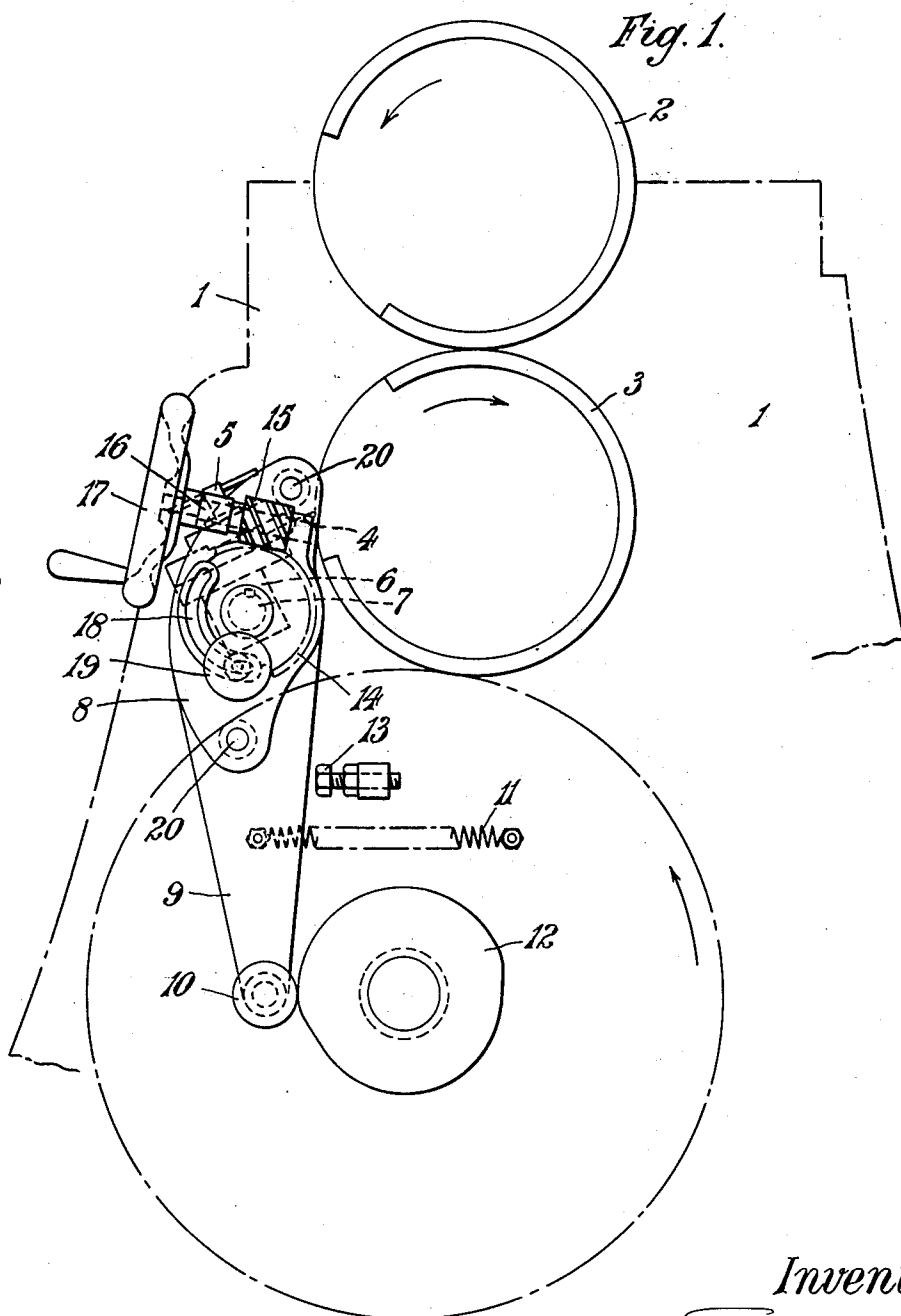


May 30, 1933.

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OF ROTARY INTAGLIO PRINTING MACHINES
Filed May 12, 1931

