

No. 681,765.

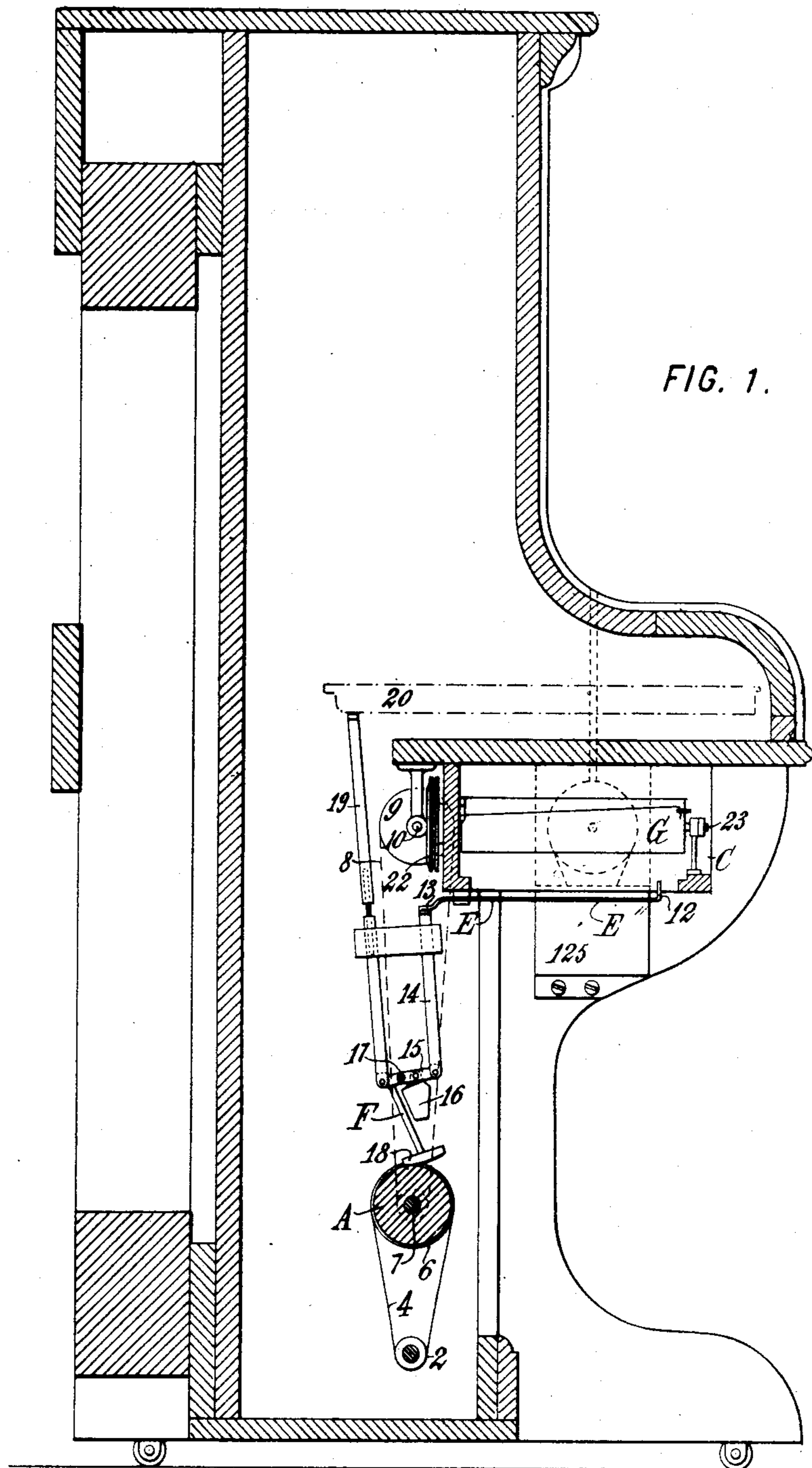
Patented Sept. 3, 1901.

J. A. WESER.
COIN CONTROLLED APPARATUS.

(Application filed Nov. 8, 1898.)

(No Model.)

6 Sheets—Sheet 1.



WITNESSES:

Ired White
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6 Sheets—Sheet 2.

(No Model.)

FIG. 3.

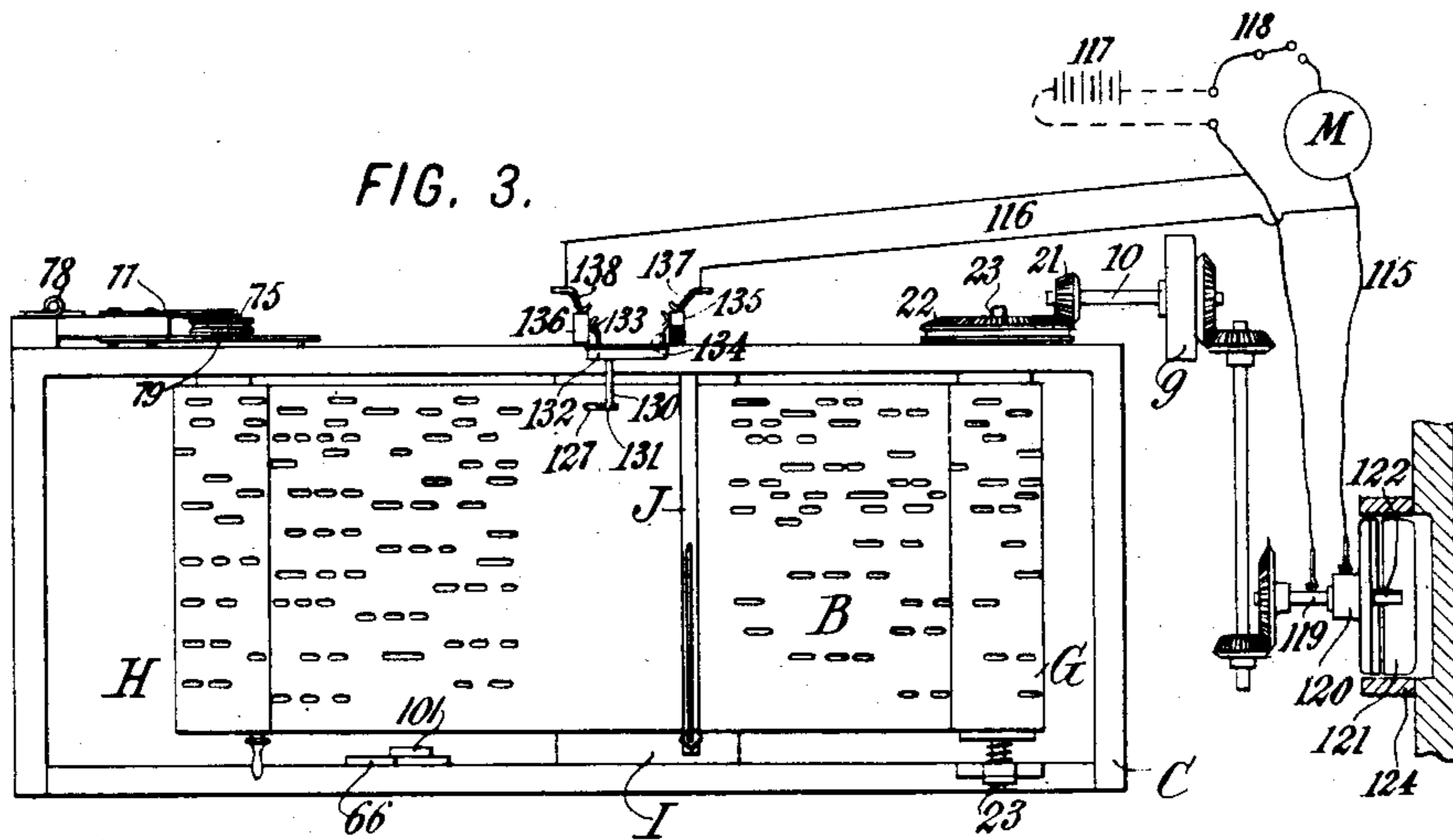
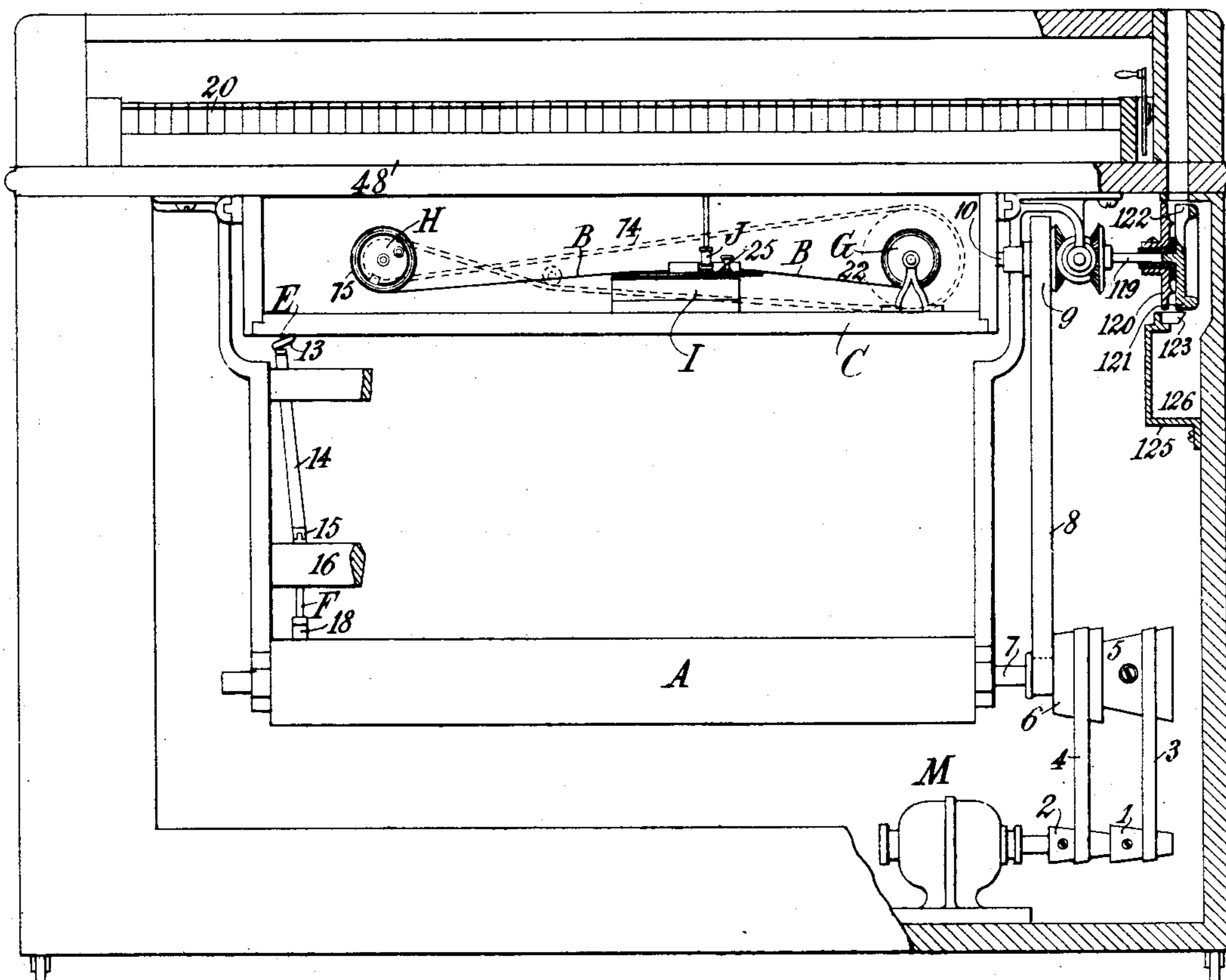


