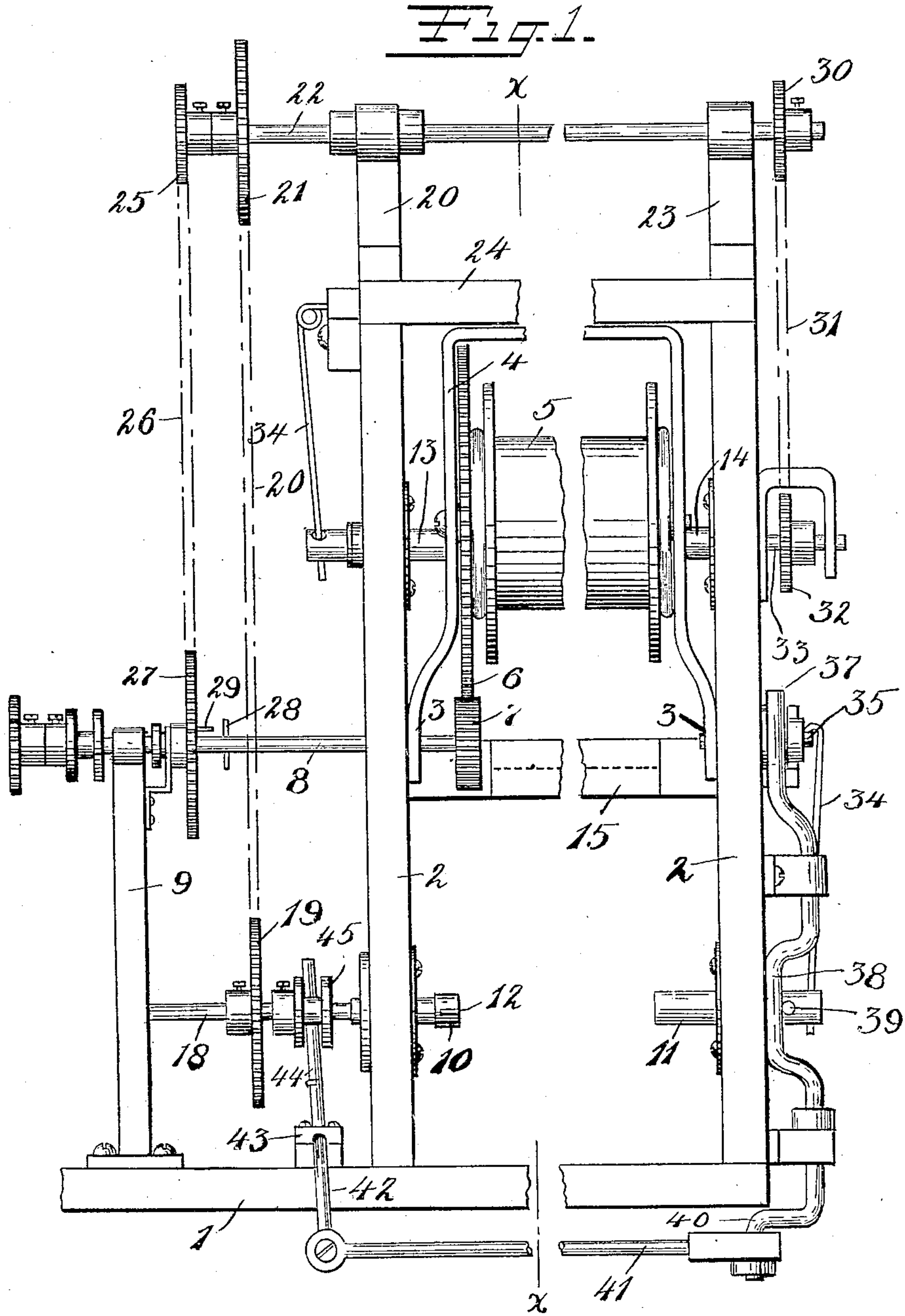


N. D. HOSLEY.
SWINGING MUSIC ROLL ACTUATOR.
APPLICATION FILED MAR. 27, 1908.

969,783.

Patented Sept. 13, 1910.

5 SHEETS—SHEET 1.



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5 SHEETS—SHEET 2.

Fig. 2.

