

No. 891,802.

E. GUTHRIE.

PATENTED JUNE 23, 1908.

SELF PLAYING PIANO MAGAZINE.

APPLICATION FILED JAN. 21, 1908.

3 SHEETS—SHEET 1.

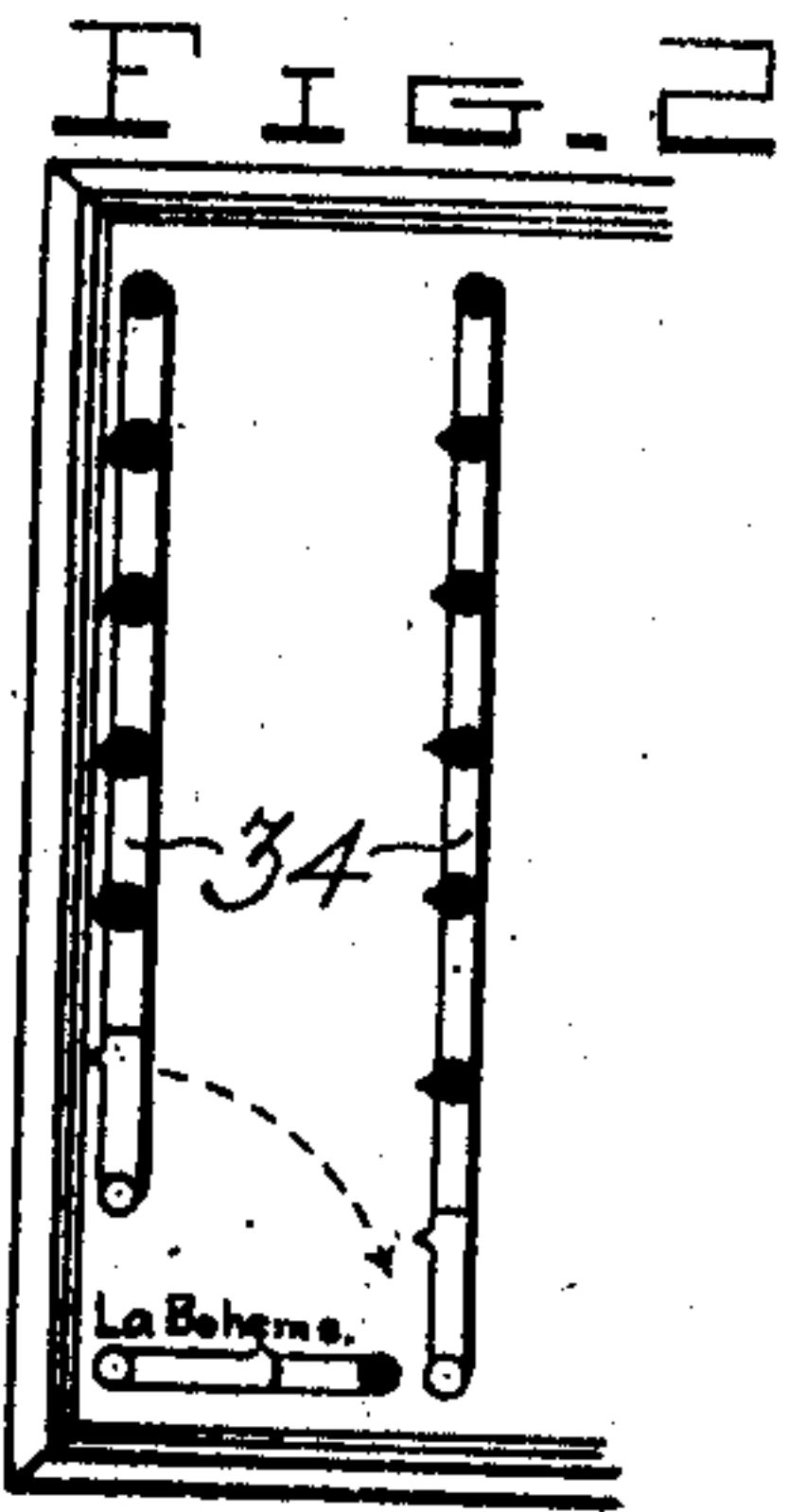