FIG. 2.



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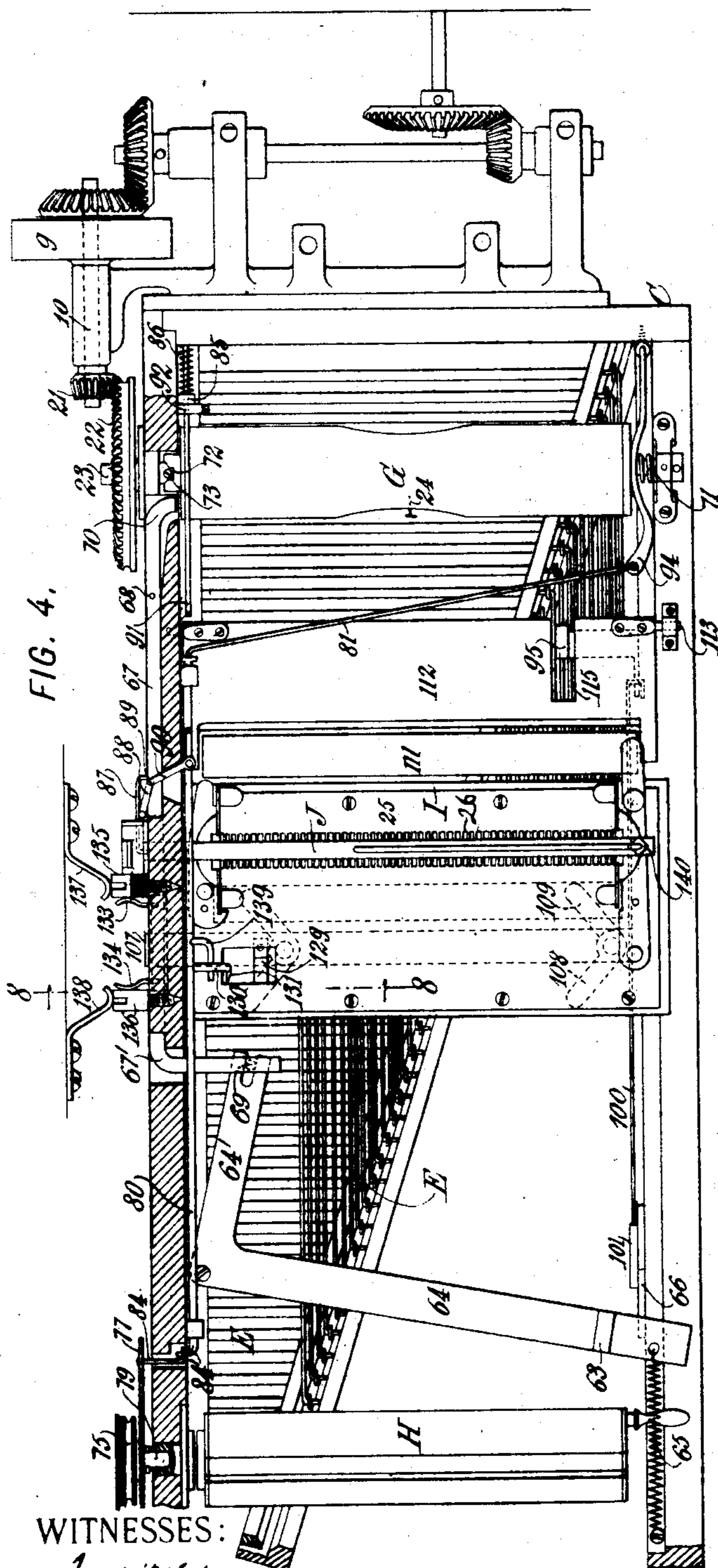
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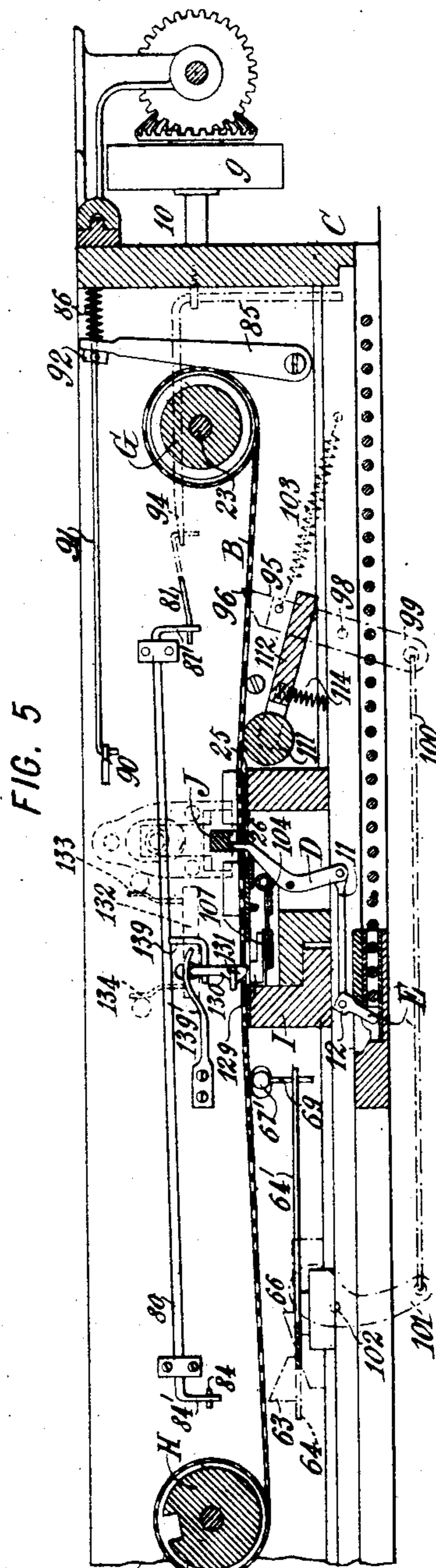
(No Model.)