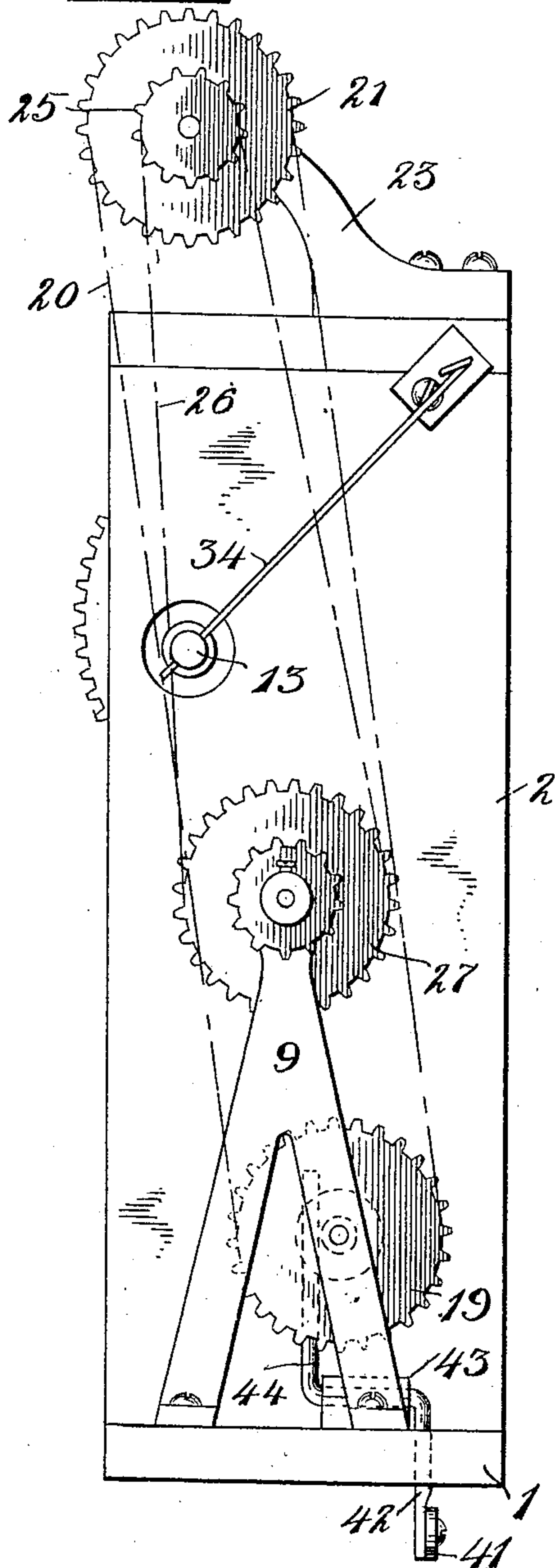
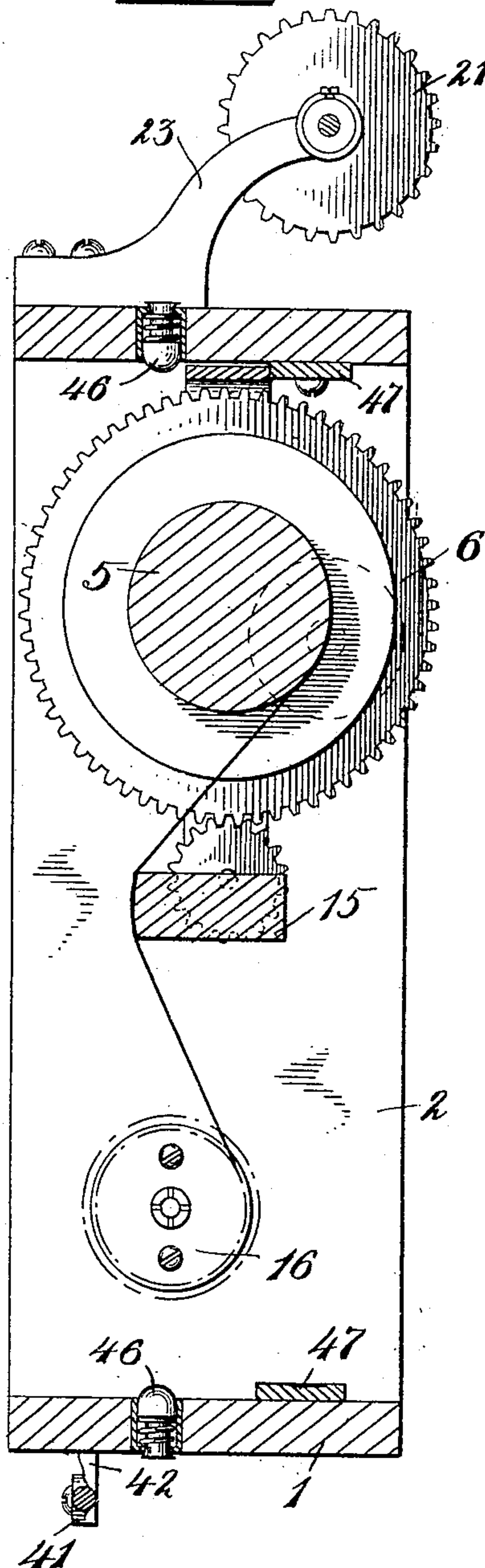


Fig. 3.



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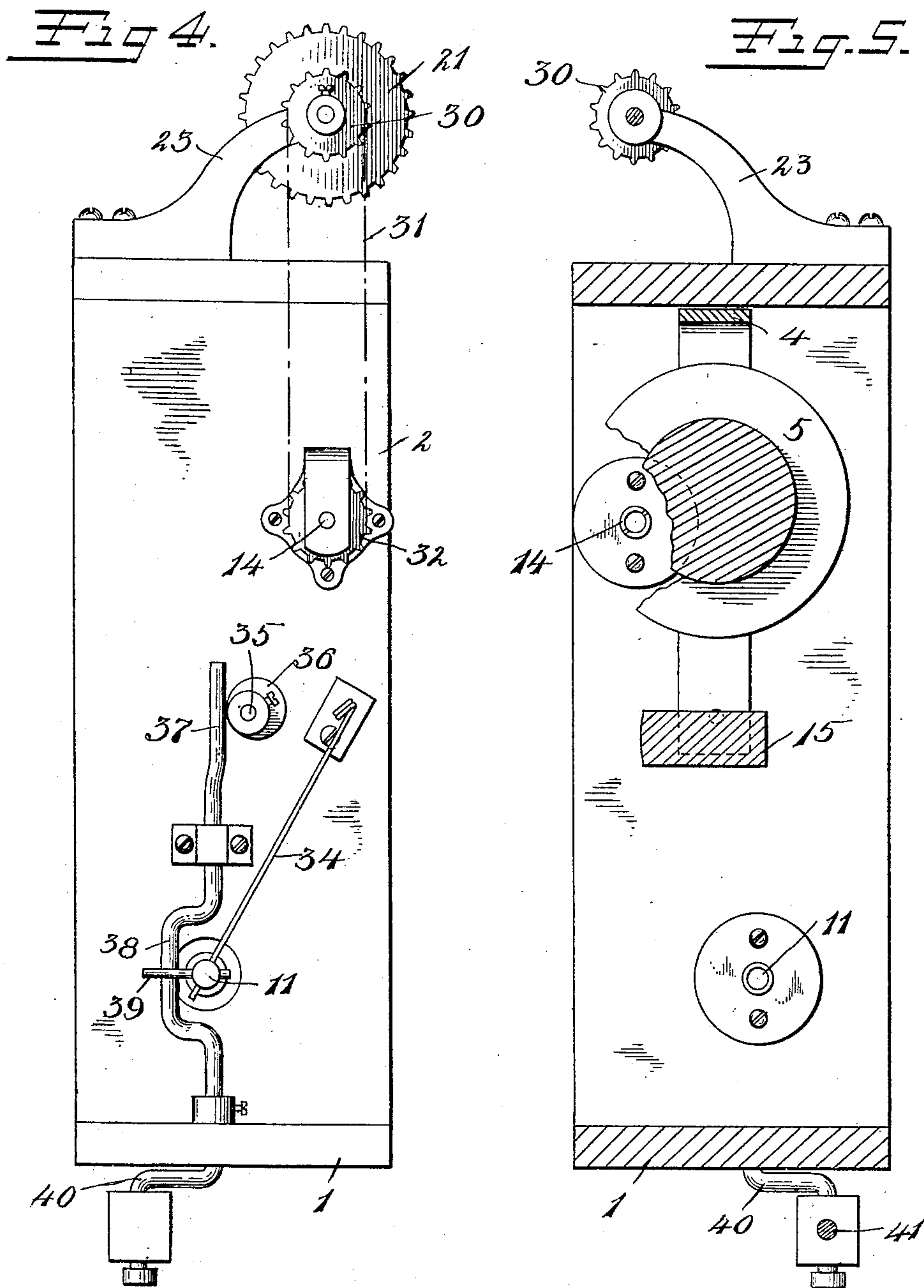
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5 SHEETS—SHEET 3.



