses; April 2, 1909.

BERTIL VON PHILP.

Witnesses:

E. P. LA GAY,
E. VAN ZANDT.