

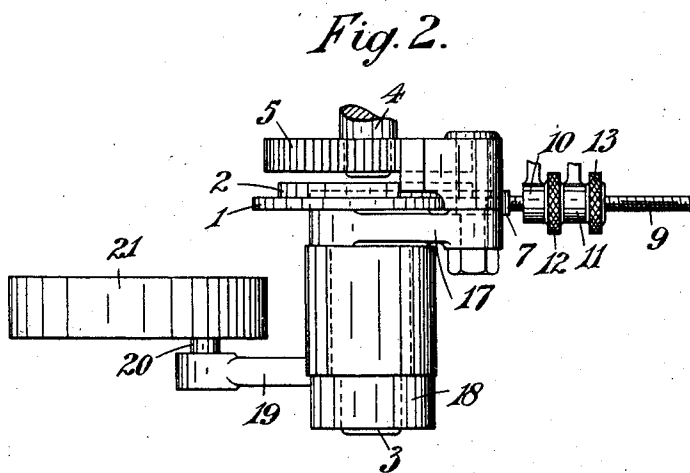
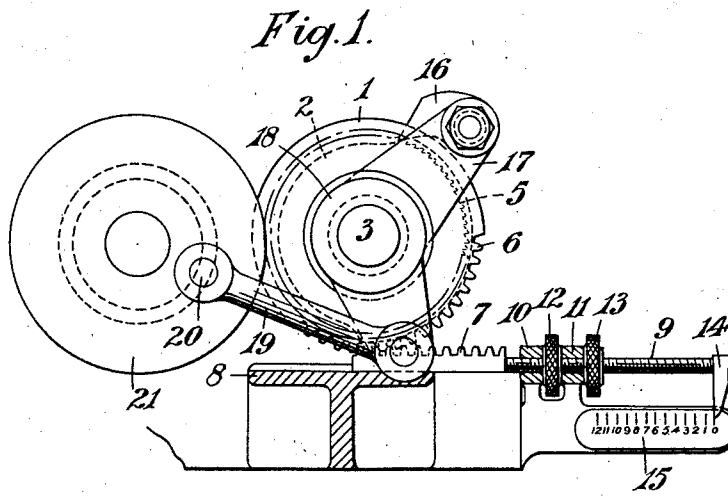
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A. G. FRENCH

MEANS FOR CONTROLLING THE OPERATION OF PAWL AND RATCHET MECHANISM

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UNITED STATES PATENT OFFICE.

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MEANS FOR CONTROLLING THE OPERATION OF PAWL-AND-RATCHET MECHANISM.

Application filed December 30, 1921. Serial No. 525,928.

To all whom it may concern:

Be it known that I, ARTHUR GORDON FRENCH, a subject of the King of the United Kingdom of Great Britain and Ireland, and resident at Linotype and Machinery Works, Altrincham, in the county of Chester, England, have invented new and useful Improvements in Means for Controlling the Operation of Pawl-and-Ratchet Mechanism, of which the following is a specification.

This invention relates to improvements in means for controlling the operation of pawl and ratchet mechanism, either rotary or rectilinear, of the kind in which the effective stroke of the pawl is determined by an adjustable shroud interposed between it and the teeth of the ratchet.

The invention is particularly applicable to rotary ratchet mechanism such as that employed for intermittently rotating rollers of the water motion in lithographic printing presses, and it is hereinafter, as a convenient example, described in that connection. The object of the invention is so to construct the mechanism that it shall at all times clearly indicate the extent to which the mechanism is being operated, and to provide means whereby such extent may be conveniently varied, irrespective of whether the mechanism is in operation or at rest.

The above selected example of the invention is illustrated in the accompanying drawings, in which Figure 1 is a front elevation partly in section and Figure 2 a plan.

As shown in these drawings, the plate 1 carrying the shroud 2 is, as ordinarily, adjustable about a short shaft 3 which is coaxial with the shaft 4 carrying the ratchet wheel 5, and according to the present invention, has on its periphery a toothed segment 6 engaging with a rack 7 rectilinearly adjustable in suitable stationary guides 8.

A screwed rod 9 attached to one end of, or integral with, the rack 7, loosely passes through stationary lugs 10, 11, between which is housed a nut 12 threaded on the rod 9, while a second nut 13, located at the outside of the lug 11, is provided for use as a lock nut.

The extreme end of the screwed rod 9 has attached to it a pointer 14 adapted to register with a fixed scale 15 divided into numbered graduations indicating in terms of ratchet teeth the extent to which the mechanism is being operated. This operation is,

as ordinarily, effected through the engagement of the pawl 16 with the ratchet wheel 5, said pawl being connected in any convenient manner, as for example, by a lever arm 17, to which it is pivotally connected, fast on one end of the shaft 3 to whose other end is rigidly secured a second lever arm 18 connected through a link 19 with a crank pin 20 carried by the crank disc 21.

When the shroud is in its zero position as represented in the drawings, in which position the engagement of the pawl 16 with the ratchet wheel 5 is entirely prevented, the pointer correspondingly registers with the zero mark on the scale. Assuming the last mentioned position to be the one from which adjustment is to be made and that it has been decided that the ratchet shall be rotated to the extent of say three teeth, then the lock nut 13 is released and the adjusting nut 12 is turned until the pointer 14 registers with the number 3 division of the scale, after which the lock nut 13 is again tightened against the lug 11. The shroud 2 will then be in such a position that three teeth of the ratchet wheel 5 will be exposed to the operation of the pawl 16, this last result being attained by the engagement of the sliding rack 7 with the toothed segment 6 on the shroud plate 1.

The adjusting and indicating mechanism is located in a conveniently accessible position clear of the working parts of the machine, so that the necessary adjustments may be made at all times whether the machine is at rest or at work, and the pointer and scale are at all times visible so that the operator can at a glance ascertain the condition of working.

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

1. Means for controlling the operation of pawl and ratchet mechanism comprising in combination a shroud adjustable for varying the number of ratchet teeth engaged by the pawl, a toothed segment fast to the shroud, a rack engaging the segment, a pointer fast to the rack, a fixed scale with which the pointer is adapted to register, and means operative to adjust the rack and pointer simultaneously.

2. Means for controlling the operation of pawl and ratchet mechanism comprising in combination a shroud adjustable for varying

the number of ratchet teeth engaged by the pawl, a toothed segment fast to the shroud, a rack engaging the segment, a screwed rod fast to the rack, a nut threaded on the
5 screwed rod for moving the rack longitudinally, and means for preventing axial movement of the nut.

3. Means for controlling the operation of pawl and ratchet mechanism comprising in
10 combination a shroud adjustable for varying the number of ratchet teeth engaged by

the pawl, a toothed segment fast to the shroud, a rack engaging the segment, a screwed rod fast to the rack, a nut threaded on the screwed rod for moving the rack longitudinally, means for preventing axial
15 movement of the nut, a pointer fast to the screwed rod, and a fixed scale with which the pointer is adapted to register.

In testimony whereof I have affixed my
signature hereto. 20

ARTHUR GORDON FRENCH.