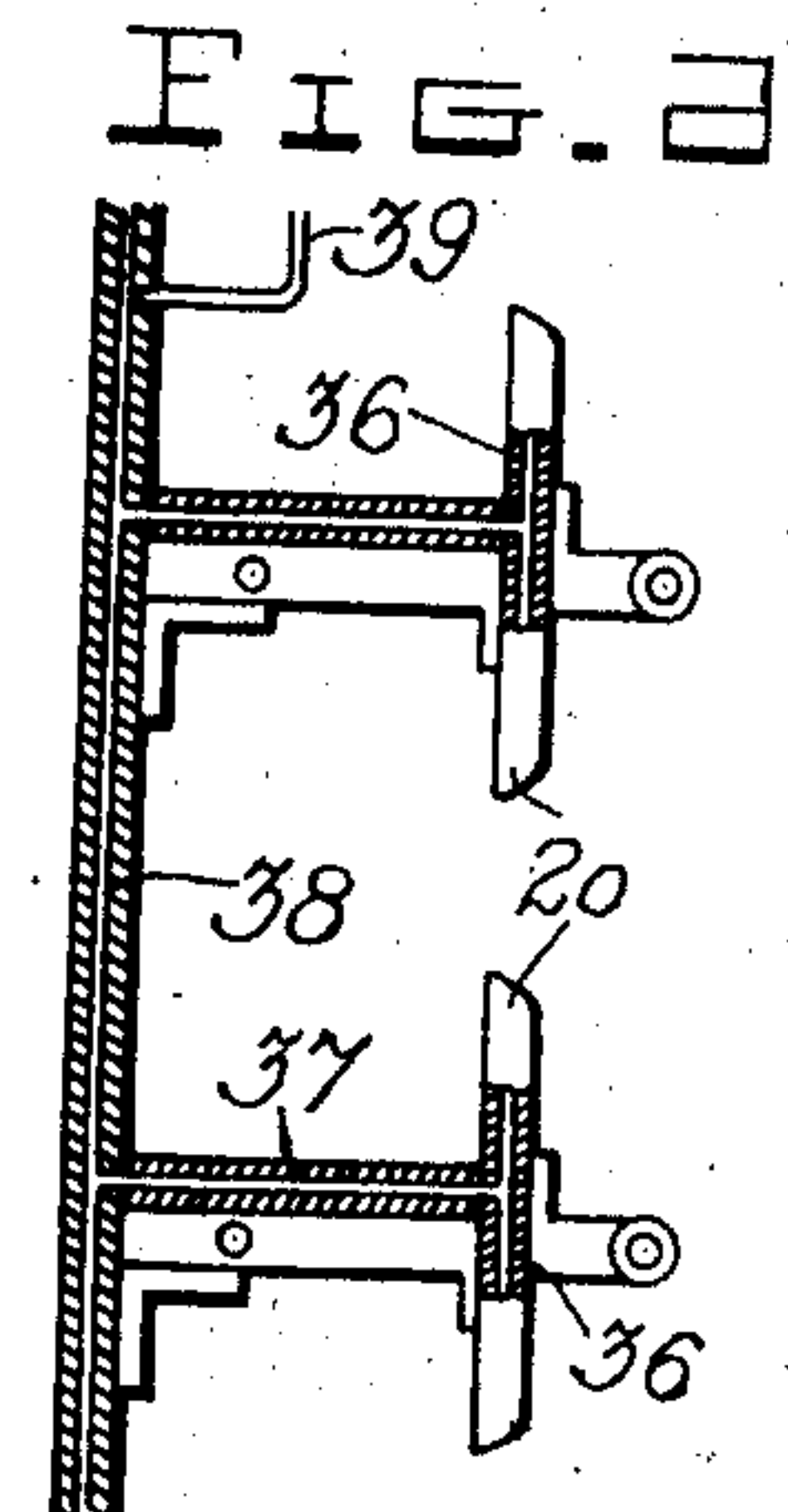
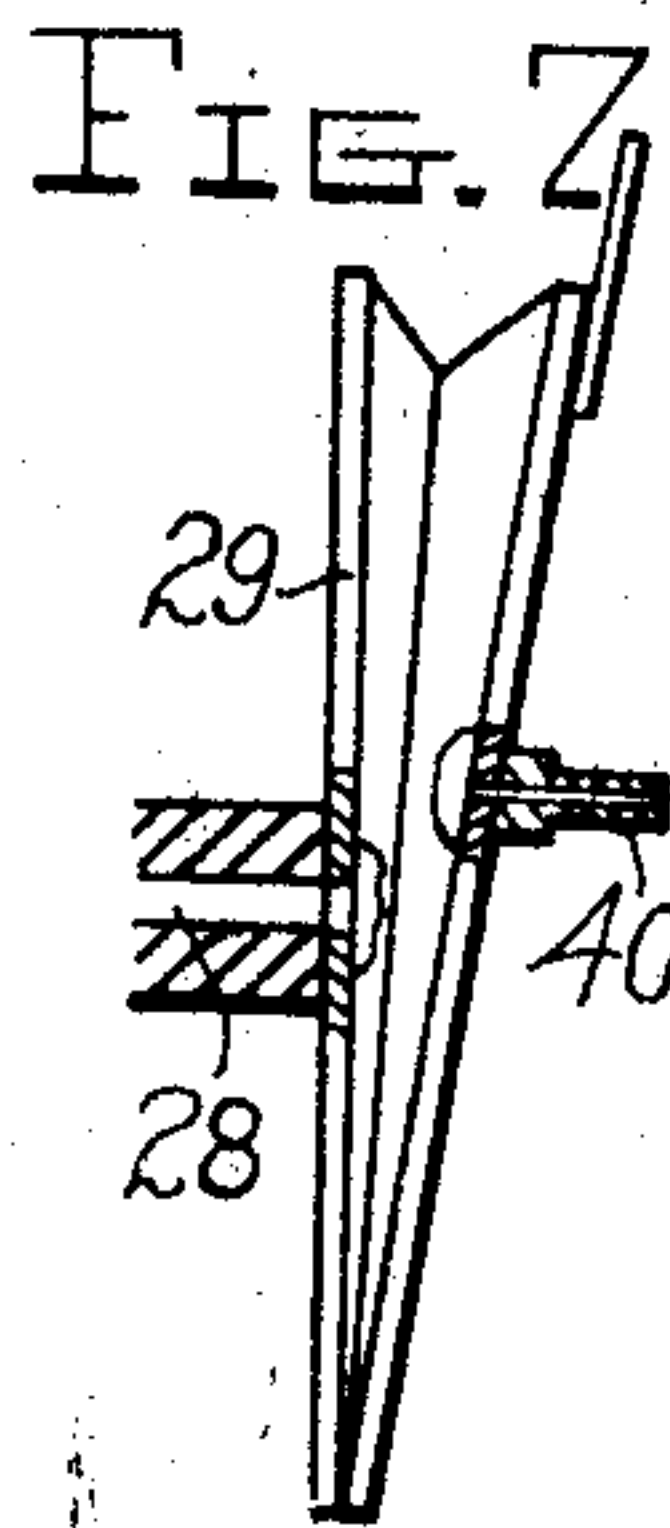