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6 SHEETS—SHEET 4.

Fig. 6.

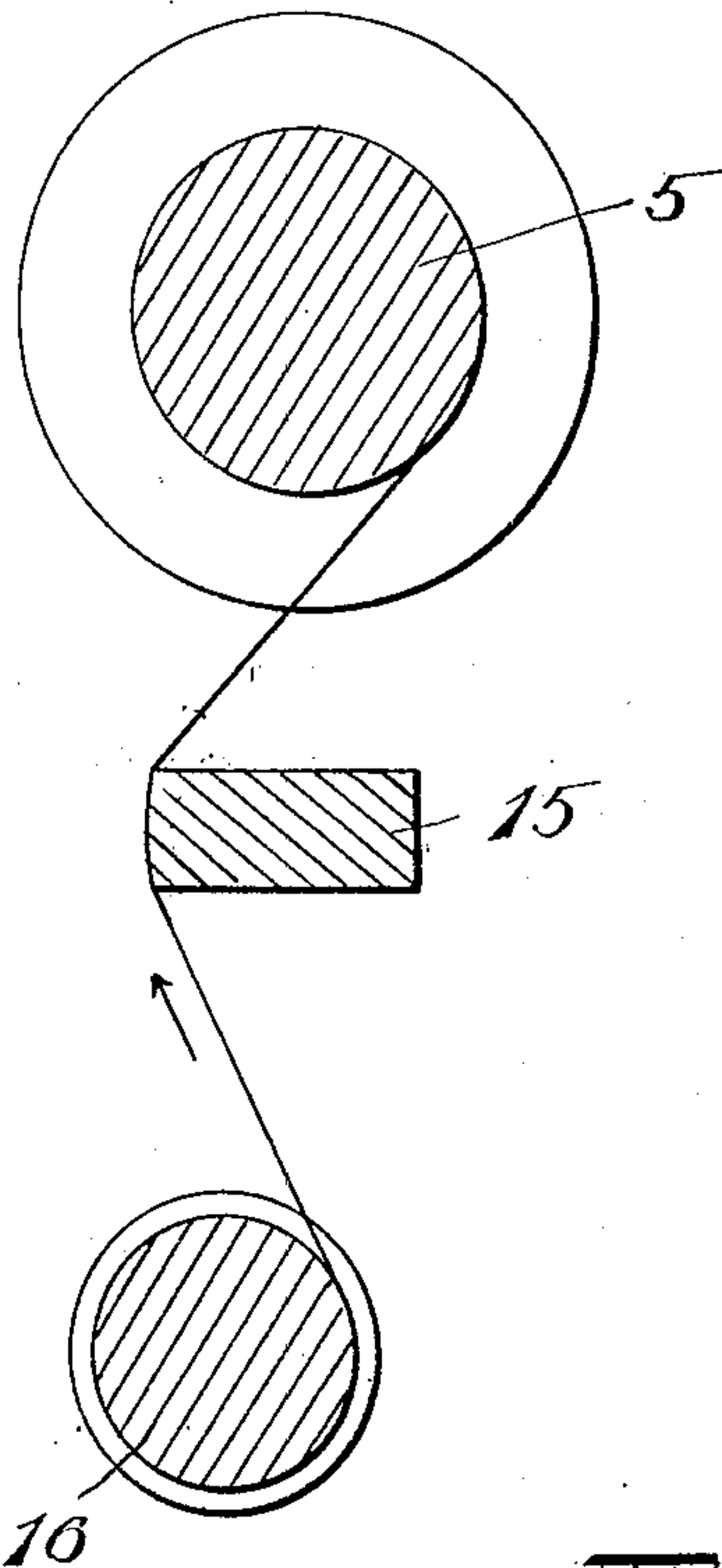


Fig. 7.