6 Sheets—Sheet 3.



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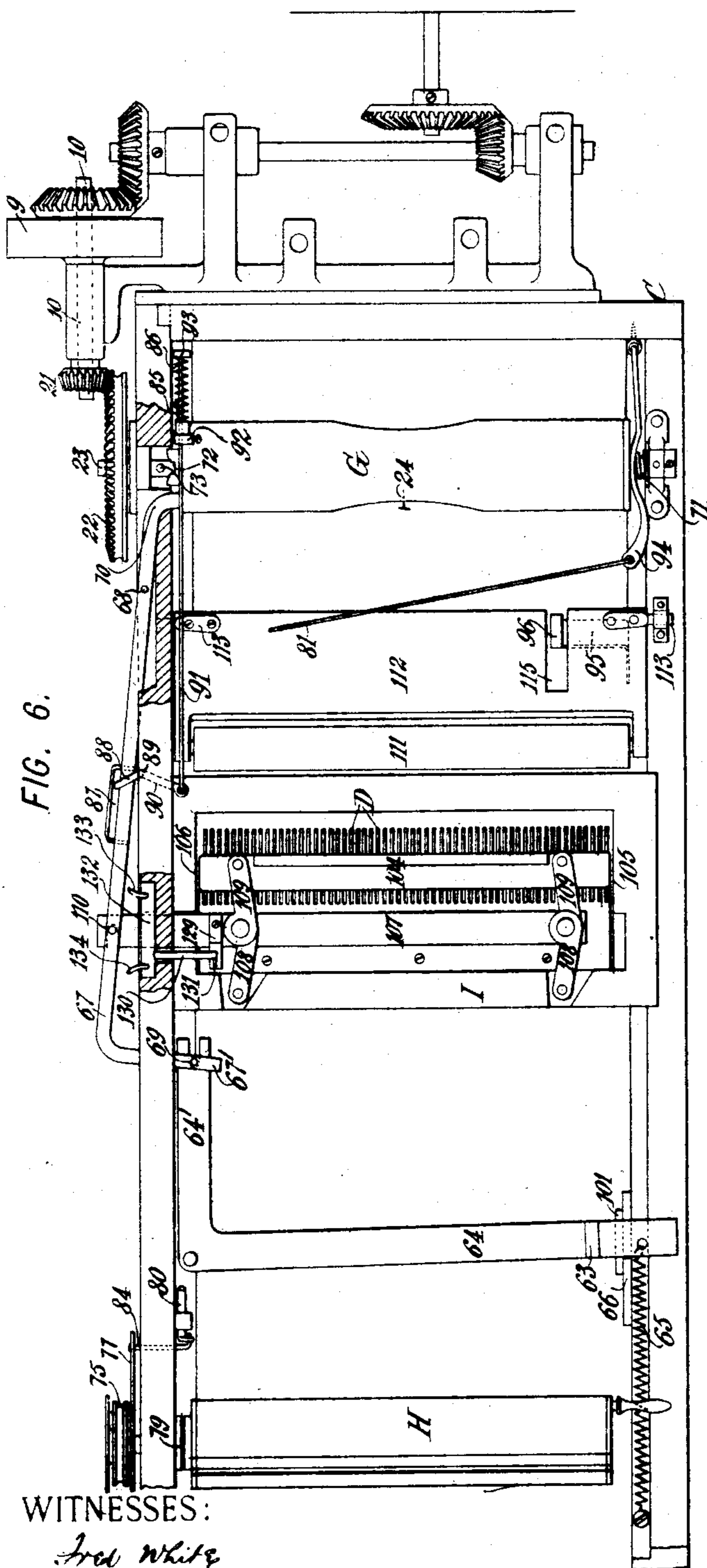
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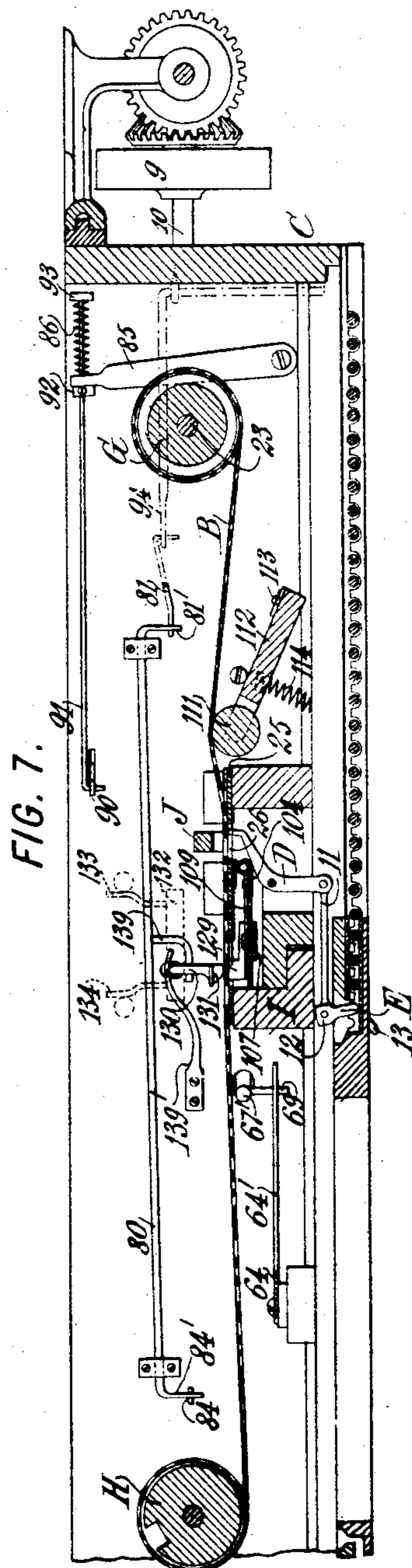
(No Model.)

6 Sheets—Sheet 4.



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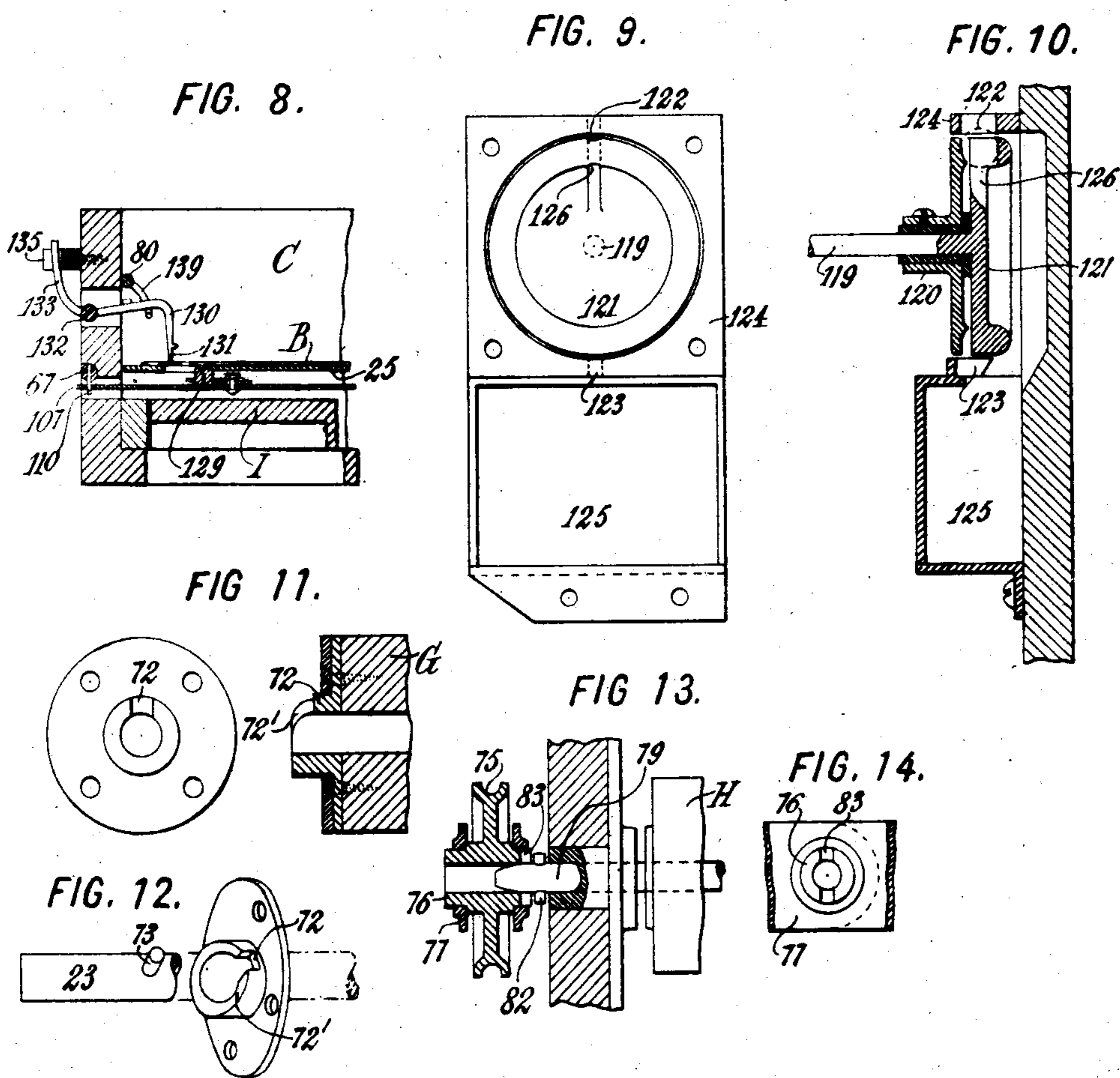
Patented Sept. 3, 1901.