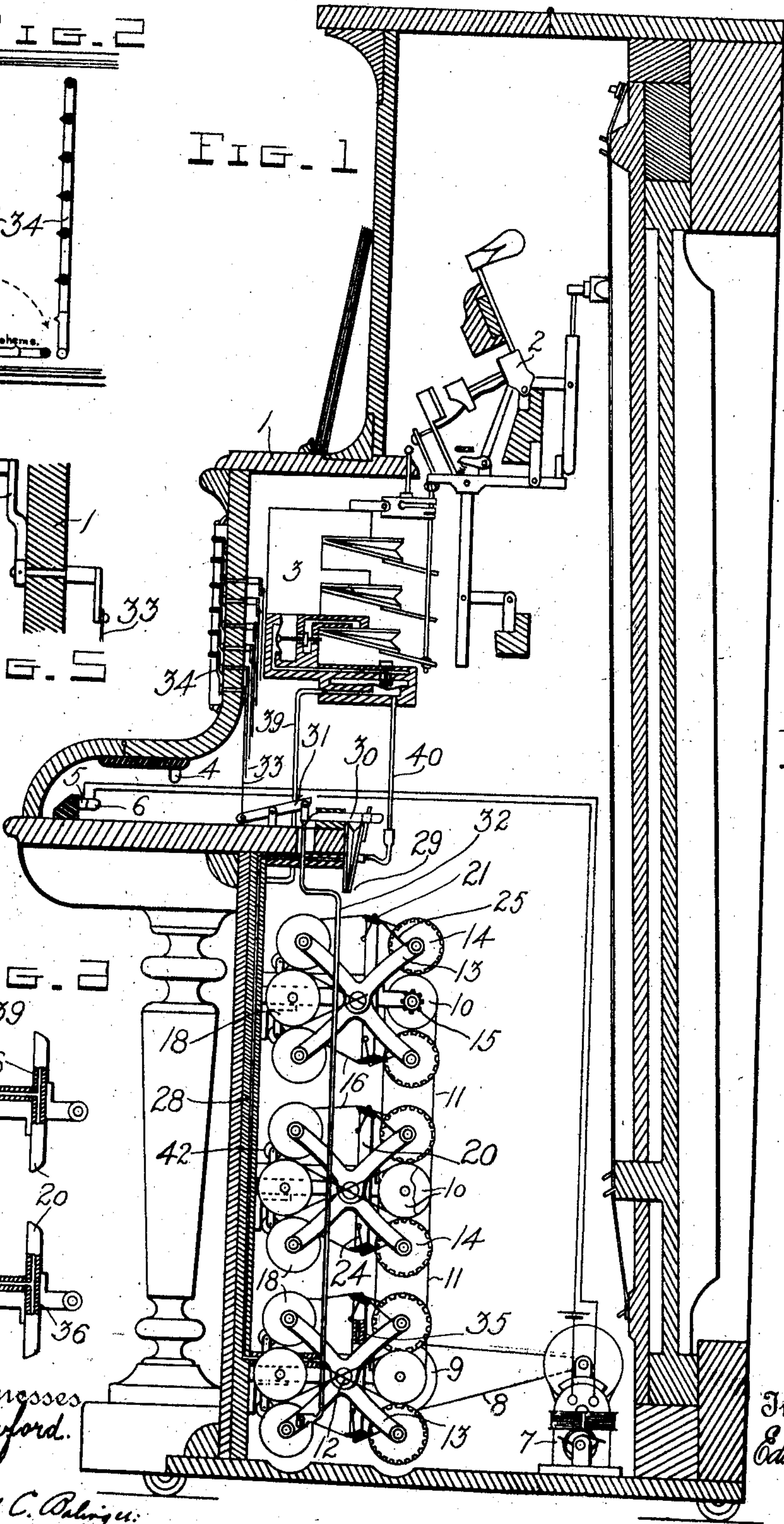
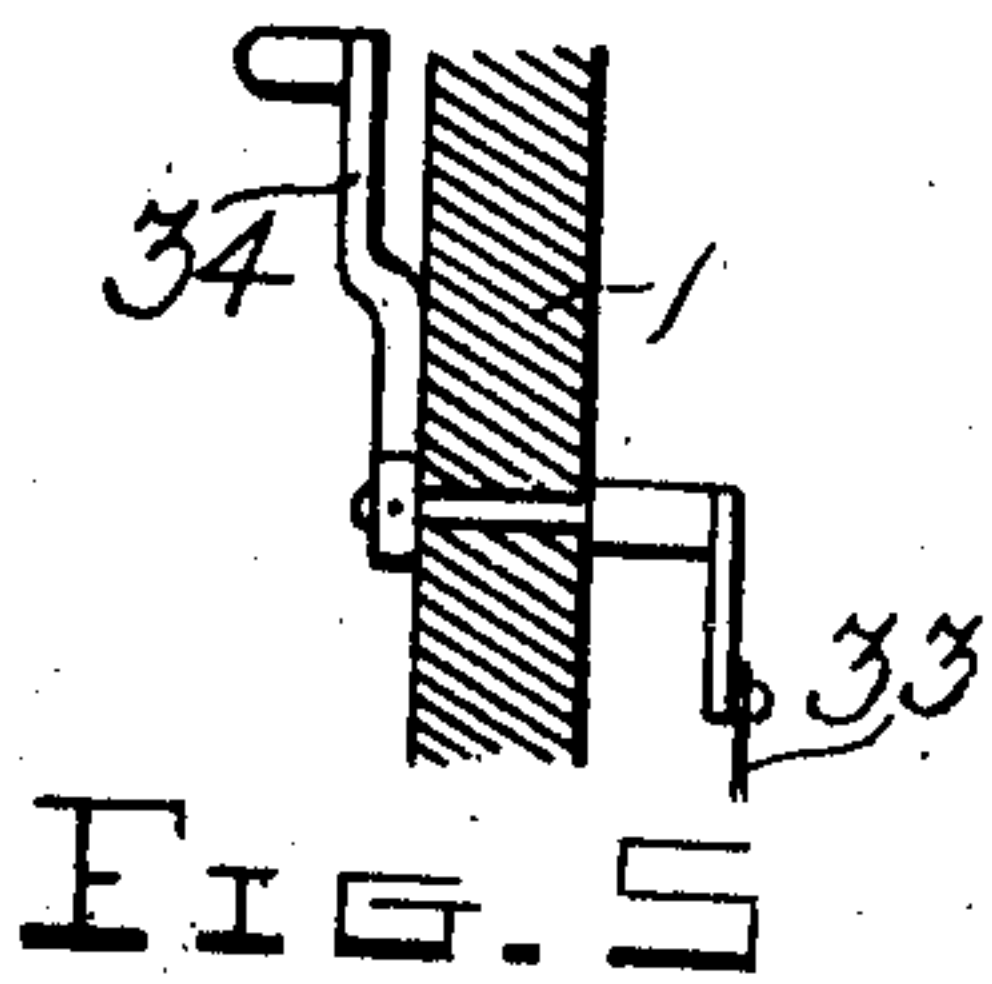


