

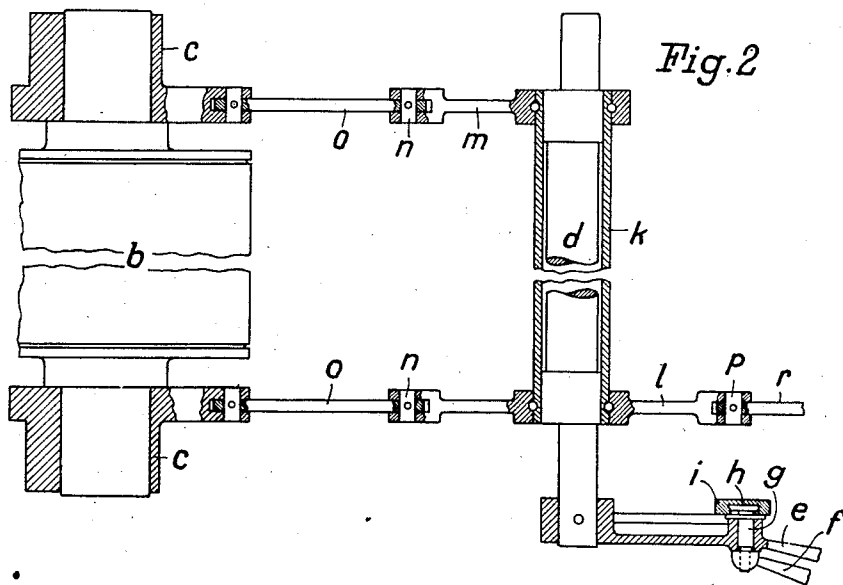
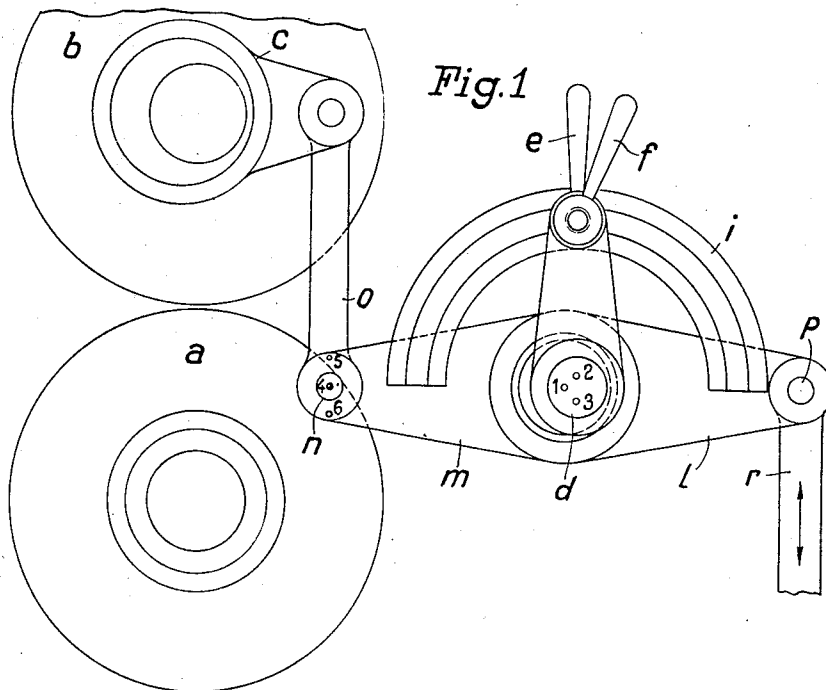
July 28, 1931.

W. RÖSSGER

1,816,796

ROTARY OFFSET PRINTING MACHINE

Filed Oct. 13, 1930



Inventor:
W. Rössger

By: *Marb & Co.*
Atys.

UNITED STATES PATENT OFFICE

WALTER RÖSSGER, OF HEIDENAU-SUD, GERMANY, ASSIGNOR TO THE FIRM ROCK-STROH-WERKE AKTIENGESellschaft, OF HEIDENAU, GERMANY

ROTARY OFFSET PRINTING MACHINE

Application filed October 13, 1930, Serial No. 488,447, and in Germany January 16, 1930.

