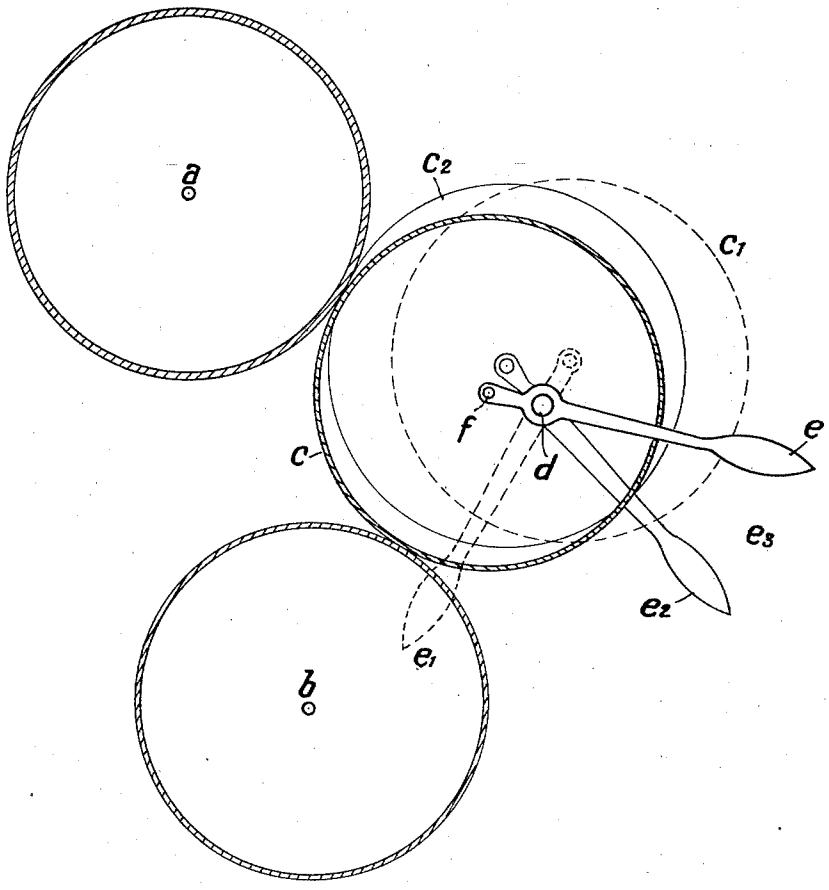
June 25, 1929. F. FISCHER 1,718,900

OFFSET PRINTING MACHINE

Filed March 21, 1928 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

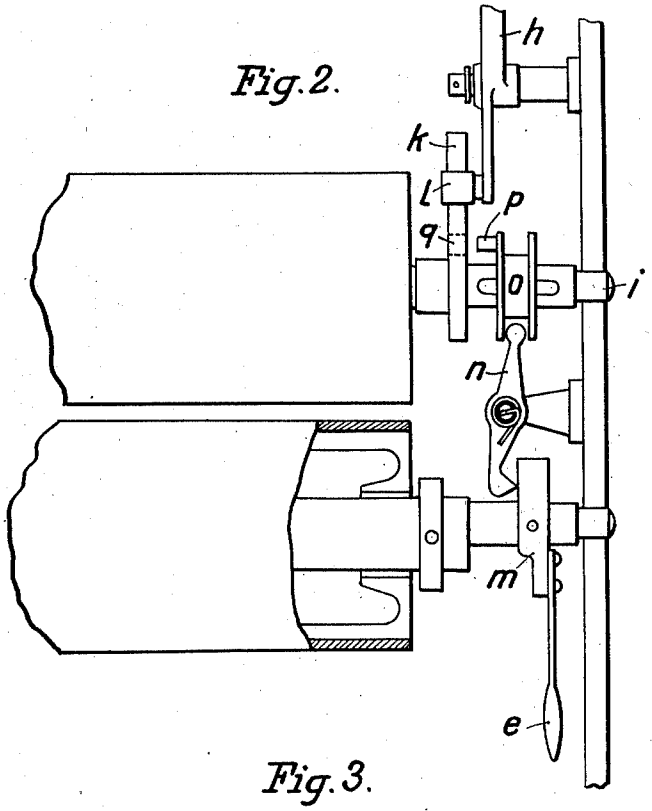
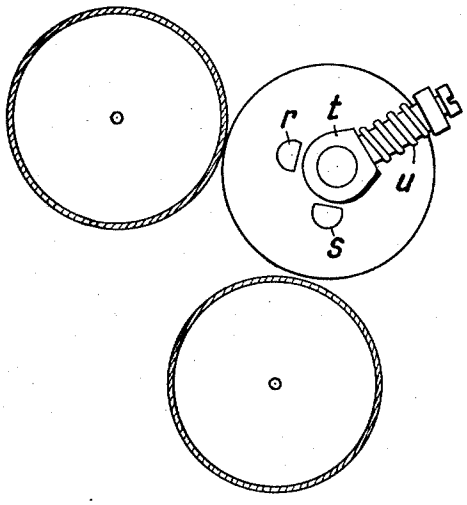


Fig. 3.