FIG. 1



Witnesses  
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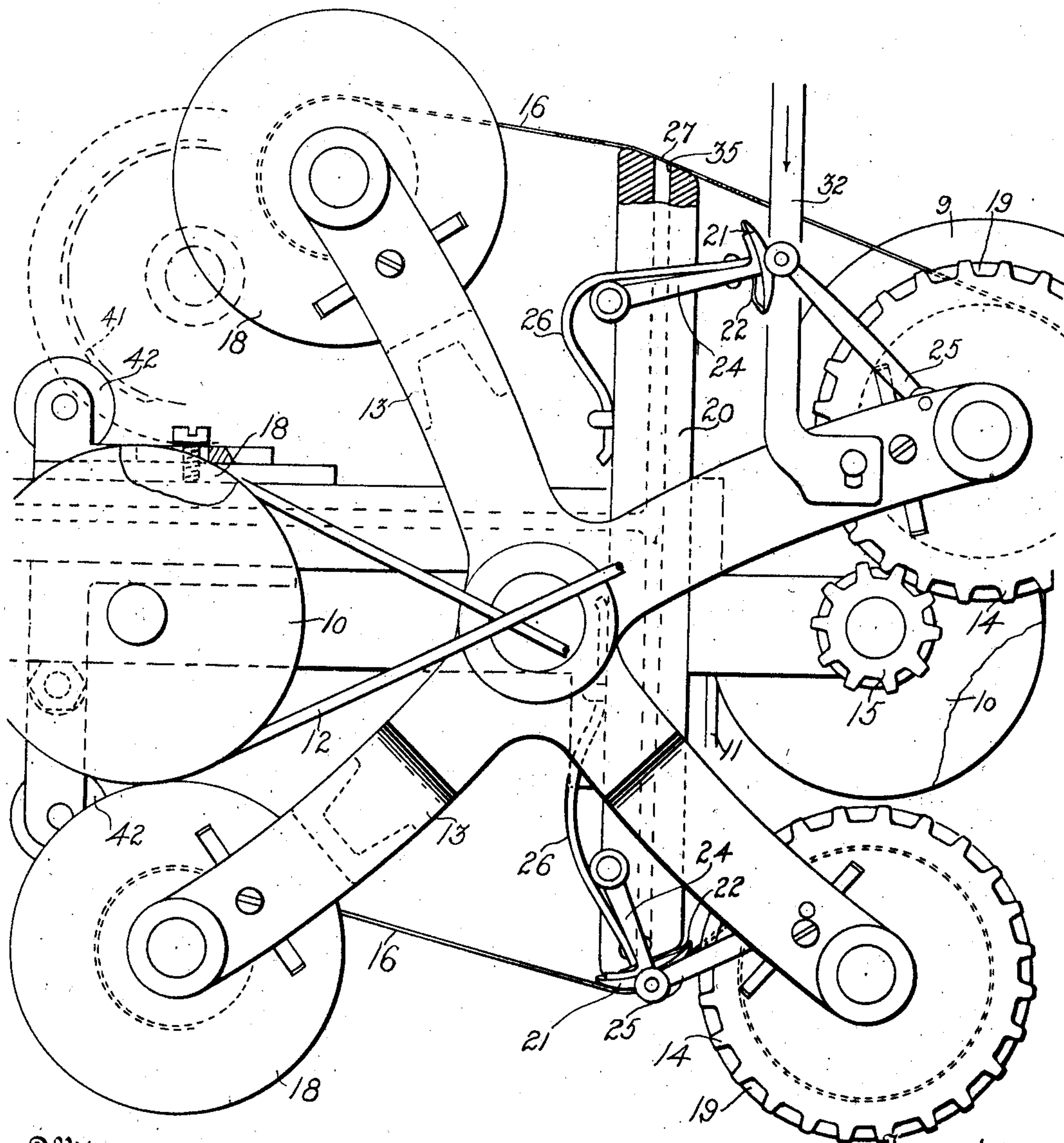
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3 SHEETS—SHEET 2.