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COIN CONTROLLED APPARATUS.

(Application filed Nov. 8, 1898.)

(No Model.)

6 Sheets—Sheet 5.



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(Application filed Nov. 8, 1898.)

(No Model.)

6 Sheets—Sheet 6.

FIG. 15.

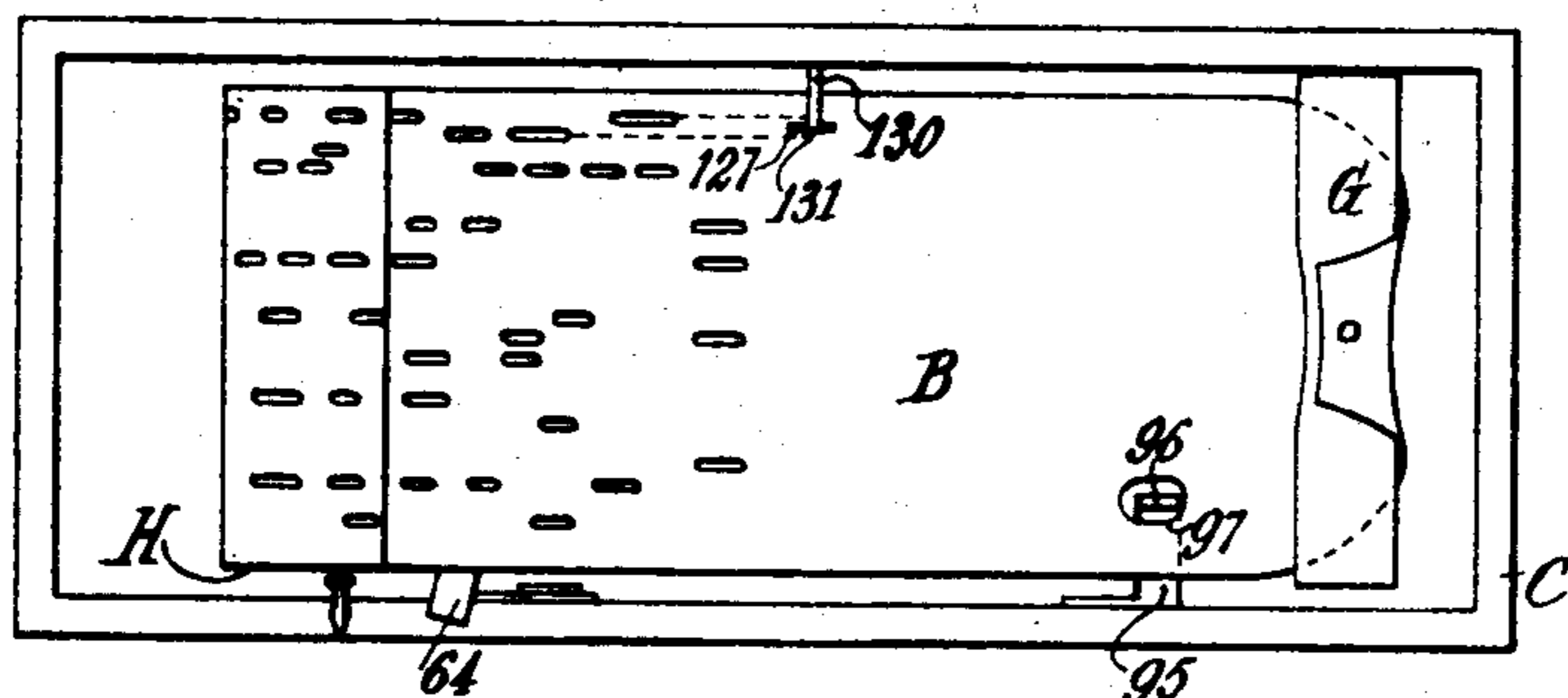


FIG. 16.

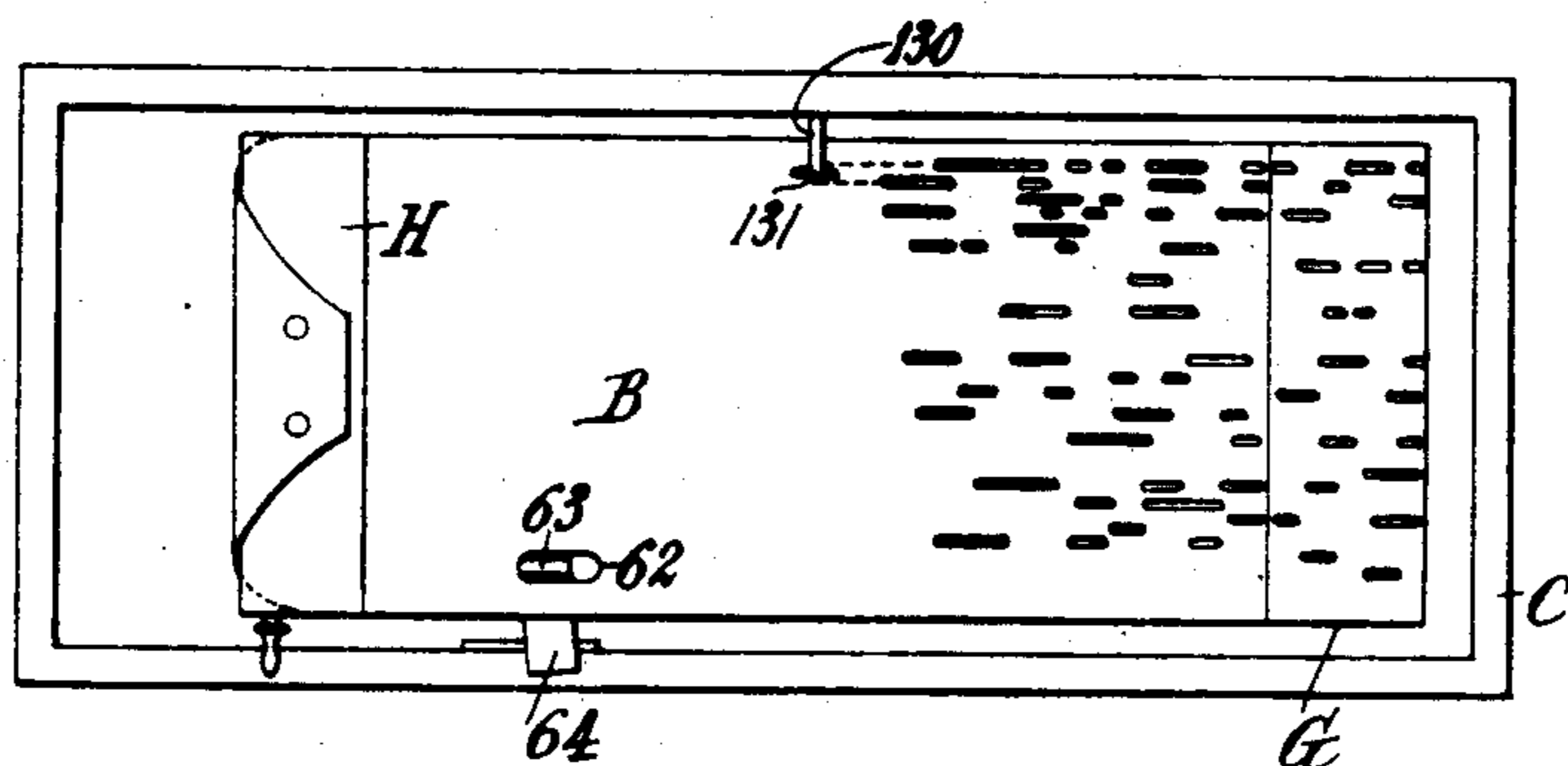
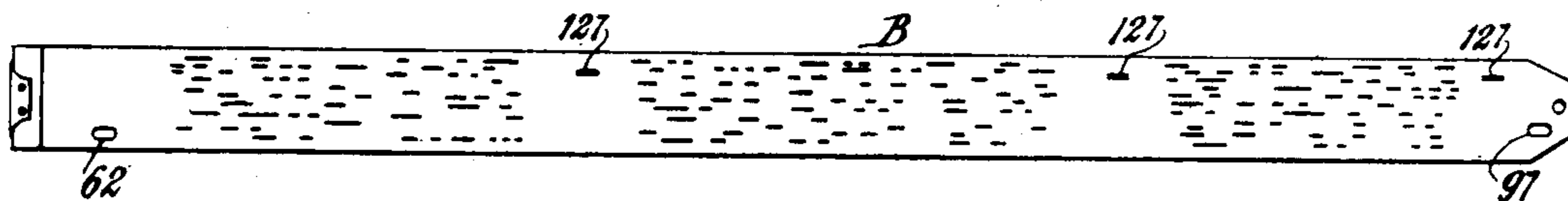


