

P. T. KENNY.
 VARIABLE SPEED DRIVING MECHANISM.
 APPLICATION FILED JULY 14, 1908.

936,326.

Patented Oct. 12, 1909.

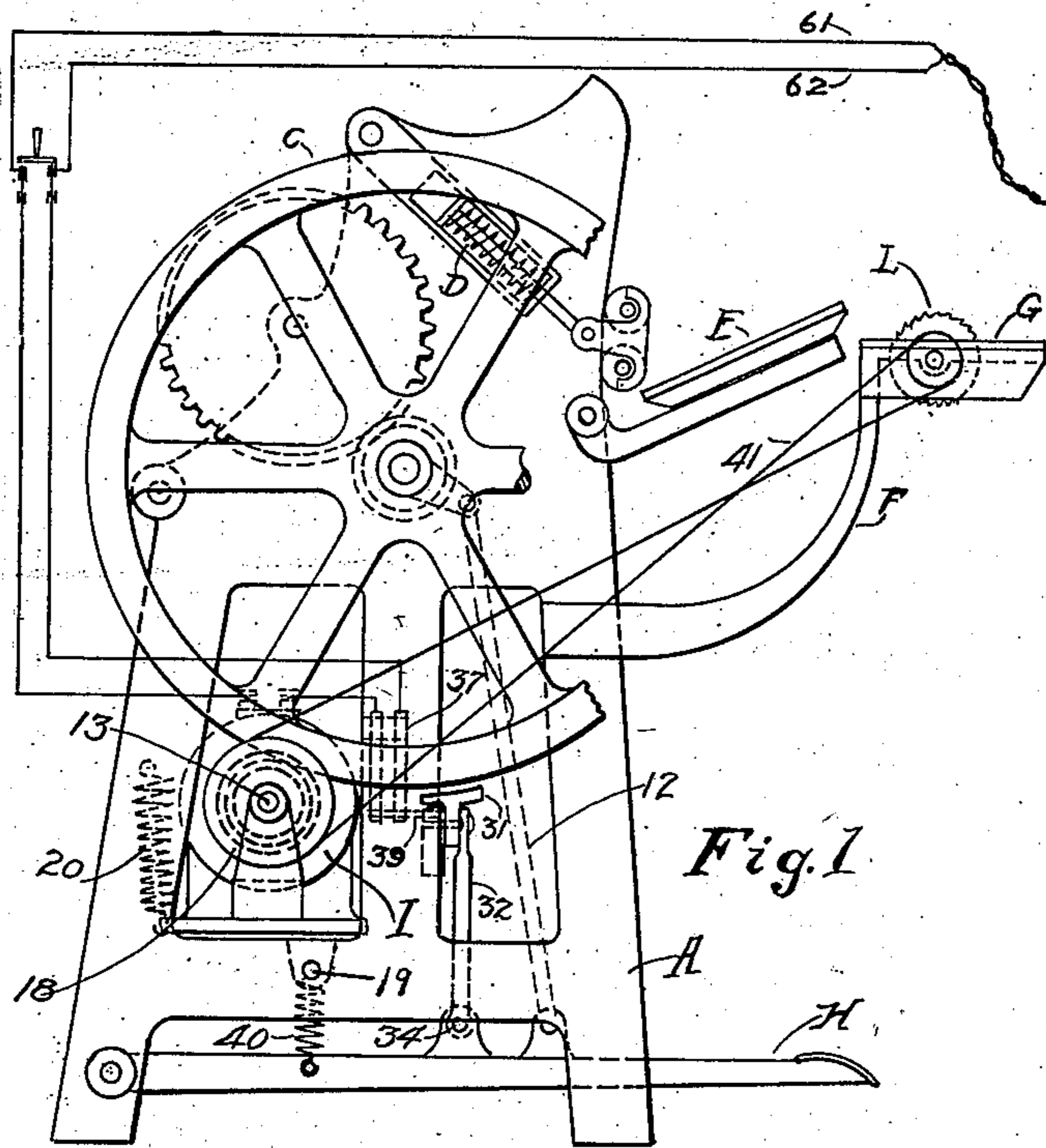


Fig. 1

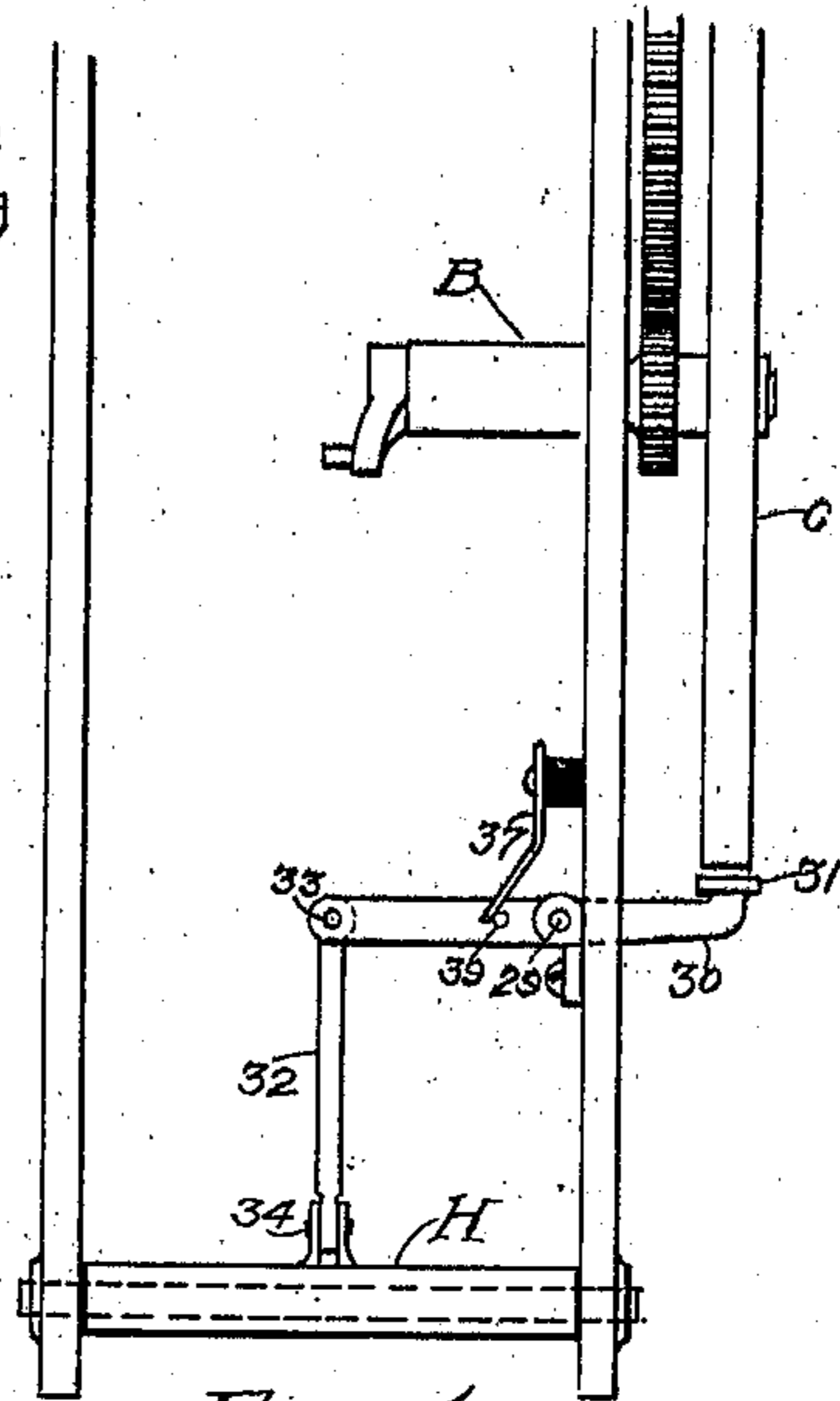


Fig. 4

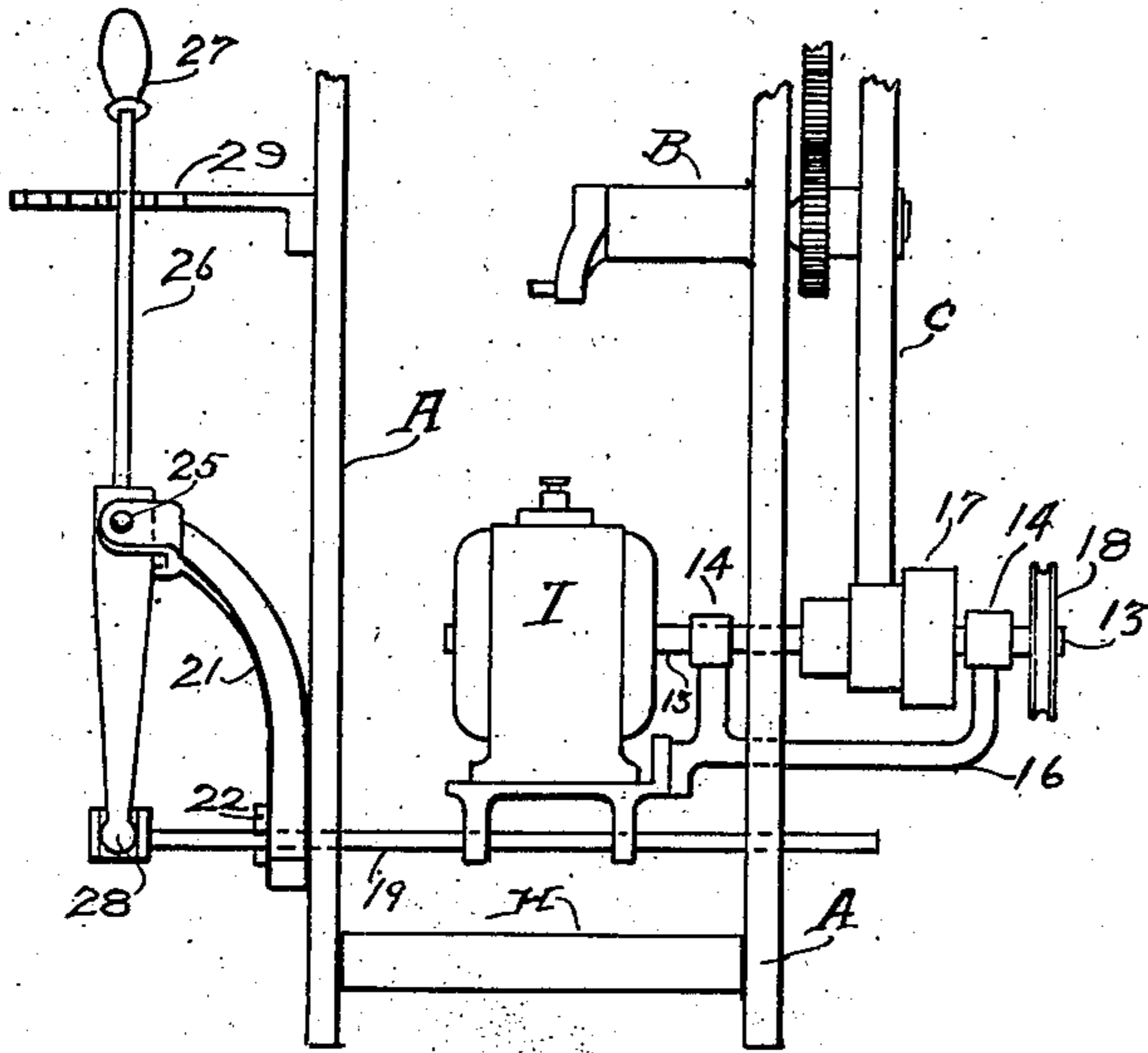


Fig. 2

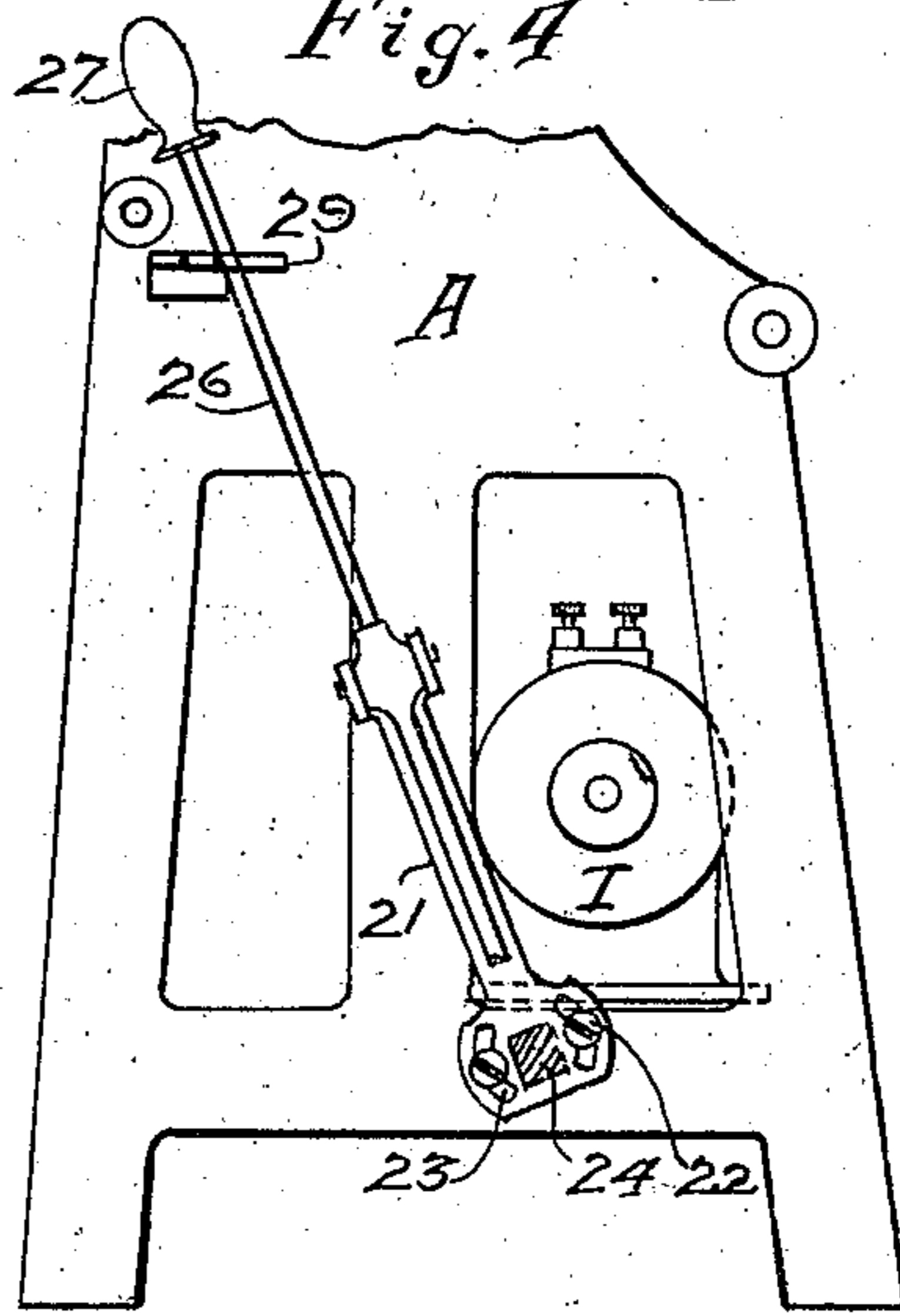


Fig. 3

WITNESSES:
 W. J. Booth
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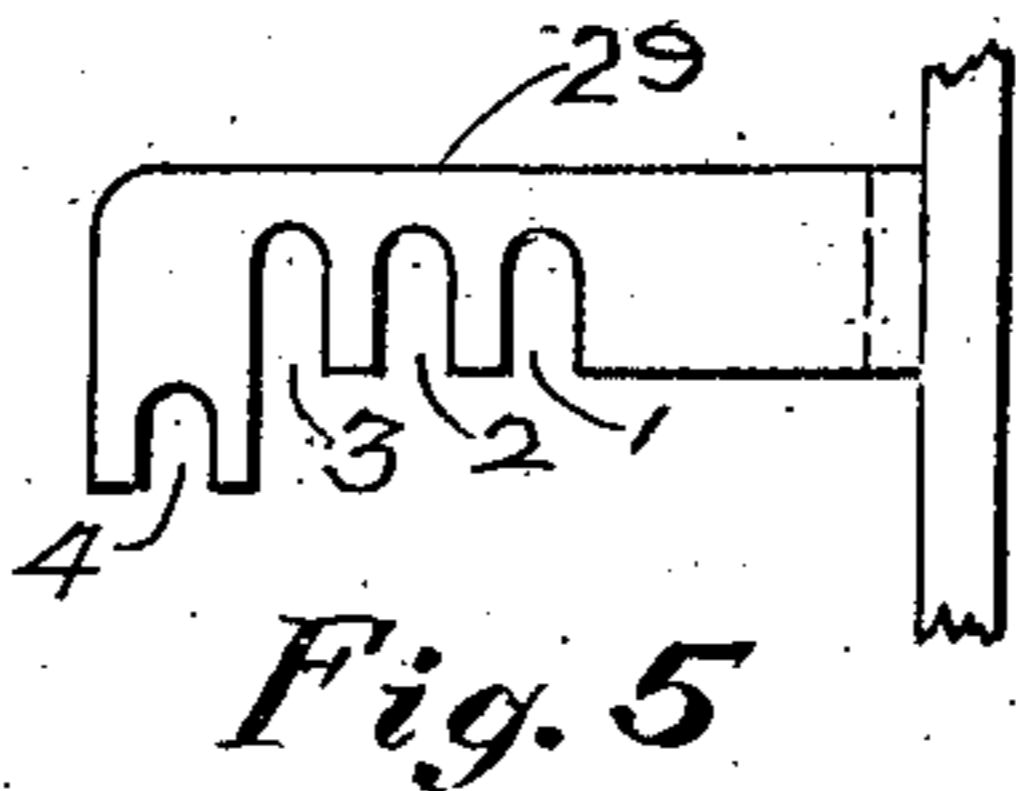


Fig. 5

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VARIABLE-SPEED DRIVING MECHANISM.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PAUL T. KENNY, a citizen of the United States, residing in the borough of Manhattan, in the county, city, and State of New York, have invented certain new and useful Improvements in Variable-Speed Driving Mechanism, of which the following is a specification, such as will enable others skilled in the art to which it pertains to make and use the same.