FIG. 3



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3 SHEETS—SHEET 3.

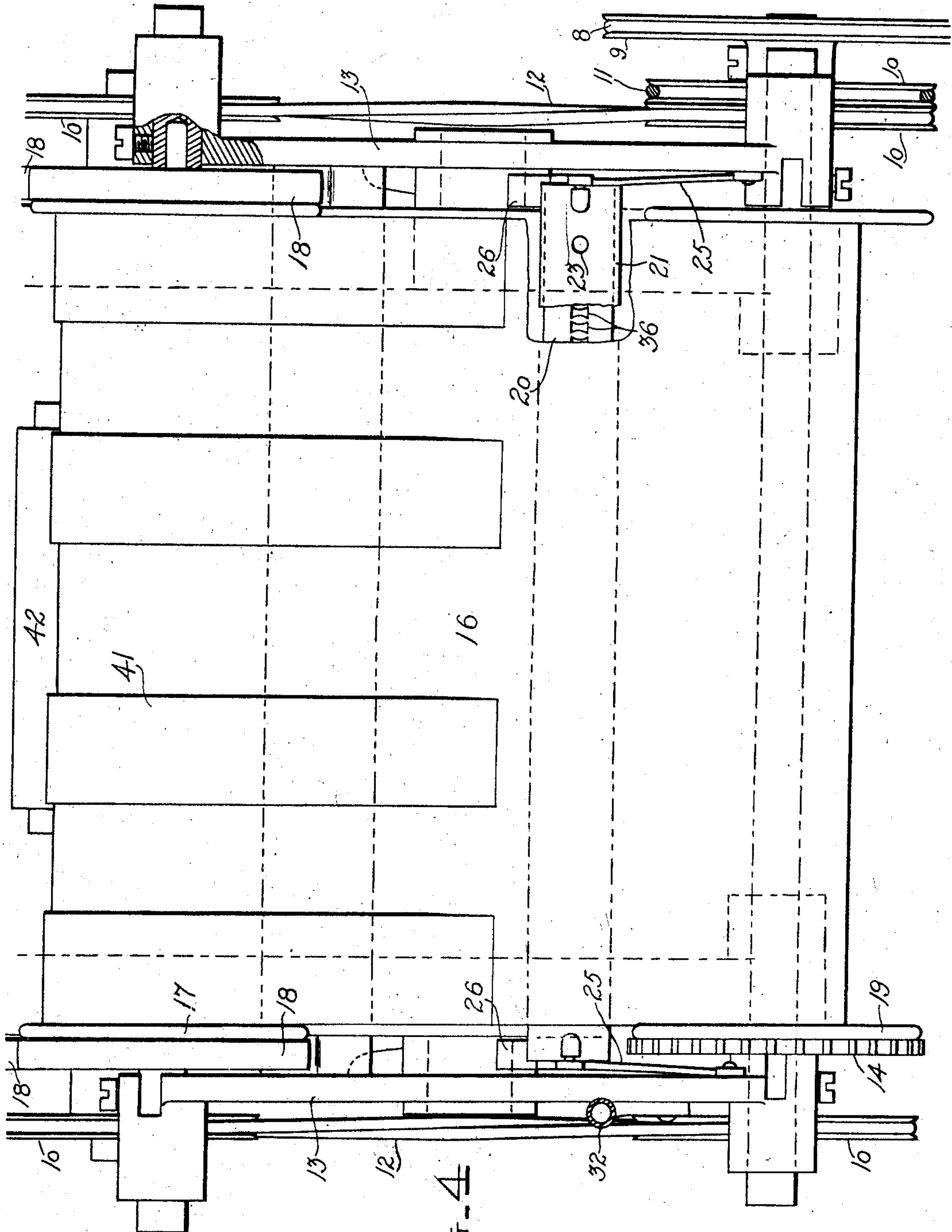


FIG-4

Witnesses  
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# UNITED STATES PATENT OFFICE.