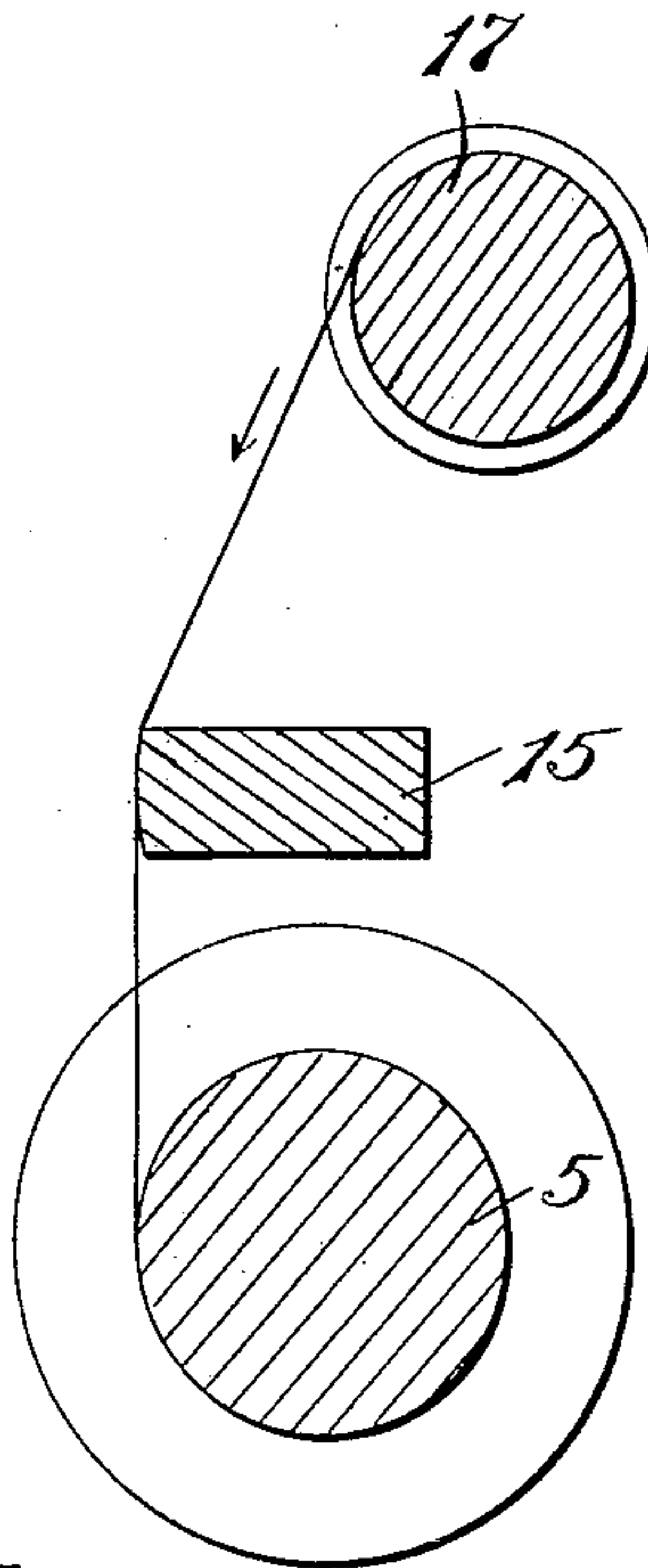


Fig. 8.

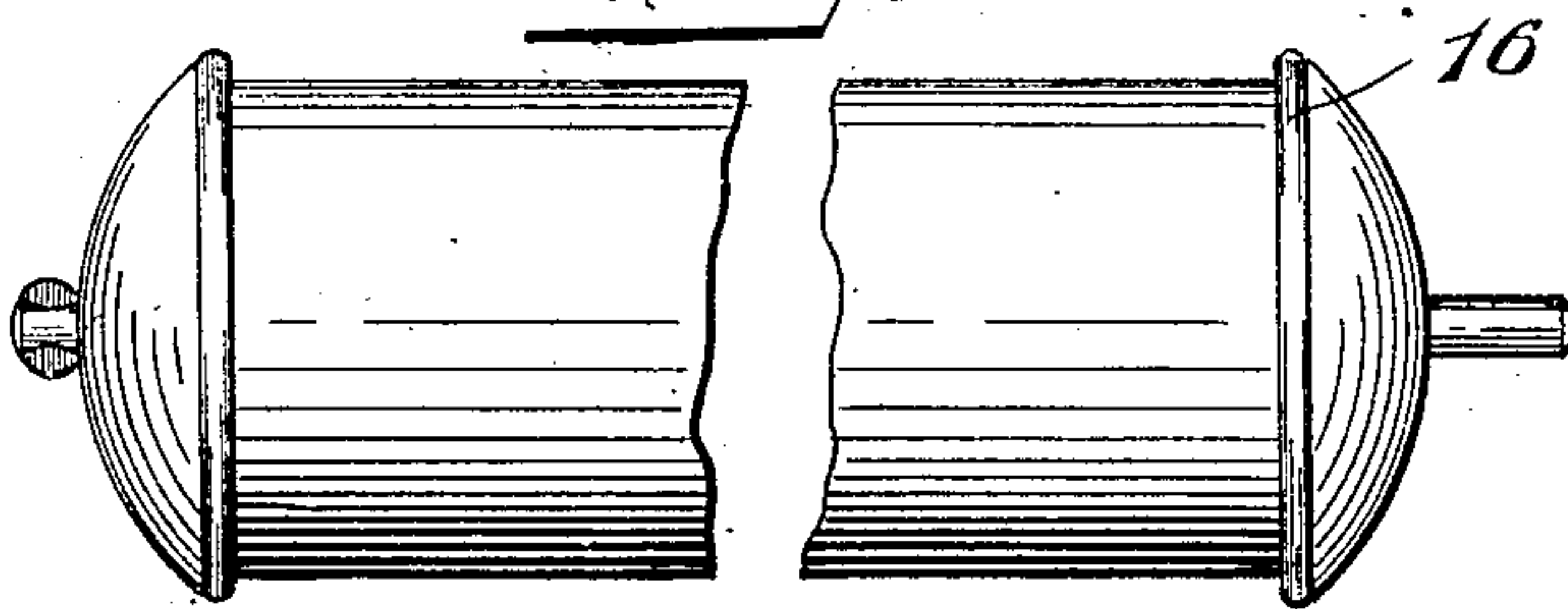
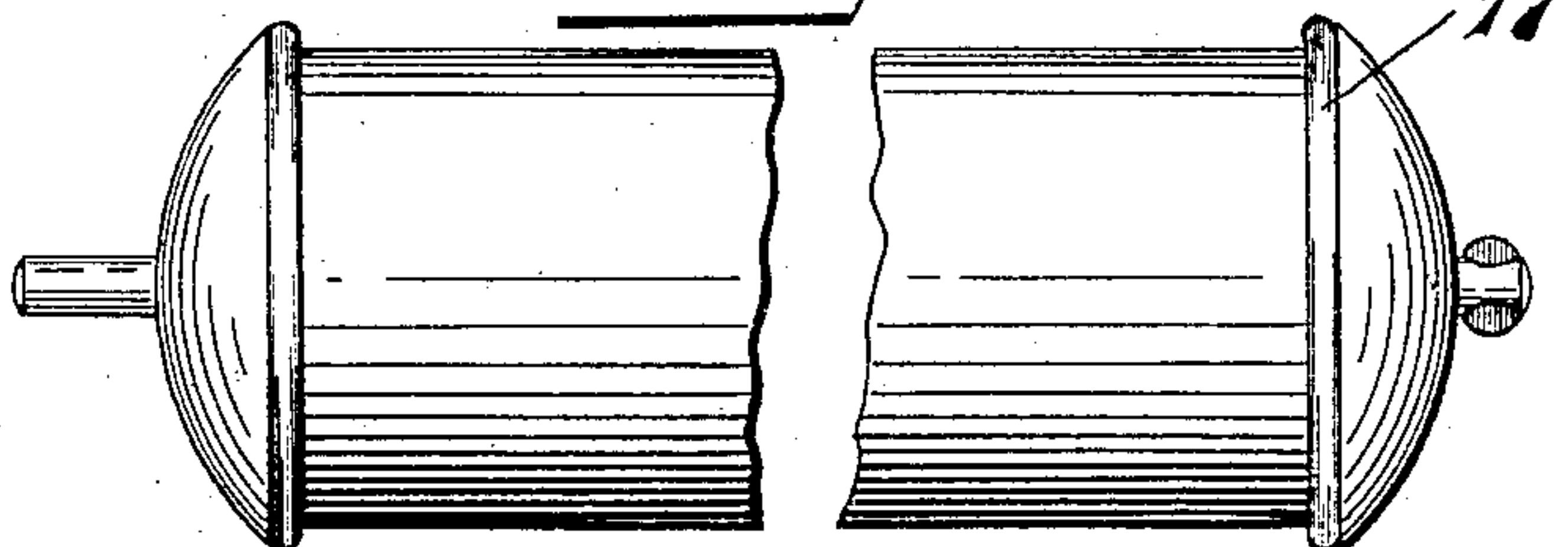