1,911,247

2 Sheets-Sheet 1



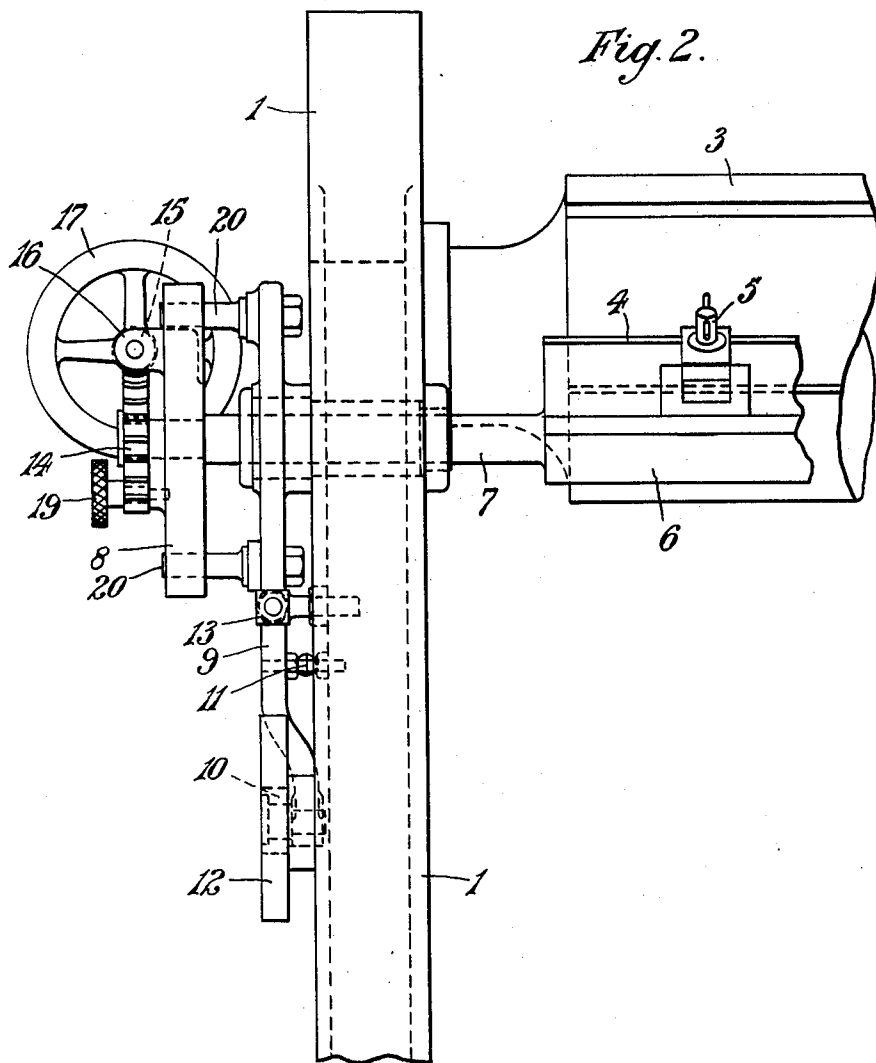
Inventor.
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UNITED STATES PATENT OFFICE

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MECHANISM FOR INKING THE PRINTING SURFACES OF ROTARY INTAGLIO PRINTING
MACHINES

Application filed May 12, 1931, Serial No. 536,712, and in Great Britain May 16, 1930.

This invention relates to mechanism for by an adjustable stop, such as the set-screw 13 carried on the respective side frame 1 of the machine, and located in the path of movement of the arm.

is removed from said surfaces.

This removal of surplus ink is effected, as ordinarily in said machines, by a doctor blade which periodically is moved into and out of contact with the printing surface by a cam or cams rotating in timed relationship to the plate cylinder.

The object of the invention is to provide new or improved means by which the doctor blade can be accurately adjusted relatively to the plate cylinder and securely locked in any such adjusted relationship.

The invention is hereinafter described with reference to a preferred constructional form thereof illustrated in the accompanying drawings. In the said drawings:—

Figure 1 is a side elevation of sufficient of a rotary intaglio printing machine to show the application of the invention thereto, and

Figure 2 is a front elevation of the appropriate parts at the same side of the machine as that shown in Figure 1.

Referring to the said drawings:—1 indicates the side frame of the machine, which latter comprises an impression cylinder 2 and a plate cylinder 3. The doctor blade 4 which is employed for removal of the surplus ink is adjustably secured, as by clamps 5, to a bar 6 fast on a shaft 7 (hereinafter termed the "doctor blade shaft") extending transversely of the machine. One end of this shaft 7 is free to turn in a yoke or bracket 8 connected to a rocking arm 9, and at its opposite end (not shown in the drawings) the shaft 7 is journaled in a bearing in the respective side frame of the machine. The axis of the doctor blade shaft 7 is coincident with that about which the rocking arm 9 oscillates.

The doctor blade rocking arm 9 carries at its lower end a roller 10, which under the influence of a spring 11 acting on the arm 9, engages with a cam 12 rotated in timed relationship to the plate cylinder 3, the extent of swing of the arm 9 being determined

On the end of the shaft 7, which extends beyond the yoke or bracket 8, there is secured a worm wheel or segment 14, hereinafter termed a worm member, which is engaged by a tangent screw 15, whose shaft is journaled in a bearing 16 fast on the yoke or bracket 8, the said shaft being provided with a hand-wheel 17 by which it can be rotated for turning the doctor blade shaft 7.

The last-named adjustment, conjointly with that provided for by the doctor blade clamps 5, enables the angle at which the plate bears on the printing surface to be varied according to particular requirements.