EDWIN GUTHRIE, OF WASHINGTON, DISTRICT OF COLUMBIA.

## SELF-PLAYING-PIANO MAGAZINE.

No. 891,802.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed January 21, 1908. Serial No. 411,936.

*To all whom it may concern:*

Be it known that I, EDWIN GUTHRIE, citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Self-Playing-Piano Magazines, of which the following is a specification.

This invention relates to self-playing piano magazines. More particularly stated, it belongs with that class of accessory devices applicable to automatic instruments for holding a number of note sheet rolls within the piano case, and having machinery whereby any one roll may be played at will, and each roll rewound afterwards by the normal operation of the apparatus. For example, in any large institution of learning, it is frequently desired by the instructor to convey to the class in music an understanding of the special characteristics of individual composers. By the use of magazine contrivances a number of the compositions of each prominent composer may be kept set and available at once for purposes of illustration, thus materially augmenting the scope and convenience of the piano.

The object of my invention is the production of what is believed to be improved and simplified mechanism for the purpose set forth.

The object is accomplished by fashioning and associating working elements as illustrated in the accompanying drawings, of which

Figure 1 represents a vertical section of a piano case showing all parts of the invention assembled. Fig. 2 is a front view of a portion of a frame containing the setting arms. Fig. 3 is a side view of one set of roll-holding and actuating devices. Fig. 4 is a plan view from above of the lowest set of those devices. Fig. 5 is an enlarged side view of one setting arm. Fig. 6 is a fragmentary vertical section of the trackers and parts connected, showing the continuation of the tracker duct into a common or trunk duct. Fig. 7 is an enlarged, partly sectional view of the inlet and outlet of the latch bellows.

Like reference numbers mark the same parts throughout.

Within the case 1 is provided an action 2 operated in the usual manner by pneumatics 3. With the piano-playing parts and the means introduced to quicken the response of those parts to the air entering through the note sheet, this invention has nothing to do.

A switch blade 4 inserted between the twin clasping blades 5 and 6 when the front of the case is opened, completes an electric circuit and starts a motor 7. Clearly, when the front is closed the circuit is broken. A belt 8 from the motor drives the large pulley 9, and a number of pulleys 10 are turned by vertical and crossed belts 11 and 12 as more fully explained below.

The angle frames 13 are the roll holders. They are joined together in pairs and two pairs are arranged in each set and have a common pivotal support as illustrated. At the end of one leg of the angle frame, best shown in Fig. 3, is a large gear 14, cut to mesh with the driving pinion 15 by which the note sheet 16 is drawn from the supply roll 17. At the ends of the supply roll and bodily movable with it are the friction wheels 18. The gear 14 is at one end of the take-up roll 19.

The trackers are marked 20, and it is obviously necessary to close the ends of the ducts while any note sheet is being rewound. This is accomplished by inserting the cap 21 between the note sheet and the top of the tracker, and providing the cap with a pliable lining 22, usually of rubber fabric, which is held to the mouths of the ducts by pressure of air through holes 23 in cap 21. The cap is borne by the arms 24 and operated by the connecting bars 25 pivotally coupling the cap and one leg of each angle frame. In the drawings the arm is shown as adapted to be actuated by the spring 26, which consequently moves the angle frames. The use of the spring is the preferred construction, but it is thought to be wholly apparent that the angle frames could be weighted and the function of the springs performed by gravity.

Let it be assumed that the note sheet is provided near one end with an opening 27, through which air may enter and pass by way of the duct 28 into the bellows 29. The bellows is pivotally connected to a sliding latch bar 30, arranged to engage the end of the latch lever 31 and thus hold the lever down. The movement of the lever is transmitted by the rod 32 to the angle frames, and the lever is operated by wire 33 when drawn upwardly by the setting arms 34.

The duct in the tracker which admits air to release the latch is designated by number 35. The other ducts, those communicating with the piano-playing parts, are marked 36, and each opens by way of an intermediate duct 37 into a corresponding trunk duct 38 lead-



ing by a suitable connection 39 to the pneumatics 3.