FIG. 17.



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UNITED STATES PATENT OFFICE.

JOHN A. WESER, OF NEW YORK, N. Y.

COIN-CONTROLLED APPARATUS.

SPECIFICATION forming part of Letters Patent No. 681,765, dated September 3, 1901.

Original application filed April 26, 1898; Serial No. 678,832. Divided and this application filed November 8, 1898. Serial No. 695,870. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. WESER, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Coin-Controlled Apparatus, of which the following is a specification.

This application is a division of my application, Serial No. 678,832, filed April 26, 1898. This invention relates to coin-controlled apparatus generally; but it is especially applicable to automatic musical instruments—such, for example, as are adapted to be played by the passage of a perforated sheet over a series of fingers or air-valves or electrical contacts, as automatic pianofortes. The invention provides certain improvements in such apparatus, the nature of which improvements will be hereinafter fully set forth as applied to the improved automatic piano claimed in my said application.

Figure 1 of the accompanying drawings is a vertical section of an upright-pianoforte casing, showing certain portions of the automatic mechanism. Fig. 2 is a front elevation of the lower portion of the pianoforte shown in Fig. 1, partially broken away and showing certain parts in section. Fig. 3 is a plan of the drawer containing the music-sheet and showing diagrammatically its mechanical and electrical connections. Fig. 4 is a plan in horizontal section, on a larger scale, of the drawer for the music-sheet, showing the position of the parts during the playing of a piece of music. Fig. 5 is a longitudinal section thereof. Fig. 6 is a plan similar to Fig. 4, but in section on a different plane and showing the position of the parts while the sheet is being rewound preparatory to replaying. Fig. 7 is a longitudinal section of Fig. 6. Fig. 8 is a fragmentary vertical section of the drawer on the line 8 8 of Fig. 4. Figs. 9 and 10 are respectively a face and sectional view of the coin-controlled device for starting the instrument. Fig. 11 comprises a face and sectional view, and Fig. 12 a perspective view, of certain clutch details. Fig. 13 is a detail cross-section of part of the rewinding mechanism, Fig. 14 being a rear elevation of part thereof. Fig. 15 is a diagrammatic plan of the drawer, showing the sheet at the end

of the rewinding movement; and Fig. 16 is a similar view, but showing the sheet at the end of the winding movement. Fig. 17 is a plan view of the preferred embodiment of my improved music-sheet.

Referring first to Figs. 2 and 3, let M designate an electromotor, which, however, may be substituted by any other motor or source of power for driving the mechanism. On its shaft is carried a pulley 1, which by a belt 3 drives a pulley 5. Pulley 5 is fixed on a shaft 7, on which is fixed the main roller or motor-cylinder A of the movement. Another pulley 2 by a belt 4 drives a pulley 6, which is connected by a belt 8 to a pulley 9 on a shaft 10 above, which drives the music-sheet, as will be presently described.

I will briefly describe the action, which is now so well understood with regard to what are called "automaton" or "automatic" pianofortes as to require no detailed explanation. The music-sheet B is wound off from a roller H onto a roller G, these rollers being mounted near opposite ends of a drawer C, which normally occupies the position shown in Fig. 1, but which can be drawn out from beneath the keyboard to gain access to its interior for removing or replacing the sheet. The sheet is formed with rows of perforations, each row corresponding to one of the keys of the piano. The sheet is caused to travel over a series of pivoted fingers D, Fig. 5, the upper ends of which press upwardly against the sheet, and whenever a hole comes over a finger it rises through the sheet to the position shown in Fig. 5. Each finger is a lever the lower arm of which connects by a rod 11 to the upper arm 12 of one of a series of rock-shafts E E, which shafts extend transversely and at their rear ends are bent into cranks 13, projecting beyond the rear of the drawer, as shown in Fig. 1, and lying when the drawer is in place respectively over the ends of a series of nearly-vertical pins 14. The lower ends of these pins 14 are connected to levers 15, pivoted on a bar 16, the opposite arm of each lever being pivoted at 17 to one of a series of shoes F, which has a felt-covered arc-shaped friction-face 18 standing normally just above the continuously-revolving motor-cylinder A. The rising of the finger

D through a perforation in the music-sheet causes an upward movement of the rod 14 and tilts the lever 15, so as to throw the pivotal center 17, on which the shoe F is mounted, downward sufficiently to press the friction-face of the shoe against the cylinder A, so that this face engages with the cylinder, and the shoe is consequently thrust forcibly backward, so that it strikes an upward blow through a striker-pin 19 against the corresponding key 20 (shown in dotted lines in Fig. 1) of the keyboard of the piano. The shoe holds its displaced position, thereby holding the key displaced until the end of the perforation in the music-sheet presses down the finger D, and thereby lowers the pin 14 and lifts the shoe-center 17 sufficiently to bring the shoe out of contact with the motor-cylinder, whereupon the shoe swings forward again and the key 20 descends.

The music-sheet is preferably driven in the following manner: The continuously-revolving shaft 10, which turns in fixed bearings, carries a beveled pinion 21, which meshes with a bevel-gear 22, fixed on a transverse shaft 23, having bearings in the drawer, and on which shaft is carried the winding-on roller G. The gear 23 of course moves with the drawer when the latter is pulled out, so that it loses mesh with the pinion 21, but re-enters into mesh therewith when the drawer is pushed back. The music-sheet is rolled on a winding-off roller H, and its advancing end is carried to the roller G and connected thereto by any suitable means, as by hooking it over a pin 24 thereon. The sheet passes over a raised portion or block I, in which the series of fingers D D work, the top of the block being covered over by a comb-plate 25, this comb-plate having slots 26 26, through which the finger ends work. Directly over these fingers the sheet is held down by the usual presser-bar or comb-bar J, which is notched on its under side to permit the fingers D to rise up into it through the perforations in the sheet. To enable the sheet to be automatically rewound and restored into position after playing a piece of music, so that the instrument is automatically placed in position for replaying and can at once start or be started to again play the same piece, I prefer to provide the music-sheet with a "stop," as a hole or other means 62, Fig. 16, breaking the regularity of the sheet near its end, which at the end of the piece of music is engaged by a projection 63 on a stop-lever 64, which projection enters the hole and is carried along thereby with the sheet against the tension of the spring 65, Fig. 6, until the lever is carried to the position shown in Fig. 6, where it becomes caught on a stop 66 and its return thereby prevented. This lever 64 I utilize to stop the mechanism through any suitable means. Preferably I utilize this lever to stop not only the forward movement of the music, but to start a backward or re-

winding movement. To this end the lever 64 is made as an elbow-lever, its arm 64' engaging with a lever 67, which is pivoted at 68. As shown, the lever 67 lies at the rear of the back board of the drawer, working partly in a groove therein, while its end 67' projects forwardly through this board and has a pin 69 projecting down through a slot or fork in the arm 64'. The opposite arm 70 of this lever comes against the end of the winding-on roller G. This roller is loose on its spindle 23 and is pressed rearwardly by a spring 71, so that a notch 72 in its rear hub is kept normally in engagement with a pin 73, projecting from the shaft 23, such being the condition while the sheet is being propelled forward, as shown in Fig. 4. When the stop-lever 64 is displaced to the position shown in Fig. 6, the lever 67 is thrown out, as shown in that figure, and its end 70 presses the roller G forward sufficiently to disengage its notch 72 from the pin 73, as shown in Fig. 6, so that while the shaft 23 continues to revolve forward the roller G stops, and consequently ceases to propel the music-sheet. Thus the action of the stop-lever 64 insures the stopping of the sheet at the end of the tune.