Fig. 9.



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5 SHEETS—SHEET 5.

Fig. 10.

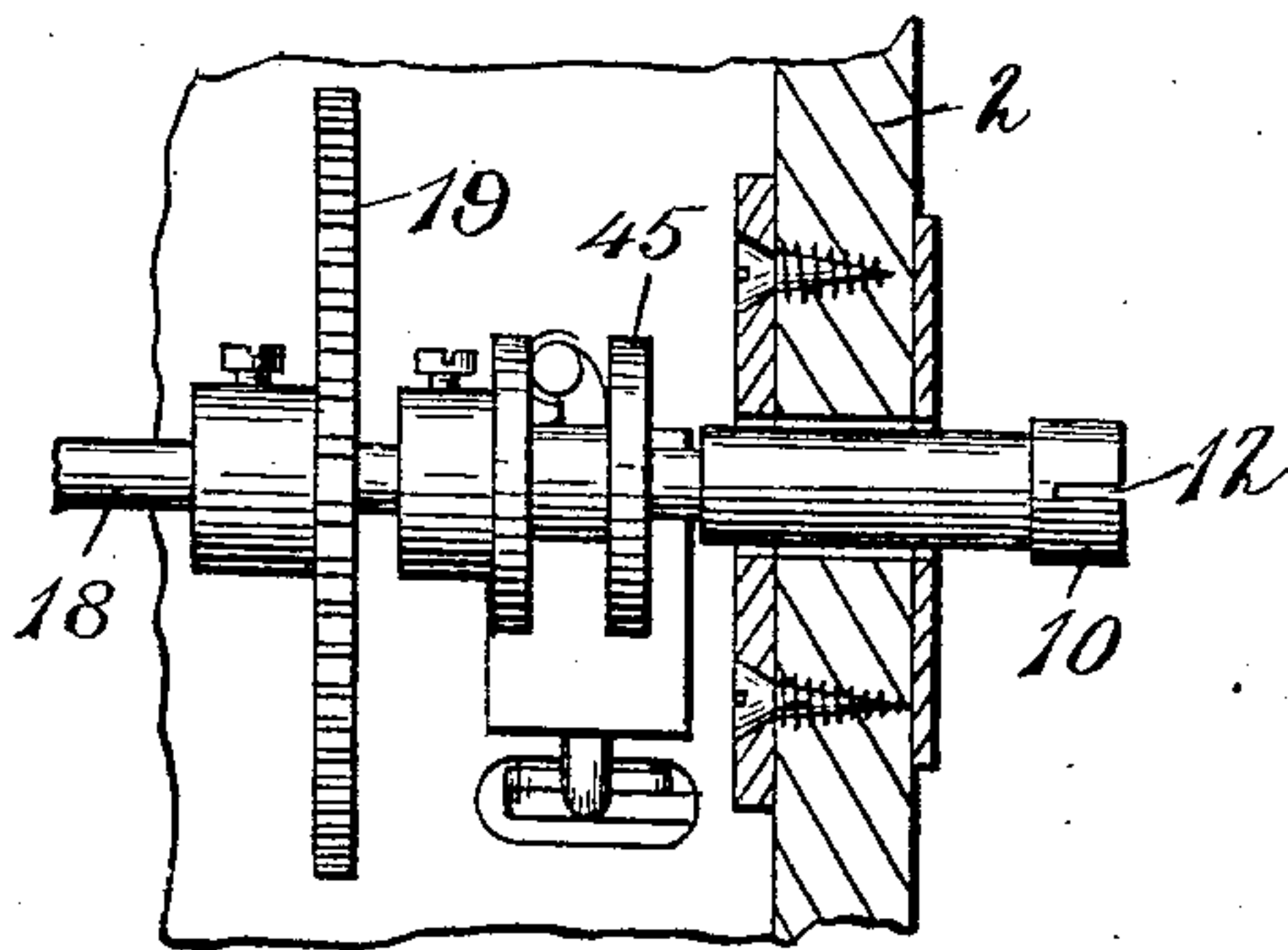


Fig. 11.