The bellows 29 may be connected with any exhausted chamber, as, for example, by the tube 40 to one of the chambers relating to the pneumatics 3. For, it is intended that the outlet from bellows 29 into tube 40 shall be smaller than the inlet from duct 28, in order that entering air may expand the bellows promptly before it is slowly exhausted through tube 40. This construction is set out in Fig. 7.

The remaining parts are best described in explaining the operation. The motor being started, the piece to be played is selected by turning down the proper setting arm 34, thus depressing rod 32 and tilting the pair of angle frames until the gear 14 engages pinion 15 and the latch bar 30 catches the lever 31. As the frames tilt, the cap 21 is removed from the end of the tracker, letting the note sheet down upon the mouths of the ducts. When the piece is finished the opening 27 in the note sheet admits air through the tracker and duct 28 into bellows 29, which has been fully exhausted during the action, and the latch is released. Now, the springs 26 tilt the frames in the opposite direction, re-capping the tracker, and bringing the friction wheels 18, concentrically borne by the supply roll, downward against the like friction wheels 18 driven by the crossed belts 12 on pulleys 10 as illustrated. The springs hold the friction wheels together while the note sheet is re-wound, until that portion is reached which is provided with the leather strips 41, best shown in Fig. 4. As the note sheet accumulates on the roll 17, some momentum is acquired and when the leathers are suddenly encountered, they run up for a short distance upon the lifting rolls 42, separating the friction wheels as illustrated in Fig. 3. The rewinding of any note sheet is independent of the playing of any other sheet.

It may be stated here that the note sheet in rewinding passes over the cap 21, which is exteriorly smooth, and there is no pressure and, therefore, no wear upon the sheet.

Having now described my invention and explained the mode of its operation, what I claim is—

1. In a self-playing piano magazine, the combination with pairs of rolls each pair comprising a supply roll and a take-up roll, of a plurality of roll-holding devices, a plurality of trackers one for each pair of rolls, driving and rewinding mechanism, means for effecting the engagement of each take-up roll with the said mechanism to drive the take-up roll, a latch arranged to maintain the said engagement, latch-releasing means, means for disengaging the said take-up roll and the said mechanism and for effecting the engagement of the supply roll and the said mechanism

to rewind the supply roll, and means constructed and arranged to disengage the supply roll and the said mechanism.

2. In a self-playing piano magazine, the combination with pairs of rolls each pair comprising a supply roll and a take-up roll, of a plurality of roll-holding devices, a plurality of trackers one for each pair of rolls, tracker caps movably supported, driving and rewinding mechanism, means for effecting the engagement of each take-up roll with the said mechanism to drive the take-up roll, means for disengaging the said take-up roll and the said mechanism and for effecting the engagement of each supply roll with the said mechanism to rewind the supply roll, means for disengaging the said supply roll, and means whereby the tracker caps are moved by the said means for effecting the engagements of the said rolls.

3. In a self-playing piano magazine, the combination with pairs of rolls each pair comprising a supply roll and a take-up roll, of roll-holding devices, a plurality of trackers one for each pair of rolls, movable means for opening and closing the tracker ducts, driving and rewinding mechanism, means for effecting the engagement of the take-up roll and the said mechanism to drive the take-up roll, means for disengaging the said take-up roll and the said mechanism and for effecting the engagement of the supply roll and the said mechanism to rewind the supply roll, means constructed and arranged to disengage the supply roll, and connections whereby the opening and closing means controlling the tracker ducts is operated by the said means for effecting the engagement of the said rolls.

4. In a self-playing piano magazine, the combination with pairs of rolls each pair comprising a supply roll and a take-up roll, of movable roll-holding devices for each pair of rolls, a plurality of trackers one for each pair of rolls, movable means for opening and closing the tracker ducts, driving and rewinding mechanism, means for effecting the engagement of the take-up roll and the said mechanism to drive the take-up roll, means for disengaging the take-up roll and the said mechanism and for effecting the engagement of the supply roll and the said mechanism to rewind the supply roll, means constructed and arranged to disengage the supply roll, and connections whereby the opening and closing means controlling the tracker ducts is operated by the said means for effecting the engagement of the said rolls.

In testimony whereof I affix my signature in presence of two witnesses.

EDWIN GUTHRIE.

Witnesses:

B. I. CRAWFORD,  
GRACE M. THOMAS.