

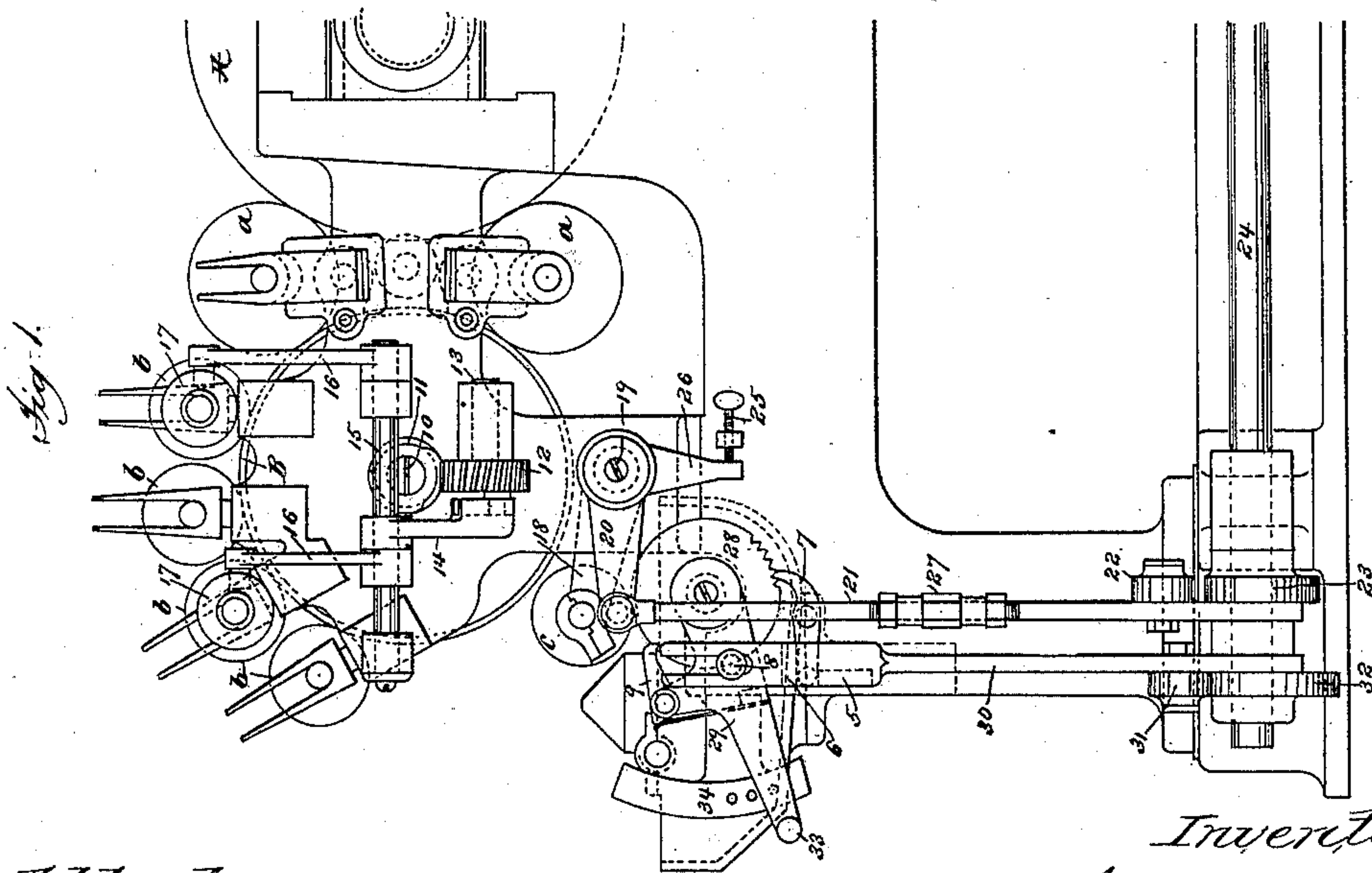