For rewinding the sheet the following-described mechanism is preferably provided: From the bevel-gear 22, which is peripherally grooved to form a belt-pulley, a belt 74 is extended to a grooved pulley 75, fixed on a short tubular spindle 76, Fig. 13, which spindle has bearings in a forked frame 77, which is pivoted on a hinge or other pivot at 78, Fig. 3, the pivotal axis being to the rear of the center of the belt, so that the belt tension serves to keep the spindle 76 pressed forwardly. This spindle engages through a suitable clutch with a shaft 79, which passes through the back board of the drawer and carries on the front side of this board the winding-off roller H. The clutch connection between the spindle 76 and shaft 79 is shown as consisting of diametrical pins or projections 82 on the shaft, entering into notches 83 in the spindle, the construction being best shown in detail in Fig. 13. The tension of the belt 74 presses the spindle 76 constantly forward and seeks to engage the clutch; but normally this engagement is prevented by means of a small link 84, Fig. 4. The connecting mechanism, including belt 74, pulley 75, spindle 76, and shaft 79, serves when the said clutch is engaged for imparting backward rotation to the winding-off roller H for winding the music-sheet back onto this roller. These parts, however, are controlled as will be now explained. Fig. 4 shows the normal positions of the parts during the playing of a piece. When the stop-lever 64 is pulled over to the position shown in Fig. 6, it acts through the lever 67 to press forward the roller G and disconnect its clutch 73 72, as already explained. As soon as the pin 73 escapes from the clutch 72 it rides up an incline 72' at the side of this notch, this conformation being best shown in Figs.

11 and 12. Thereby the pin acts to push the roller G farther forward than it has been moved by the lever-arm 70, and as soon as it is thus fully displaced a retaining-lever 85, Fig. 5, moves in behind it under the tension of a spring 86, and thus prevents the roller G being pressed back by its own spring 71. The lever 85 is shown thus engaged in Fig. 7. The lever 67 is formed with a slot 87 or otherwise provided for engagement with a crank-arm 88, formed on the lower end of an upright shaft 89, the upper end of which is turned horizontally to form an arm 90, which projects through a slot in the back board, and its end is pivotally connected to a rod 91, which extends to the right, passes through the upper end of the retaining-lever 85, being provided with a collar 92 on one side of this lever and with a head or shoulder 93 at its end on the other side of the lever, so that between the latter collar and the lever the spring 86 is confined. The initial movement of the stop-lever 64, carrying with it the lever 67, acts through the shaft 89 and rod 91 to compress the spring 86, and thereby presses the retaining-lever 85 toward the end of the roller G, so that it is prepared to enter behind this roller when the latter is displaced in the manner just described. Another lever-arm 94 connects through another rod 81 with one arm 81' with a lever 80, which extends along the front side of the rear wall of the drawer to near the roller G. The lever 94 is fulcrumed to the end wall of the drawer and bears against the front end of the roller G, being swung with the outward movement given to this roller by the lever 67 serves to disengage the clutch 72 73, but does not swing the lever 94 sufficiently to cause the link 84 to swing the frame 77 sufficiently to engage the clutch 82 83; but upon the disengagement of the clutch 72 73 the continued revolution of the shaft 23 causes the roller G to move farther forward as the pin 73 rides up the cam-face 72'. This forward movement swings the lever 94, and through it the lever 80 and link 84, sufficiently to throw the frame 77 forward until the clutch 82 83 engages, whereupon the rotation of the roller H for rewinding the sheet commences. As soon as the roller G has been pushed outwardly for the stop-lever 85 to engage it the roller is held in its outward position, and thereby holds the levers 94 and 80 in position for retaining engagement between the rewinding roller H and its clutch throughout the rewinding operation. It is necessary to stop this rewinding operation before the front end of the sheet shall have been pulled off from the roller G, as otherwise the sheet might be torn, and in any event it is desirable to leave the sheet still engaged to the roller G, so that the same musical selection can be played over again without reengaging the sheet. For thus stopping the sheet on this rewinding movement a secondary stop-lever 95 is provided, the beveled upper end

or projection 96 of which is adapted to be caught in a stop, as a hole or other means 97, breaking the regularity of the sheet, which is formed near the front end of the music-sheet in the position shown in Fig. 15, so that the backward movement of the sheet displaces this lever from the position shown in Fig. 5 for a short distance. This lever is pivoted at 98, and its lower arm 99 is connected by a rod 100 to a throw-off lever 101, as shown in Figs. 5 and 4, which latter is pivoted at 102, and its upper arm is made of cam shape, as shown, or in any suitable way, so as to engage beneath the end of the stop-lever 64 and lift it off the catch projection 66, so as to permit it to be pulled back by its spring 65 to its normal position, as shown in Fig. 4. The stop-lever 95 is retracted by a spring 103, Fig. 5. In thus moving back the stop-lever 64 restores the lever 67 to its initial position, and the latter, acting through the upright shaft 89, moves the rod 91 to the right, and thereby throws the lever 85 out from behind the roller G, permitting the latter to roll rearwardly under the tension of its spring 71, which movement permits the levers 94 and 80 to swing rearwardly, in doing which the link 84 throws the frame 77 backward until the clutch 82 83 is disengaged, thus stopping the rewinding operation. The spring 71 presses the roller G backward until its clutch 72 73 engages, whereupon the continued revolution of the shaft 23 is transmitted to the roller G and the latter starts to again draw the sheet forward and again becomes the winding-on roller. This would repeat the playing of the piece of music; but if this is not desired means are provided, which are hereinafter described, for preventing this result. It is obvious that before the music-sheet can be caused to move backward all the fingers D D must be pressed down so that their tips shall be beneath the bottom surface of the sheet or be otherwise guarded in order that the fingers shall not catch in the perforations of the sheet and tear it. To prevent this, I provide means for depressing all of the fingers coincidently with the stopping of the sheet in connection with the stop-lever 64. A depressing-plate 104 is mounted to work in the block I just over the series of fingers D D in the manner best shown in Fig. 6, in which figure the comb-plate 25 is removed. The depressing-plate 104 is given a parallel movement to right or left, being guided at its ends between upright walls 105 106 at the front and rear of the block I and being actuated by a parallel-motion device consisting of a longitudinal bar 107, connected by parallel links 108 109 at front and rear with the depressing-plate 104 on the one hand and with fixed pivotal points attached to the block I on the other hand. The bar 107 projects out through the rear board and is connected with the lever 67 in any suitable way—as, for example, by means of a pin 110, projecting downward from this lever and enter-

ing a hole or slot in the bar. During the normal operation or while playing a piece of music the bar 107 is pushed forward, so that the parallel links are buckled, as shown in dotted lines in Fig. 4, and the depressing-plate 104 is consequently retracted, so that the fingers D can rise up through the perforations in the paper; but when the stop-lever 64 is moved the backward thrust imparted to the lever 67 carries the bar 107 with it and straightens the parallel links so as to move the plate 104 to the right, so that it engages and presses down the entire series of fingers D D to the positions shown in Fig. 7, where their tips are held below the bottom surface of the sheet. In order to properly guide the music-sheet onto the comb-plate during the rewinding operation, I provide a guide-roller 111, arranged close to the block I, preferably capable of moving up and down and having upward tension applied to it, so that it serves to lift the moving sheet over the edge of the block and even over the tips of the fingers D D, if these are not pressed fully down. In the construction shown the roller is mounted in a plate or board 112, which is pivoted at 113 to the front and rear boards of the drawer and is pressed up by a spring 114. It is notched at 115' to admit the end of the stop-lever 95.