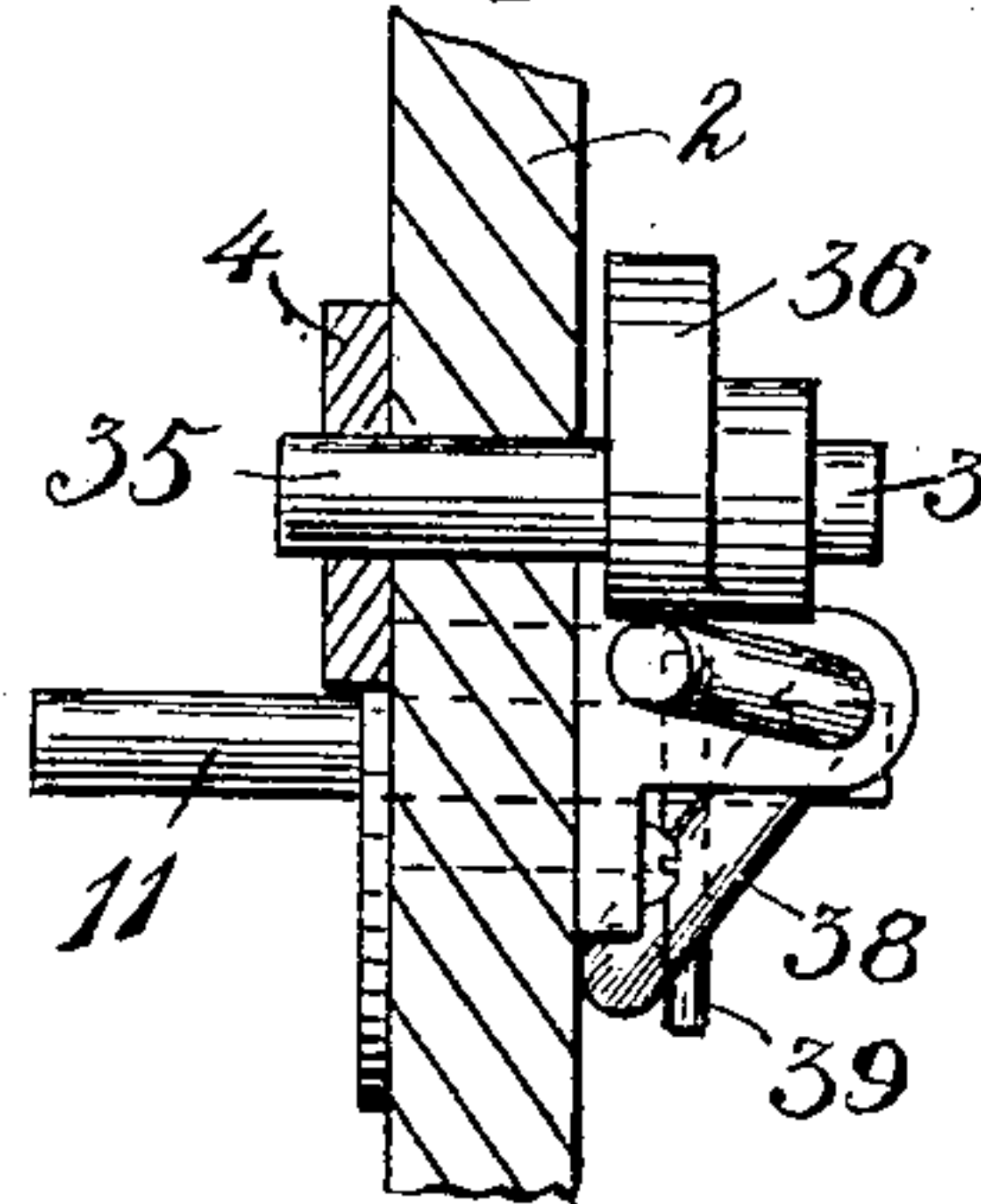
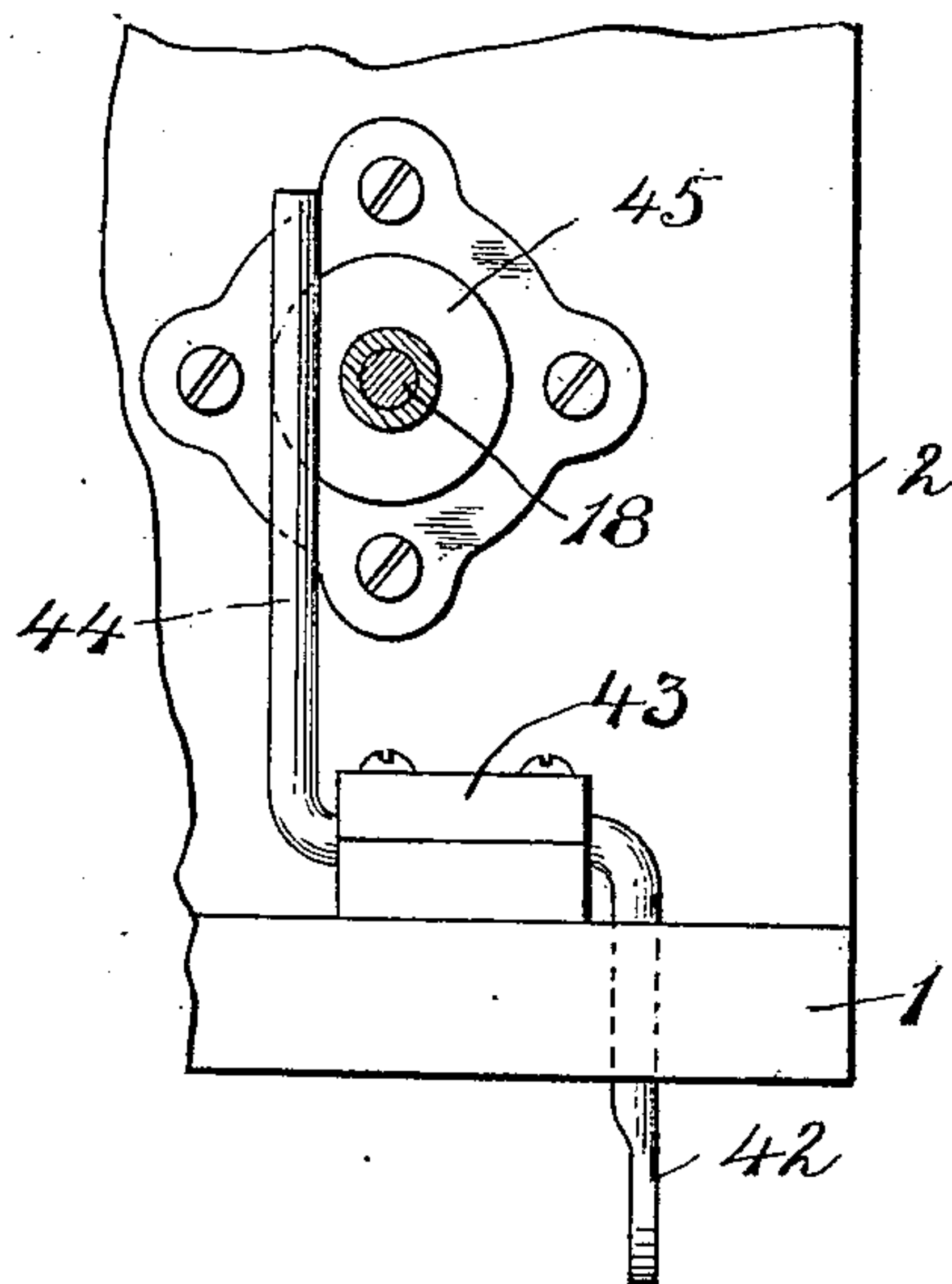