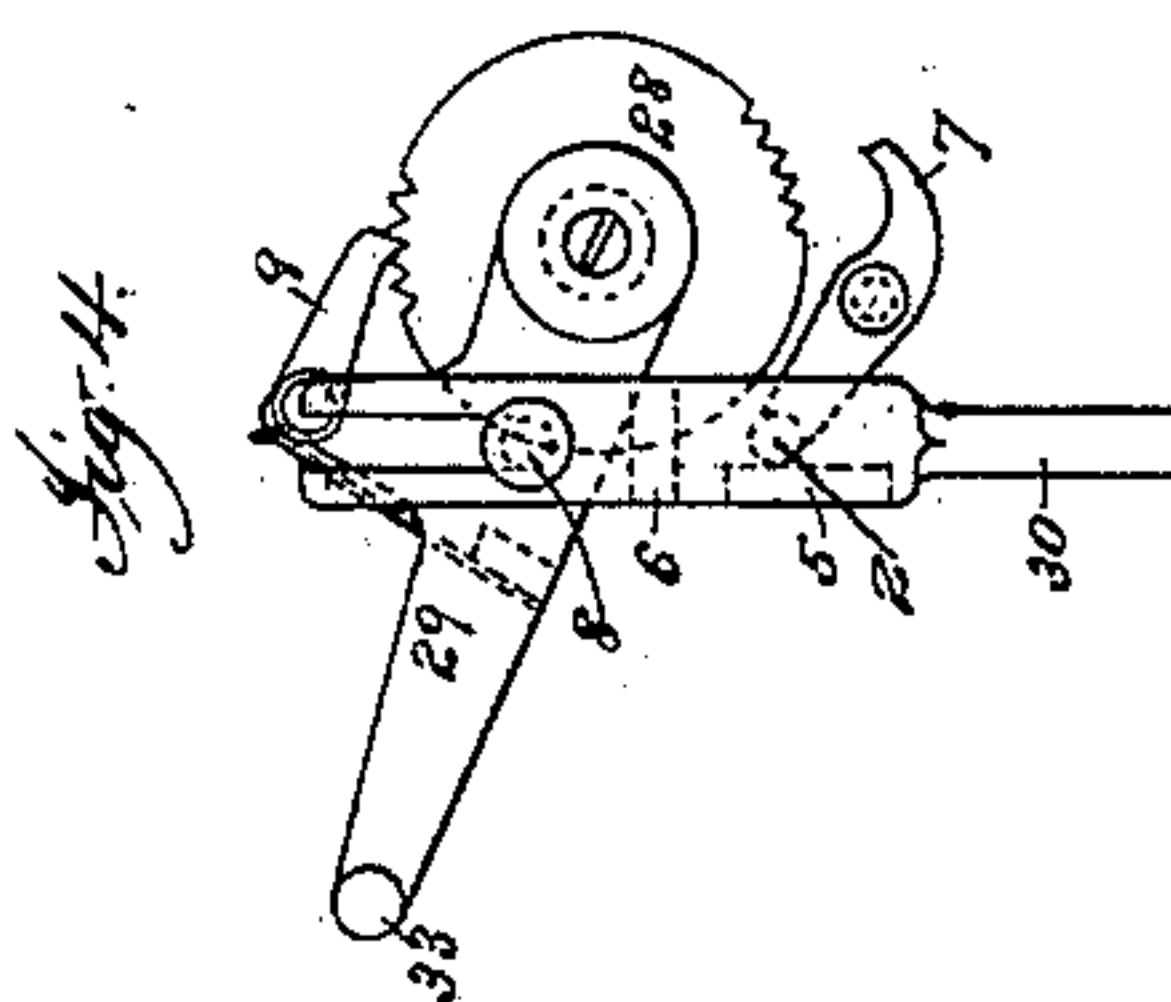
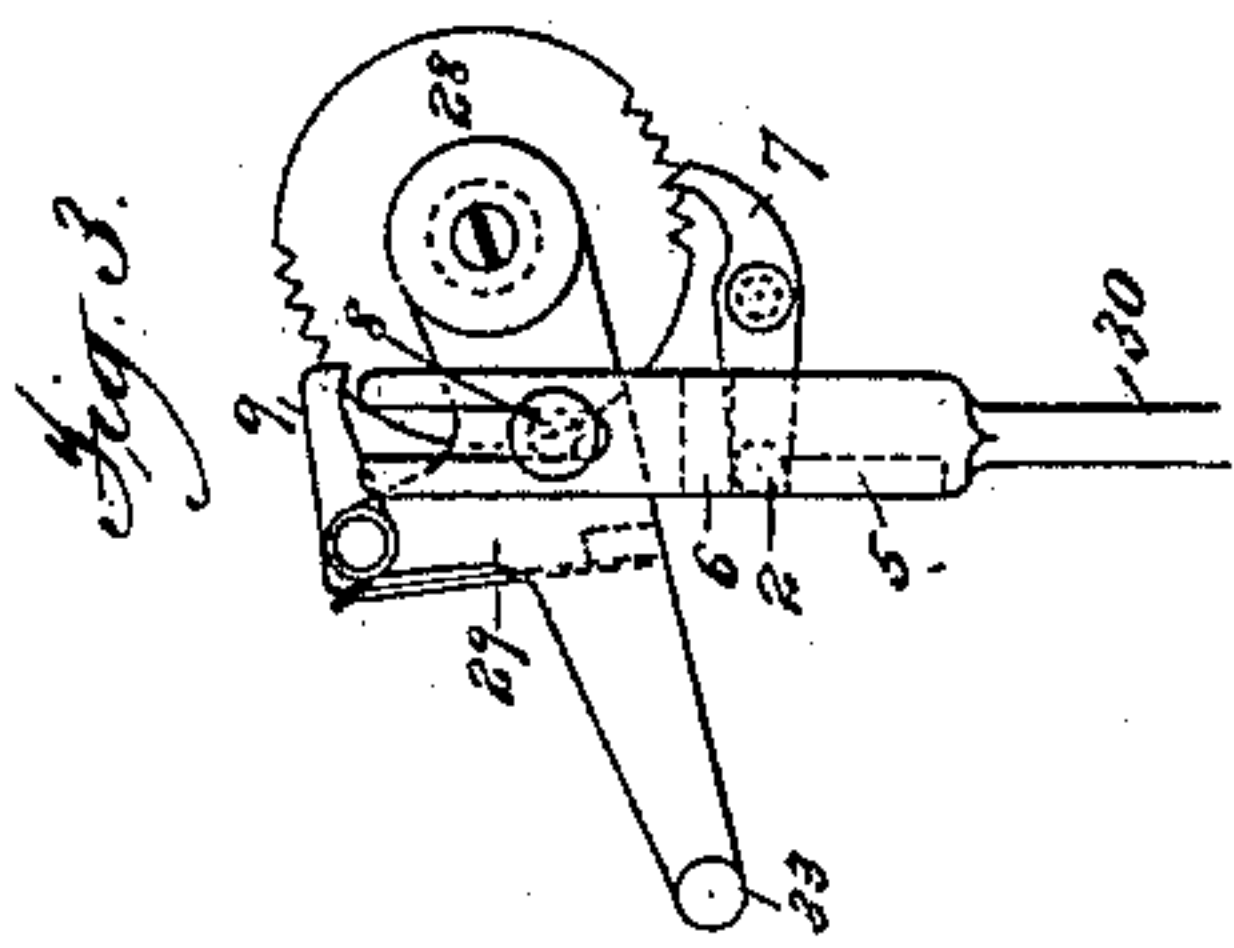