I will now describe my invention of improved means for controlling the operation of the instrument which are especially adapted for what are known as "coin-controlled" instruments or those which upon the insertion of a prescribed coin will play one or more tunes and then stop until another coin is inserted. The instrument, being driven by an electromotor, is most conveniently controlled electrically. To this end I have adopted the arrangement of electric circuits shown in diagram in Fig. 3, where M designates the electromotor, and 115 116 are two branches of an electric circuit the undivided portion of which includes the electromotor and also a battery or other source of electric energy 117, (connection with a dynamo-circuit being usually made in lieu of the battery,) and in the undivided portion of the same is a circuit-breaker or hand-operated switch 118. The circuit branch 115 is used for starting the instrument upon the deposit of a coin. In this end one of the wires of this branch terminates in electric connection with a spindle 119 and the other with the hub of a disk 120, a similar disk 121 being mounted on the spindle 119, the arrangement being best shown in Figs. 9 and 10. The spindle 119 is connected through suitable gearing, in the manner shown in Fig. 3 and also in Fig. 6, with the feed-shaft 10, so that it is driven whenever this feed-shaft revolves, although at a slower speed. In the top of the two disks 120 121 are formed coinciding notches, which together constitute a coin-slot 122. (Shown in plan in Fig. 3.) Upon the dropping of a prescribed coin through a conduit, so that it enters into

this slot, it rests there, forming a metallic bridge between the disks 120 and 121, and thereby closes the circuit branch 115. Assuming the switch 118 to have been first closed, this starts the motor and starts the instrument playing. The rotation of the spindle 119 soon carries the disks around until the coin reaches a position on the lower side, whence it drops out through a notch 123 in an annular casing 124, which encircles the disks. The coin falls into a box 125. If too small a coin were inserted, it would not be caught in the slot 122, but would fall directly through between the disks and descending through a passage 126 would be discharged into the same coin-box 125, but would not start the instrument. As the coin serves to hold the circuit closed only during a partial revolution of the spindle 119, it is necessary to provide other means for retaining the circuit closed after the instrument has started and until it shall have completed the playing of one tune or for other predetermined time. This I accomplish by closing the branch circuit 116 immediately after the starting of the music-sheet.

A music-sheet adapted for playing three successive tunes is shown in Fig. 17, and has, in addition to the stopping-holes 62 and 97, already explained, additional stopping-holes 127 immediately preceding each tune. These holes coact with a circuit-closer, which I will now explain.

A stop-lever 130, as shown in Fig. 8, is arranged to press on the music-sheet, being formed with a rounded or beveled foot 131. The lever projects from a rock-shaft 132, which may be incased in a groove in the back board of the drawer and which has on the rear side thereof two projecting spring arms or fingers 133 and 134, which as the shaft rocks rub against two contact studs or pins 135 and 136. The stud 135 has its front half made of insulating material. Both studs when the drawer is pushed fully back make contact with springs 137 138, respectively, which springs form the terminals of the branch circuit 116, as shown in Fig. 3. A spring 139' presses down the lever 130; but the music-sheet ordinarily holds the lever up, so that the spring-arm makes contact with the metallic part of the post 135, and hence maintains complete circuit connection from spring 138 through post 136, spring-arm 134, rock-shaft 132, spring-arm 133, post 135, to contact-spring 137; but when one of the stop-holes 127 in the music-sheet, Fig. 17, comes under the rounded foot 131 of the stop-lever this foot drops into the hole, and thereby moves the switch-arm 133 onto the insulated part of the post 135 and breaks the circuit, and consequently stops the instrument. The instrument will not again start until another coin is deposited, which again closes the circuit through the branch 115 and holds it closed long enough for the movement of the music-sheet to carry the hole 127 beyond the foot

131, so that the margin of the hole by engaging the inclined surface of the foot lifts the latter, and thereby displaces the lever 130 and carries the arm 133 onto the metallic part of the post 135, which closes the circuit through the branch 116, this branch being maintained closed throughout the playing of one tune until the next hole 127 comes underneath the foot 131 and the latter drops into it and again stops the instrument. When the last tune upon the music-sheet has been played, the instrument continues to run until by the action of the stop-hole 62 the stop and reversing mechanism has been thrown into action and until the entire rewinding movement has been performed, so as to wind back the music-sheet onto the roller H. The stoppage of the instrument by the dropping of the foot 131 into the stop-holes 127 during this return movement is prevented by the provision of a block 129, Fig. 8, which is mounted on the parallel bar 107 in such position that when this bar is displaced, as in Fig. 6, during the rewinding operation this block comes under the foot 131 and prevents the latter dropping into the holes 127 in the music-sheet. When, however, the sheet has been fully rewound and the stop-hole 97 has acted on the stop-lever 95 to stop the rewinding, the motion shifts, as already explained, and the block 129 is thereby moved out of line with the stop-holes 127. Thereupon the instrument starts to wind the sheet forward for playing a tune; but before any of the note-perforations begin to act the first stop-hole 127 comes under the foot 131, which thereupon drops into the hole and breaks the circuit and stops the operation until another coin is deposited.

One feature of improvement consists in placing the stop-holes 127 in positions on the sheet where they will not be accessible to the ordinary key-fingers D, so that no notes will be struck by reason of the passage of the stop-holes over the fingers. This is preferably accomplished by making the holes at a point between two adjacent fingers and making them so narrow that they will not be accessible to either finger. Accordingly the foot 131 is made particularly narrow and is located at a point intermediate of that occupied by two adjacent fingers. It is desirable that a snap-switch or quick movement for making and breaking the circuit at the post 135 should be employed. Any suitable or convenient device will suffice for this purpose. I prefer to obtain a quick cut-out by bringing the foot 131 nearly to a point, so that its fall into the holes 127 will be sudden. It is shown as, nevertheless, being slightly rounded on its right edge to avoid catching on the sheet during rewinding in case it should fail to be held sufficiently above the latter to avoid this. Another feature of improvement comprises a special means for holding the foot 131 in the inactive position during rewinding. This is

shown as consisting of an arm 139 on the lever 80, which arm is tilted upwardly when the lever is thrown toward the position for permitting rewinding, the end of the arm taking under the arm 130 and sustaining the latter and with it the foot 131 as long as the lever 80 remains so thrown and rewinding progresses. The depression of the fingers D to permit rewinding has the effect of tilting the levers E until the shoes 18 are all lifted out of engagement with the cylinder A, thus preventing operation of the shoes by the cylinder during the rewinding, and consequently avoiding the striking of any notes without necessitating stoppage of the motor during rewinding of the music-sheet.

In operation the instrument may be used as an ordinary automatic piano, or it may be permitted to operate continuously, according to its automatic features, or it may be operated solely as a coin-controlled instrument, as desired. For coin-controlled operation one piece at a time will be played if the sheet contains more than one tune, operation stopping between tunes until again started by the insertion of a coin and the rewinding operation taking place only after the last tune has been played and then restoring the sheet to position for playing the first tune. When coin control is not desired, the coin branch 115 of the circuit will be dispensed with and the automatic stop 130 may be thrown out of action.

It will be seen that so far as my present invention is concerned the sheet B constitutes, essentially, an intermittently-movable surface, its perforations being recesses or pockets successively presented at a predetermined point, the driving mechanism being adapted to move the sheet under control of the coin-operated means and the stopping mechanism constituting means for automatically stopping movement of the sheet at predetermined positions, and that so far as these general principles of construction and operation are concerned any suitable or desired construction of parts capable of operating in substantially the manner described can be employed without departing from the spirit of my invention, the invention not being limited to use with the particular features of improvement set forth in my said application nor to any particular character of instrument or apparatus, the instrument to which the invention is shown as being applied being taken as an example of one of many classes of instruments to which my improvements are applicable.

It will be seen that my invention provides improvements in coin-operated or coin-controlled apparatus wherein an intermittent predetermined forward movement of a surface can be obtained upon the insertion of a prescribed coin and that by my improvements a reverse movement of the surface to a predetermined extent may also be secured

when desired, both these features being of great advantage and generally utilizable in coin-controlled devices.

By the term "music-sheet" as herein used it is intended to include any character of sheet adapted to control the operation of a musical or similar instrument or to perform any function equivalent to that of the perforated sheet described irrespective of whether or not the sheet is actually perforated.

I claim as my invention—

1. A coin-controlled musical instrument, comprising a traveling sheet, means operated by such sheet for producing musical selections, a motor for moving the sheet, means operated by a coin for starting the forward feed of the sheet, and means controlled by the sheet for prolonging its forward feed.

2. A coin-controlled musical instrument, comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, means controlled by the sheet for prolonging its forward feed, and means controlled by the sheet for stopping its forward movement.