The segment 14 has formed in it an arcual slot 18 through which passes a clamping screw 19 threaded into the adjacent yoke or bracket 8, by which the doctor blade shaft can be secured in any of its adjusted positions. If desired, a scale and pointer may be provided on the segment 14 and yoke 8 for indicating the different angular positions to which the doctor blade is to be adjusted.

In order to ensure efficient scraping of the printing surface, it is preferable to provide for independent longitudinal vibration or reciprocation of the doctor blade, and such motion may be imparted to the doctor blade shaft 7 by any well-known means acting, for example, on the end of the shaft opposite to that which is shown in the drawings.

In applying the present invention to such a longitudinally vibrated shaft, the yoke or bracket 8 may be connected to the rocking arm 9 by means of a pair of pins or guides 20 fast on the rocking arm 9, through which pins the rocking movement of the shaft 7 is controlled, and on which the said yoke or bracket 8 is adapted to slide during the vibrating movement of the said shaft.

Having described my invention I declare that what I claim and desired to secure by Letters Patent is:—

1. In inking mechanism for rotary in-

taglio printing machines, the combination with a doctor blade movable into and out of contact with the printing surface, of a rocking arm, means carried by the rocking arm adapted to adjust the angle at which the blade bears on the printing surface, a cam adapted to swing the arm and doctor blade as a single entity, and a stop in the path of the arm for varying the throw of the latter.

2. In inking mechanism for rotary intaglio printing machines, the combination with a doctor blade movable into and out of contact with the printing surface, of a rocking arm, means carried by the rocking arm adapted to adjust the angle at which the blade bears on the printing surface, locking means adapted to secure the doctor blade in adjusted position, a cam adapted to swing the arm and doctor blade as a single entity, and a stop in the path of the arm for varying the throw of the latter.

3. In inking mechanism for rotary intaglio printing machines, the combination with a doctor blade, movable into and out of contact with the printing surface, and carried by an angularly adjustable shaft, of an arm rocking about the axis of the shaft, a cam adapted to swing the arm and doctor blade as a single entity, a yoke supporting the shaft, and guides for the yoke on the arm enabling said yoke to move on the arm parallelly with the axis of the shaft.

4. In inking mechanism for rotary intaglio printing machines, the combination with a doctor blade, movable into and out of contact with the printing surface, and carried by an angularly adjustable shaft, of an arm rocking about the axis of the shaft, a cam adapted to swing the arm and doctor blade as a single entity, a yoke supporting the shaft, guides for the yoke on the arm enabling said yoke to move on the arm parallelly with the axis of the shaft, means on the yoke operative to turn the shaft relatively to the yoke and arm, clamping means on the yoke to secure the shaft in position thereon, and an adjustable stop in the path of the arm for varying the throw of the latter.

5. In inking mechanism for rotary intaglio printing machines, the combination with a doctor blade movable into and out of contact with the printing surface, and carried by an angularly adjustable shaft, of an arm angularly adjustable upon the shaft, a cam adapted to swing the arm and doctor blade as a single entity, a yoke supporting the shaft, and mutually engaging devices between the arm and yoke, transmitting angular motion from one to the other and enabling the yoke to move on the arm parallelly with the axis of the shaft.

6. In inking mechanism for rotary intaglio printing machines, the combination

with a doctor blade movable into and out of contact with the printing surface, and carried by an angularly adjustable shaft, of an arm angularly adjustable upon the shaft, a cam adapted to swing the arm and doctor blade as a single entity, a yoke supporting the shaft, mutually engaging devices between the arm and yoke, transmitting angular motion from one to the other and enabling the yoke to move on the arm parallelly with the axis of the shaft, and means operative to turn the shaft relatively to the yoke and arm, and clamping means to secure the shaft in position to which it is thus moved.

7. In inking mechanism for rotary intaglio printing machines, the combination with a doctor blade movable into and out of contact with the printing surface, a shaft about the stationary axis of which the blade is angularly adjustable, and an arm rockable about the same axis, of a worm member fast on the shaft, of a tangent screw engaging said worm member in journalled relation to, and rockable with, the arm.

8. In inking mechanism for rotary intaglio printing machines, the combination with a doctor blade movable into and out of contact with the printing surface, a shaft about the stationary axis of which the blade is angularly adjustable, and an arm rockable about the same axis, of a worm member fast on the shaft, a tangent screw engaging said worm member in journalled relation to, and rockable with, the arm, a yoke supporting the shaft, guides for the yoke on the arm enabling said yoke to move independently of the arm parallelly with the axis of the shaft, of a clamping screw threaded into the yoke and traversing an arcual slot in the worm member, whereby the doctor blade can be secured in different angular positions relatively to the arm.

In testimony whereof I have affixed my signature hereto.

FRED SPENCE.