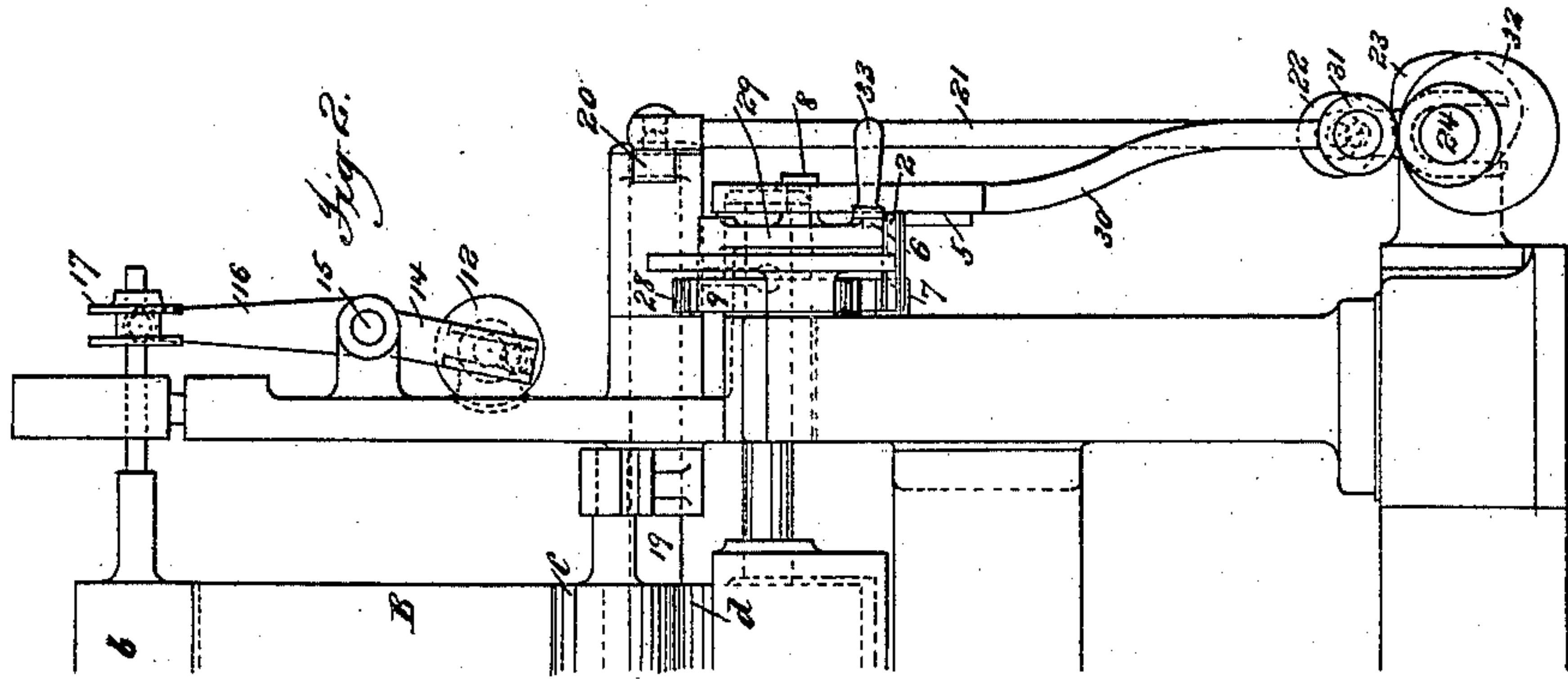
(No Model.)