Fig. 12.



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UNITED STATES PATENT OFFICE.

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SWINGING MUSIC-ROLL ACTUATOR.

969,783.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed March 27, 1908. Serial No. 423,649.

To all whom it may concern:

Be it known that I, NELSON D. HOSLEY, a citizen of the United States, residing at Meriden, county of New Haven, State of Connecticut, have invented certain new and useful Improvements in Swinging Music-Roll Actuators, of which the following is a full, clear, and exact description.

My invention relates to improvements in autopneumatic music playing instruments, and is particularly concerned with the provision of means whereby perforated note sheet rolls of different styles may be employed in the same style of instrument.

There is upon the market at the present time a large quantity of perforated note sheet music in roll form on some of which the marking by which expression changes are indicated to the operator, appears upon the outer side of the sheet when rolled up. In other styles of rolls, this marking appears on the inside of the sheet when rolled up. As a consequence of this, it is impossible to use these rolls interchangeably in the same instrument, for the reason that should a roll of the style for which the instrument is not adapted be placed in intended operative position, with the marking visible to the operator, it will be found that the treble side of the sheet will traverse the base side of the tracker board, and vice versa, and if it is attempted to mount the roll with the treble and base sides in proper position with relation to the tracker board, the marking of the sheet will be on the rear side hidden from the operator. It is also true that in some of the music playing instruments of this type now on the market, it is designed that the music sheet shall be driven in one direction across the tracker board, or, as it is said, toward the operator, whereas in the balance of said instruments the music sheet is driven in the opposite direction across the tracker board, or away from the operator. These conditions have also prevented interchangeability of music rolls.

By the invention hereinafter disclosed, interchangeability of the rolls may be readily effected, notwithstanding the difference in marking of the sheets or the difference in their direction of travel across the tracker board.

In the accompanying drawings only such parts of a music playing instrument of the

type referred to have been shown as are necessary to a complete understanding of the invention.

In the drawings, which illustrate one particular form of my invention, Figure 1 is a front elevation broken away at the center. Fig. 2 is a side elevation of the device, looking from the left. Fig. 3 is a sectional view on the line X—X Fig. 1, looking from the right. Fig. 4 is an end view of the device, looking from the right. Fig. 5 is a vertical sectional view on the line X—X Fig. 1, looking from the left. Fig. 6 is a diagrammatic view showing the relative arrangement of the actuating spool and roll and travel of the sheet for one style of roll. Fig. 7 is similar view of corresponding parts of a different style of roll. Fig. 8 illustrates the style of roll employed in the arrangement shown in Fig. 6. Fig. 9 illustrates the style of roll employed in the arrangement shown in Fig. 7. Fig. 10 is a plan view of the pintle shifting mechanism for the left hand lower pintle as shown in Fig. 1. Fig. 11 is a similar view for the right hand lower pintle. Fig. 12 is a side view looking from the left of the pintle shifting mechanism shown in Figs. 1 and 10.

In the particular embodiment of my invention herein selected for illustration, 1 represents a base piece, upon which are mounted the upright supporting frames or side pieces 2—2. Pivoted at 3 between said side pieces is a swinging frame 4, upon which the take-up spool 5 is journaled, whereby said spool may be swung to upper or lower position to operate the different styles of rolls, as hereinafter described. On the same shaft with the said spool is secured an actuating pinion 6 which is adapted to be engaged at the proper times with a driving pinion 7 mounted on the power shaft 8, which in turn is journaled concentrically with the pivots of the spool frame 4, and has its outer end journaled in the bearing support 9 also mounted upon the base piece 1.

Suitably journaled near the lower extremity of the side pieces 2 is a pair of note sheet roll-carrying spindles 10 and 11, said spindles being centrally bored to receive the pintles of the sheet rolls and the spindle 10 having a transverse slot 12 in its head to receive a spline or key upon one of the roll

pintles whereby said roll may be driven from the spindle 10 for the purpose of rewinding the note sheet at the conclusion of the rendering of the piece. A second pair of roll-carrying spindles 13—14 is journaled near the upper extremities of the side pieces 2 and above the pivotal point of the spool-carrying frame 4 for the purpose of accommodating a note sheet roll of different style, it being understood that a note sheet roll of one style is to be mounted in the lower pair of spindles 10—11 and operated across the tracker board 15 (Fig. 1) by the take-up spool 5 when in its upper position, as shown in Figs. 1 and 6, whereas when a note sheet roll of different style is carried by the upper pair of spindles 13—14 said roll is operated across the tracker board 15 by the spool 5 when in its lower position, as indicated diagrammatically in Fig. 7.

For the purpose of actuating the take-up spool 5 through the pinion 7 from the power shaft 8, power may be applied to the latter from any desired source, as for example, the customary electric motor.