The object of my invention is to present a variable speed driving mechanism particularly suitable for printing presses, though capable of other applications.

Among the objects is the avoidance of telescopic driving connections; and the invention, roughly outlined, consists in the combination with a driven gear, of a motor and a cone of driving gears, a rock shaft supporting the motor and cone of gears, and an operating handle for rocking and longitudinally shifting the rock shaft with the supported motor and cone of gears.

Other features of the invention will become clear from the following specification and will be specified in the appended claims.

In the drawings, Figure 1 is a side view of a printing press provided with my variable speed driving mechanism; Fig. 2 is a rear view of the same, the top portion of the press being broken away; Fig. 3 is a view of the reverse side of the press from that shown in Fig. 1, the top part being broken away, as also the lower portion of the lever 26; Fig. 4 is a rear view of the printing press, the motor, cone of driving gears, and operating members being omitted to show the parts in front; and Fig. 5 is a detail of the slotted bracket for receiving the operating handle.

The reference letter A designates any suitable frame of the printing press. B the shaft of the fly wheel, C the fly wheel, D inking mechanism, and E the platen. No effort has been made to illustrate an operative press. The fly wheel C may be referred to as the driven gear; but it is obvious that the driven gear need not be a fly wheel.

The letter I designates an electric motor, whose armature shaft 13 carries a cone of driving gears 17, and preferably, also, an extra pulley 18. The shaft 13 may be sustained by journal arms 14 projecting upward from a bracket 16 secured at its inner end to the motor base. The base of the motor I is rigidly secured to a supporting rock shaft

19, which is mounted rotatably and slidably in the frame A.

The preferred mechanism for rocking and longitudinally shifting the rock shaft 19 is as follows: 21 is a bracket having at its lower end a squared opening in which is received a squared portion 24 of the shaft 19. This lower end of the bracket 21 is connected pivotally with the outer side of the frame member A by curved slots 23 and bolts or screws 22. Pivoted to the upper end of the bracket 21 on an axis perpendicular to the pivotal axis of the bracket 21, as at 25, is an operating lever 26 having the handle portion 27. The lower end of this operating lever has universal joint connection with the rock shaft 19, as at 28. The upper portion of the operating lever or handle 26 is received in slots 1, 2, 3, or 4 of a bracket 29. When the lever rests in slot 1 the largest gear of the cone 17 is in position to engage the fly wheel C; slots 2 and 3 correspond with the middle-sized and smallest gear of the cone 17. Of course, there may be more than three speeds, if desired. The bottom of the slot 4 is sufficiently in advance of the bottoms of the other slots, so that, when the handle 26 is in this slot, the motor I and the cone 17 are rocked so that none of the driving gears can engage with the fly wheel C. A spring 20 (see Fig. 1) may be utilized as means for holding the several gears of the cone 17 in engagement with the fly-wheel C, and the handle 26 in the slots or notches of the bracket 29.