For adjusting the pressure of the cylinders in rotary offset printing machines having a rubber covered offset cylinder, the necessary means are employed for applying and taking off the pressure. Such means comprise eccentric bearing bushes in which the shafts or gudgeons of the cylinders are journaled, connecting rods engaging the bushes and connected to levers which are subjected to regular oscillating movements by means of cams or other known means. By this means the eccentric bushes are turned and the pressure is applied and removed. The connecting rods which move the eccentric bushes must of course be provided on both sides of the machine and in order to enable the pressure to be regulated it has been proposed to employ connecting rods arranged so as to be adjustable in length. By this means a variation in the length of the connecting rods results in a greater or less pressure being applied between the cylinders. When the connecting rods are adjusted there is the danger however that the length of the rods on both sides of the machine will not be adjusted so as to be exactly the same and that by this means the pressure between the two cylinders will be greater on the one side than on the other. Moreover, canting of the gudgeons will take place, and further it is only with great difficulty, if it is not altogether impossible, that the pressure can be adjusted during the operation of the machine.

The invention removes these drawbacks in that the axis, about which the levers oscillate which serve for transmitting the pressure adjustment, is subjected to a displacement such that the intensity of pressure can be adjusted to any desired degree without any lack of uniformity in the intensity of pressure between the cylinders being able to set in and without the application and the relief of the pressure being thereby affected in the least degree.

The invention is illustrated by way of example in the accompanying drawings, in which

Figure 1 shows the improved apparatus in elevation, and

Figure 2 a plan partly in section.

Referring to the drawings, the rubber cylinder *a* is non-adjustably journaled in concentric bearings in the side parts of the machine frame, while the impression cylinder *b* can be displaced in position by means of the eccentric bearings *c* by rotating the latter.

A shaft *d* having eccentric gudgeons which are journaled in the side parts of the printing machine can be turned by means of a handle *e* and fixed in position by means of the locking member *f* on the screw-bolt *g*, the wedge *h*, and the guide-piece *i*. On the inside part of the shaft *d* is rotatably journaled a hollow shaft *k* which is rigidly connected to a double-armed lever *l* and a single-armed lever *m*. The eyes *n* of the two levers *l* and *m* are movably connected by means of the connecting rods *o* to the lever arms of the eccentric cylinder bearings *c*. With the eye *p* of the double lever *l* engages a connecting rod *r*, to which, by known means, a to-and-fro alternating movement is imparted. This to-and-fro alternating movement is transmitted by means of the machine parts above described, the eccentric cylinder bearings, which, owing to their rotation, move the impression cylinder *b* away from the rubber cylinder *a* or press it against the latter.

If now the shaft *d* is turned out of its middle position (Fig. 1) by means of the lever *e*, then the centre of the hollow shaft *k* will be displaced from the point 1 to the point 2, or the point 3.

As the point *p* of the double-armed lever *l* is held fast by the connecting rod *r*, then the rotation of the shaft *d* will result in a corresponding rotation of the eyes *n* of the levers *m* and *l* from the point 4 to the point 5 or the point 6, and thereby a rotation of the eccentric bearings *c* of the impression cylinder, whereby the pressure is adjusted.

What I claim is:—

1. Apparatus for adjusting the impression pressure in rotary offset printing machines, comprising the combination with a machine frame, an offset cylinder, an impression cylinder, eccentric bearings for one of said cylinders rotatable in said machine frame and

bearings for the other cylinder in the said frame, of oscillatable levers operatively connected to said eccentric bearings and displaceable supporting means for said oscillatable levers mounted in the frame, said levers being
5 rotatable on said supporting means, as and for the purposes set forth.

2. Apparatus for adjusting the impression pressure in rotary offset printing machines, comprising the combination with a machine
10 frame, an offset cylinder, an impression cylinder, eccentric bearings for one of said cylinders rotatable in said machine frame and bearings for the other cylinder in the said
15 frame, of a shaft having eccentric gudgeons journaled in the frame of the machine, levers oscillatably mounted on said shaft and operatively connected to said eccentric bearings and means connected to said levers for rock-
20 ing them, as and for the purposes set forth.

3. Apparatus for adjusting the impression pressure in rotary offset printing machines, comprising the combination with a machine frame, an offset cylinder, an impression cylinder, eccentric bearings for one of said cylinders rotatable in said machine frame and bearings for the other cylinder in the said
25 frame, of a shaft having eccentric gudgeons journaled in the frame of the machine, a hollow shaft rotatable on said shaft, levers fixed to said hollow shaft and operatively connected to said eccentric bearings, means connected to said shaft having eccentric gudgeons for rotating the shaft and for securing
30 the shaft in adjusted position and means connected to said hollow shaft for rocking the hollow shaft, as and for the purposes set forth.

In testimony whereof I have signed my
40 name to this specification.

WALTER RÖSSGER.

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