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UNITED STATES PATENT OFFICE.

FERDINAND FISCHER, OF BERLIN, GERMANY.

OFFSET PRINTING MACHINE.

Application filed March 21, 1928, Serial No. 263,342, and in Germany April 6, 1927.

This invention relates to offset printing machines.

In such printing machines it is known to make the offset roll movable in such a manner that it is either in contact with both the impression roll and the forme cylinder or is out of contact with both of said rolls and cylinder.

Such machines suffer from the disadvantage that the first prints are not clear due to the offset roll being insufficiently inked, this roll only receiving sufficient ink after a few revolutions of the forme cylinder. These primary misprints are more particularly troublesome if an office offset printing machine adapted to work sheet by sheet from a paper pile is employed.

In order to avoid this disadvantage of faint printing according to the present invention means are provided whereby the offset roll can occupy a position intermediate of the two extreme positions above referred to in which intermediate position the offset roll is in contact with the forme cylinder only so that the said roll prior to the insertion and printing of the first sheet of paper can be sufficiently inked.

According to the present invention the movement of the offset roll into the three positions referred to is effected by means of a single lever and at the same time the invention satisfies the requirement as regards easy attendance of an offset printing machine working from pile and intended for use by unskilled persons.

An embodiment of the invention is shown diagrammatically and by way of example on the accompanying drawing in which:

Fig. 1 shows the arrangement in side elevation.

Fig. 2 shows the connection of the offset roll with the controlling member of the pile gripper and

Fig. 3 is a side elevation of an improved bearing for the movable offset roll.

According to Fig. 1 the forme cylinder a and the impression roll b are fixedly mounted in the machine frame. The movable offset roll c is as usual adapted to move from its working position shown in full lines into the position shown in dotted lines c_1, for example by means of a hand lever e pivoted on the machine frame at d, the offset roll c being mounted at f on an extension of said lever.

By swinging the hand lever e into the position e_1 the offset roll c is moved to the position c_1 and thus brought in the known manner out of contact with the forme cylinder a and the impression roll b.

The relatively opposed geometrical arrangement of the four axes of rotation a, b, d, f is effected in a novel manner according to the present invention so that the offset roll during its movement from the position c_1 into the position c can be held in an intermediate position c_2 in which, as will be seen from the drawing, it is only in contact with the forme cylinder a.

In printing technique this position is utilized for obtaining a sufficient transfer of the printing impression from the forme cylinder a onto the offset roll c whereupon the inked offset roller is swung into the end position c, i. e. into the printing position. The unskilled operator is thus in a position to clearly print the sheets passing in the known manner between the impression roll b and the offset roll c from the very first sheet.

To avoid waste of paper owing to idle running during the thorough inking process described of the offset roll, according to the present invention, the paper feed is so coupled with the movement of the offset roll referred to above that it becomes effective only at the last moment, that is, when the hand lever e occupies a predetermined position at e_3 between the positions e and e_2.

When in the position e_3, as shown in Fig. 2 the mechanism, in itself known, of a pile gripper becomes effective.

According to Fig. 2 the lever h controls the known pile gripper, not shown in the drawing. The movement of the lever h and of the pile gripper commences as soon as the member k mounted loosely on the shaft i is coupled with this shaft. The member k carried along by the shaft i then actuates a roller l mounted on the lever h.

The coupling of the member k with the shaft i is effected by the movement of the hand lever e by means of a suitably shaped cam m rigidly connected therewith which by means of a lever n moves a sleeve o on which is a projecting pin p which can fall into an aperture q on the member k.

A novel feature for offset printing machines more particularly for office use is the effecting of this coupling movement when the hand lever e is in the position e^3 Fig. 1.

An improved bearing shown in Fig. 3 is provided also for the offset roll. In this fig-

ure *r* and *s* represent rigid stops *t* a bearing block controlled by a spring *u* and limited in its movements by such stops, the bore of the block serving as a support for the pivot *d*. As will be seen in the event of the unintended entry of a thick mass of paper between the impression roll *b* and the offset roll *c*, or the entry of a foreign body between the forme cylinder *a* and the offset roll *c*, the bearing will yield and thus prevent breakage.

It will be apparent that the roll *c* could be held stationary and the cylinder *a* and roll *b* be made movable, but, this, however, is not so practicable.

What I claim is:—

1. An offset printing machine comprising a forme cylinder, an offset roll, an impression roll, a lever pivoted on the machine, an extension on the lever on which the offset roll is mounted said lever being capable of moving the offset roll into and out of contact with the said cylinder and impression roll and also into contact with said cylinder and out of contact with said impression roll.

2. In an offset printing machine in which the offset roll is movable so that in one position it is in contact with the forme cylinder and with the impression roll and in another position it is out of contact with said cylinder and roll, means for moving the offset roll into a position in which it is in contact with the forme cylinder and out of contact with the impression roll and a spring mounting whereby the offset roll can yield and prevent breakages.

In testimony whereof I affix my signature.

FERDINAND FISCHER.