S. D. TUCKER.

INKING MECHANISM FOR PRINTING MACHINES.

No. 408,392.

Patented Aug. 6, 1889.



Attest:  
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# UNITED STATES PATENT OFFICE.

STEPHEN D. TUCKER, OF NEW YORK, N. Y.

## INKING MECHANISM FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 408,392, dated August 6, 1889.

Application filed June 7, 1888. Serial No. 276,379. (No model.)

*To all whom it may concern:*

Be it known that I, STEPHEN D. TUCKER, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Inking Mechanism for Printing-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to improvements in inking mechanism which is designed for use in connection with printing-machines.

In the accompanying drawings, Figure 1 is a side elevation of so much of an ordinary web-printing machine as is necessary to illustrate the application of the improvements constituting the present invention. Fig. 2 is a view of the same parts looking from the left of Fig. 1. Figs. 3 and 4 illustrate a detail, which will be hereinafter referred to, the parts being shown in different positions in the two figures.

Referring to said figures, it is to be understood that A represents one of the form-cylinders; *a*, the form-rolls; B, one of the ink-distributing cylinders, and *b* the ink-distributing rolls, these parts being arranged in substantially the usual manner. The ink is supplied to the distributing-cylinder B by means of a vibrating transfer-roll *c*, by which the ink is taken from the usual fountain-roll *d* and transferred to the cylinder. The shaft 10 of the distributing-cylinder is provided with a worm 11, which engages with a worm-gear 12, mounted upon a short crank-shaft 13, supported upon the side of the frame-work. The crank-pin for this shaft enters a groove formed in the end of an arm 14, projecting from a rock-shaft 15, also journaled upon the side of the frame-work and having upwardly-extending arms 16, the ends of which are provided with studs which enter the grooved peripheries of spools or pulleys 17, mounted upon the ends of the shafts of two of the distributing-rolls. By this means a slow rotation is given to the shaft 13, which operates at each revolution to impart a reciprocating movement to the distributing-rolls, which, resting upon the surface of the distributing-cylinder, operate to effect the proper and even distribution of the ink.