It will be observed from an inspection of Fig. 6 of the drawings, that the note sheet upon the roll 16 mounted upon the lower set of spindles, presents its inner side to the operator in its passage across the tracker board 15, the expression markings being arranged upon this side in this particular style of roll, whereas, as illustrated in Fig. 7, the roll 17 operated from the upper set of spindles, presents its outer side to the operator in its passage over the tracker board upon which side the markings are carried with this style of roll. From a brief consideration of the arrangement of the sheets in these two figures, it will be obvious that should it be attempted to shift either of the rolls from its proper pair of carrying spindles to the other pair and still present the expression markings at the front toward the operator, it would be necessary to shift the treble side of the sheet to the base side of the tracker board, and vice versa, hence the impossibility of accommodating both styles of rolls in a single pair of carrying spindles.

To provide for the rewinding of the note sheet upon its holder, for example, that mounted in the lower pair of spindles 10—11, at the conclusion of the rendition of the piece, the shaft 18 (Fig. 1) of one of the lower spindles 10 is provided with a sprocket wheel 19 connected by chain 20 with a sprocket 21 mounted upon a line shaft 22 journaled in bearing supports 23 upon the top 24 of the frame of the device, which shaft is actuated through a sprocket 25 connected by chain 26 with the sprocket 27 loosely mounted upon the power shaft 8 and thrown into driving engagement there-with by shifting the power shaft longitudinally to the left from its actuating position, as shown in Fig. 1, to a position in which the drive pinion 7 will be disengaged with the spool pinion 6, and simultaneously transverse pin 28 upon said shaft will engage the pin 29 secured to the sprocket wheel 27. Under these conditions, the continued rotation of the power shaft 8 will serve to impart direct drive to the lower roll-carrying spindle 10, thereby rewinding the note sheet upon said roll, while at the same time the take-up spool 5 is free to pay out said sheet, since it is disengaged from its driving pinion 7. For the corresponding rewinding actuation of the upper roll-carrying spindle 14, the line shaft 22 is provided at its opposite end with a third sprocket 30, which may be connected by means of a chain 31 with a sprocket 32 upon the shaft 33 of said spindle 14.

To provide for the easy mounting of the rolls within the proper spindles, one spindle of each pair is yieldingly held in its inward or carrying position by means of a spring 34, so that by inserting the roll pintle in this spindle and forcing the latter outward against its spring, the opposite pintle may be inserted in the opposite spindle.

Owing to the fact that the take-up spool 5, when in its lower position shown in Fig. 7 should have sufficient set-back relatively to the tracker-board to cause the note sheet to be drawn firmly against the face of the tracker-board, it is provided that the free end of the spool carrying frame may pass between and to the rear of the lower spindles 10—11 when said frame 4 is being shifted to said lower position. Inasmuch as the length of the roll holders is such that the distance between these spindles 10—11 when in normal inward position is not sufficient to permit the swinging frame 4 to pass between them, it is necessary to provide means for the retraction (preferably automatic) thereof prior to such positioning of said spool-carrying frame 4. To this end the right hand pintle 35 of the swinging frame 4 is securely fixed thereto and adapted to revolve therewith and carries an eccentric disk 36 (Fig. 4) which upon swinging the frame to its lower position actuates the crank rod 37 journaled upon the outside of the right hand side piece 2, as illustrated in Fig. 1, said crank rod having an offset 38 (Fig. 4) which engages a pin 39 projecting from the roll-carrying pintle 11 of the lower pair. A second offset 40 upon said crank arm 37 is connected by means of a rod 41 beneath the base piece 1 (Fig. 1) with a second crank arm 42 at the left hand side of the frame of the apparatus and suitably journaled upon the base at 43, said second crank arm having a member 44 which engages a flanged actuating sleeve 45 secured to the shaft 18 of the op-

posite pintle 10 of the lower pair, whereby upon the swinging of the spool-carrying frame 4 from the upper to the lower position said lower pintles 10 and 11 will be simultaneously longitudinally retracted to receive said frame freely between them and permit it to move to its lower operating position.

In order to hold the spool-carrying frame securely in upper or lower position, spring locking studs 46 are suitably mounted within the base and top members of the frame, which serve to lock the swinging frame against fixed stop pieces 47 also secured to the base and top members of the frame adjacent said spring studs.

What I claim is:

1. In a note sheet winding apparatus, a tracker-board, a plurality of pairs of roll-carrying spindles, a take-up spool and means to shift the position of said spool whereby it may operate note sheets in either direction over said tracker-board during the playing operation.

2. In a note sheet winding apparatus, a plurality of pairs of roll-carrying spindles, a tracker board, a swinging frame, a take-up spool carried thereby, and a power-shaft mounted concentrically with the pivots of said frame and having means for driving said spool in each of its shifted positions.

3. In a note sheet winding apparatus, a plurality of pairs of roll-carrying spindles, a tracker board, a take-up spool operatable in common with any of said pairs, and means for retracting said spindles whereby said spool may be positioned between them.

4. In a note sheet winding apparatus, a plurality of pairs of roll-carrying spindles, a tracker board, a shiftable take-up spool operatable in common with any of said pairs, and means actuated by the shifting of said

spool for retracting said spindles whereby said spool may be positioned between them.

5. In a note sheet winding apparatus, a plurality of pairs of roll carrying spindles, a tracker-board, a shiftable take-up spool, operatable in common with said pairs respectively, and means for locking said spool in each of its shifted positions.

6. In a note sheet winding apparatus, two sets of spindles, driving mechanism therefor, each set including a spindle common to both sets, a shiftable take-up spool, and means for connecting and disconnecting the driving mechanism of certain of said spindles whereby they may be used interchangeably as roll carrying or take-up spindles with a music roll or said shiftable take-up spool.

7. In a note sheet winding apparatus, two sets of driving spindles, each set including a spindle common to both sets, a driving shaft, with means to put said shaft in driving engagement with any one of said spindles, and a shiftable take-up spool arranged to be shifted from one of said spindles to another.

8. In a note sheet winding apparatus, a tracker-board, a single driving shaft, two sets of spindles actuated thereby, each set including a spindle common to both sets, a take-up spool adapted to be shifted to operate with either set to draw said sheet across the tracker-board, and means connecting said spindles with said shaft, including clutch devices arranged to couple one or the other spindle of each set with the driving shaft, the other spindle in each set being free of driving engagement with said driving shaft at such time.

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