The motor circuit is indicated at 61, 62, and may be broken by a movable contact 39, mounted in lever 30 and adapted to engage with the stationary contacts 37. This lever 30 is shown as pivoted intermediate its length, as at 29, to one side of the printing press frame, being provided at its outer end with a brake shoe 31 for engaging the fly wheel C and at its inner end with a link 32 pivoted at 33 and 34 to the lever 30 and the treadle or foot lever H, respectively. The arrangement is such that depression of the treadle H breaks the motor circuit and applies the brake 31; the treadle being normally held elevated, as by a spring 40.

The furniture cutting saw L, mounted in conjunction with a table G supported by a bracket F, and connected with the pulley 18, is an example of mechanism that may be driven from this extra pulley, when the cone

of gears 17 is locked out of engagement with the driven wheel C. When the motor is not operating, the wheel C, and therefore, the printing press, may be driven by foot power from the treadle H, by means of a rod 12 that may connect the treadle and a crank on the shaft B. Of course, when the rod or link 12 is connected between the treadle and the driven mechanism, the lever 30 will be disconnected in any suitable fashion from the treadle H. The saw L may also be driven from the treadle H, one of the cone of gears 17 being in engagement with the fly wheel C. Under such circumstances, the motor circuit will be open so that the motor will not act as a brake.

Preferably the cone of gears 17 and the wheel C constitute a friction drive, but this need not always be the case.

What I claim as new is:

1. In a variable speed driving mechanism, the combination of a driven gear, a motor and a cone of driving gears, a longitudinally movable rock shaft supporting said motor and cone of gears, and an operating handle for rocking and longitudinally shifting said rock shaft and the supported motor and cone of gears.

2. In a variable speed driving mechanism, the combination of a driven gear, a motor and a cone of driving gears, a longitudinally movable rock shaft supporting said motor and cone of gears, an operating handle for rocking and longitudinally shifting said rock shaft and the supported motor and cone of gears, and a locking member with slots adapted to receive said handle.

3. In a variable speed driving mechanism, the combination of a driven gear, a motor, a cone of driving gears on the shaft thereof, and an extra pulley also on the shaft of the motor, a longitudinally movable rock shaft supporting said motor and cone of gears, an operating handle for rocking and longitudinally shifting said rock shaft and the sup-

ported motor and cone of gears, and a member adapted to hold said handle with the cone of gears in such position that none thereof can engage the driven gear, so that the motor may be disconnected from the driven gear when it is desired to drive from the pulley alone.

4. In a variable speed driving mechanism, the combination with a supporting structure, a cone of gears, and a gear adapted to be engaged selectively therewith; of a bracket pivoted to said supporting structure, a shaft slidably but not rotatably mounted in said bracket at the pivotal axis thereof, said shaft supporting and carrying in its movements one of the above-mentioned gear parts, and an operating lever pivoted to said bracket on an axis perpendicular to the pivotal axis of the bracket, so as to be capable of rocking the latter, and connected with said shaft so as to be capable of sliding the same in the bracket.

5. In a variable speed driving mechanism, the combination with a driven gear, a treadle, and driving connection between said treadle and the driven gear, of a motor and a cone of driving gears, a longitudinally movable rock shaft supporting said motor and cone of gears, an operating handle for rocking and longitudinally shifting said rock shaft and the supported motor and cone of gears, and a member adapted to hold said handle with the cone of gears in such position that none thereof can engage with the driven gear, so that the motor may be disconnected from the driven gear when it is desired to drive the latter from the treadle.

Signed at the borough of Manhattan in the county, city and State of New York, this 6th day of December A. D. 1907.

PAUL T. KENNY.

Witnesses:

CHARLES FRELLOEHR,
ROMOLA GORDON.