In inking mechanisms of this class it is necessary that the fountain-roll should be rotated with a step-by-step movement, so as to present inked portions of its surface to the transfer-roll at each vibration of the latter; also, that the transfer-roll should be vibrated from the fountain-roll to the distributing-cylinder at proper intervals. For this purpose the transfer-roll *c* is supported in the ends of arms 18, projecting from a shaft 19, which is provided with an arm 20, to the end of which is connected a rod 21, having a bowl or stud 22, which is acted upon by a cam 23, mounted upon a horizontal shaft 24, which extends along the base of the machine and is rotated through any suitable connection. By this means the roll *c* is vibrated between the fountain-roll and the distributing-cylinder at each revolution of the shaft 24, thereby taking the ink from the former and supplying it to the latter.

The pressure of the distributing-roll against the fountain-roll is regulated by means of a regulating-screw 25, which acts against an arm 26, extending from the shaft 19, so as to arrest the roll in its downward movement and adjust its pressure against the fountain-roll. The movement of the transfer-roll toward the distributing-cylinder is regulated by means of a turn-buckle 27, with which the rod 21 is provided.

For the purpose of imparting the necessary rotary movement to the fountain-roll, the shaft of the roll is provided with a ratchet 28, having V-shaped teeth, which are engaged by a spring-pressed holding-pawl 9, which is carried upon a pawl-lever 29, having a stud 8, which enters the forked end of a rod 30, having a bowl or stud 31, which is acted upon by a cam 32, mounted upon the shaft 24. By this means a step-by-step rotary movement is imparted to the fountain-roll. The stud 8 is permitted to play loosely in the forked end of the rod 30, and the pawl-lever 29 is provided with a handle 33, by which the lever can be operated by hand to rotate the fountain-roll when it is desired to give an extra supply of ink for the purpose of inking up the machine.

The amount of ink supplied to the distributing-cylinder in the regular operation of the



machine is determined by the extent of movement given to the fountain-roll at each step, and this can be regulated by adjusting the pawl-lever so that the pawl will be retracted  
 5 a greater or less number of teeth at each vibration. For this purpose there is located adjacent to the pawl-lever a segment-bar 34, having a number of openings arranged at different heights, and into any one of which a  
 10 pin may be inserted so as to limit the extent of the retrograde movement of the pawl. The vibrating transfer-roll *c* is not driven positively, but when in contact with the distributing-cylinder it receives a rotary motion  
 15 simply by the frictional contact, and as this cylinder is revolved at a high rate of speed the transfer-roll acquires considerable momentum, so that it continues to revolve quite rapidly after it has left the distributing-cyl-  
 20 nder and until it comes into contact with the fountain-roll. The momentum of the transfer-roll is therefore liable, unless means is provided for preventing it, to impart more or less movement to the fountain-roll and thus  
 25 cause overinking. To prevent this there is provided a holding-pawl 7, which is pivoted upon the frame-work and arranged to engage with the ratchet 28, so as to hold the fountain-roll and prevent it from being moved by the  
 30 momentum of the transfer-roll. This pawl 7 is positively actuated, and for this purpose its tail-piece is provided with a stud 2, which is engaged by two ribs or projections 5 6, formed upon the inner side of the bar 30, in such

manner that as the bar is moved upward by 35 the cam 32 the stud will be engaged by the projection 5, so as to disengage the pawl from the ratchet 28 in time to permit the ratchet to be moved by the pawl 9, while upon the re-  
 40 turn movement of the bar the stud will be engaged by the projection 6, so as to be re-engaged with the ratchet, and will enter between the projections 5 6, so as to be locked in position and held rigidly to prevent the  
 45 movement of the fountain-roll by frictional contact with the transfer-roll. There is sufficient lost motion between the bar 30 and the stud 8 to permit the pawl 7 to be disengaged from the ratchet 28 before the lever 29 is op-  
 50 erated to advance the fountain-roll.

What I claim is—

1. The combination, with the fountain-roll, of the ratchet 28 and pawl 9 for advancing the roll, and the pawl 7, periodically engaging with the ratchet to lock the roll against  
 55 advancement, substantially as described.

2. The combination, with the fountain-roll, of the ratchet 28 and pawl 9 for advancing the roll, the pawl 7, for locking the roll against advancement, and the bar 30, for operating  
 60 the two pawls, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

STEPHEN D. TUCKER.

Witnesses:

J. A. HOVEY,

FRED. W. H. CRANE.