3. A coin-controlled musical instrument, comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, and means controlled by the sheet for prolonging such forward feed, comprising a switch holding the motor-circuit closed.

4. A coin-controlled musical instrument, comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, means controlled by the sheet for prolonging such forward feed, comprising a switch holding the motor-circuit closed, said switch maintained in position to close the motor-circuit by such sheet, and means controlled by the sheet for stopping its forward movement.

5. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the circuit to start the motor, means for stopping the forward travel of the sheet, means for reversing the travel of the sheet, and means for maintaining said stopping means inoperative during such reversing travel of the sheet.

6. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the circuit to start the motor, a switch for stopping the forward travel of the sheet, means for re-

versing the travel of the sheet, means controlled by the sheet for operating said switch, and means controlled by the sheet for maintaining said switch in position to close the motor-circuit during such reverse travel of the sheet.

7. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, means operated by the sheet for prolonging such forward feed, comprising a switch for opening and closing the motor-circuit, means for reversing the travel of the sheet, and means controlled by the sheet for holding said switch in position to close the motor-circuit during such reverse travel of the sheet.

8. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the circuit to start the motor, a switch for prolonging the forward feed of the sheet, having a member controlling its position normally held by such sheet in position to close the motor-circuit, and means carried by the sheet for moving said switch to open the motor-circuit at predetermined intervals.

9. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the circuit to start the motor, a switch for prolonging the forward feed of the sheet, having a member controlling its position normally held by such sheet in position to close the motor-circuit, said sheet being formed with a slot permitting such controlling member of the switch to move to open the motor-circuit.

10. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, means for prolonging the forward feed of the sheet, such means operating automatically upon starting of the motor by said first-mentioned means.

11. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, a switch for operating the motor-circuit prolonging the forward feed of the sheet, said switch automatically operating to close the motor-circuit upon starting of the motor by said first-mentioned means.

12. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selec-

tions, an electric motor for moving said sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, a switch for prolonging such forward feed having a member controlling its position normally held by such sheet in position to close the motor-circuit, said sheet being formed with a slot permitting such controlling member of the switch to move to open the motor-circuit, said controlling member being so formed that it is engaged by the sheet, and moved to automatically restore the switch to its closed position.

13. A coin-controlled musical instrument, comprising a traveling sheet, means operated by such sheet for producing musical selections, said sheet being formed with perforations for a plurality of tunes, an electric motor for moving the sheet, means operated by a coin for closing the circuit to start the forward feed of the sheet, means for opening the motor-circuit, a stop carried by the sheet after each tune for actuating said last-named means, means operated by said sheet for reversing its travel, and means whereby such means for opening the motor-circuit are maintained inoperative when passing the stops during the reverse travel of the sheet.

14. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit, means operated by the motor for discharging the coin, and means operated by the sheet for prolonging its feed after the discharge of the coin.

15. A coin-controlled musical instrument comprising a traveling sheet, means operated by such sheet for producing musical selections, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit, means operated by the motor for discharging the coin, and restoring said circuit-closing mechanism to position for receiving another coin, and means for prolonging the movement of the sheet after such discharge.

16. A coin-controlled device, comprising a traveling sheet, a motor for driving the sheet, means operated by a coin for starting the forward feed of the sheet, and means controlled by the sheet for prolonging its forward feed.

17. A coin-controlled device, comprising a traveling sheet, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, means controlled by the sheet for prolonging its forward feed, and means controlled by the sheet for stopping its forward movement.

18. A coin-controlled device, comprising a traveling sheet, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, and means controlled by the sheet for prolonging such forward feed, com-

prising a switch holding the motor-circuit open.

19. A coin-controlled device, comprising a traveling sheet, an electric motor for moving the sheet, means operated by a coin for closing the motor-circuit to start the forward feed of the sheet, means controlled by the sheet for prolonging such forward feed, comprising a switch holding the motor-circuit closed, said switch maintained in position to close the motor-circuit by said sheet, and means controlled by the sheet for stopping its forward movement.

20. A coin-controlled device, comprising a traveling sheet, an electric motor for moving the sheet, means operated by a coin for closing the circuit to start the motor, means for stopping the forward travel of the sheet, means for reversing the travel of the sheet, and means for maintaining said stopping means inoperative during such reverse travel of the sheet.

21. A coin-controlled apparatus comprising, in combination, a motor, a coin-chute, a revolving coin-carrier adapted to receive a coin from the chute, means for starting the motor on receipt of a coin from said carrier, and a connection between the motor and carrier revolving the carrier when the motor is started.

22. The combination with a traveling sheet, and an electric motor for moving the sheet, of means for temporarily closing the circuit to start the motor, the sheet having a part for maintaining said motor-circuit closed for prolonging its forward movement, means for stopping the forward travel of the sheet, means for reversing the travel of the sheet, and means for maintaining said stopping means inoperative during such reversing travel of the sheet.

23. The combination with a traveling sheet, and an electric motor for moving the sheet, of means for temporarily closing the circuit to start the motor, a switch in circuit with the motor, the sheet having a part for operating said switch, means for reversing the travel of the sheet, and means controlled by the sheet for maintaining said switch in position to close the motor-circuit during such reversing travel of the sheet.

24. The combination with a traveling sheet, and an electric motor for moving the sheet, of means for temporarily closing the motor-circuit to start the forward feed of the sheet, a switch in circuit with the motor, the sheet having a part for actuating said switch to prolong the forward feed, means for reversing the travel of the sheet, and means controlled by the sheet for holding said switch in position to close the motor-circuit during such reverse travel of the sheet.

25. The combination with a traveling sheet, and an electric motor for moving the sheet, of means for temporarily closing the motor-circuit to start the motor, and a switch in circuit with the motor, having a member con-

trolling its position normally held in position to close the motor-circuit, the sheet having a part for moving said switch to open the motor-circuit at predetermined intervals.

5 26. The combination with a traveling sheet, and an electric motor for moving the sheet, of means for temporarily closing the circuit to start the motor, a switch in circuit with the motor, having a member controlling its
10 position, the sheet having a part for normally holding said member in position to close the motor-circuit, said sheet being formed with a slot permitting such controlling member of the switch to move to open the motor-circuit.

15 27. The combination with a traveling sheet, and an electric motor for moving the sheet, of means for temporarily closing the motor-circuit to start the forward feed of the sheet, means actuated by the sheet for prolonging
20 the forward feed, such means operating automatically upon starting of the motor by said first-mentioned means.

28. The combination with a traveling sheet, and an electric motor for moving the sheet,
25 of means for temporarily closing the motor-circuit to start the forward feed of the sheet, a switch in circuit with the motor, the sheet having a part for automatically operating said switch to close the motor-circuit upon starting
30 of the motor by said first-mentioned means.

29. The combination with a traveling sheet, and an electric motor for moving the sheet,
35 of means for temporarily closing the motor-circuit to start the forward feed of the sheet, a switch in circuit with the motor having a member controlling its position normally held by said sheet in position to close the motor-circuit, and prolonging the forward feed of the sheet, said sheet being formed with a slot
40 permitting such controlling member of the switch to move to open the motor-circuit, said controlling member being so formed that it is engaged by the sheet and moved to automatically restore the switch to its closed po-
45 sition.

30. The combination with a traveling sheet, having a plurality of slots, and an electric motor for moving the sheet, of means for temporarily closing the motor-circuit to start the

forward feed of the sheet, means for prolong- 50
ing the forward feed of the sheet, means for stopping the forward feed controlled by said slots, means for reversing the travel of the sheet, and means whereby such means for
55 stopping the sheet are maintained inoperative when passed by said slots during the reverse travel of the sheet.

31. A traveling sheet, a motor for driving the sheet, means for temporarily starting the forward feed of the sheet, and means con- 60
trolled by the sheet for prolonging its forward feed.

32. A traveling sheet, an electric motor for moving the sheet, means for closing the motor-circuit to start the forward feed of the 65
sheet, and means controlled by the sheet for prolonging its forward feed and for stopping its forward movement.

33. A traveling sheet, an electric motor for moving the sheet, means for closing the motor-circuit to start the forward feed of the 70
sheet, and means controlled by the sheet for prolonging such forward feed, comprising a switch holding the motor-circuit closed.

34. A traveling sheet, an electric motor for 75
moving the sheet, means for closing the motor-circuit to start the forward feed of the sheet, means controlled by the sheet for prolonging such forward feed, comprising a switch holding the motor-circuit closed, said 80
switch maintained in position to close the motor-circuit by said sheet, and released from such position for stopping the forward movement of the sheet.

35. A traveling sheet, an electric motor for 85
moving the sheet, means for closing the circuit to start the motor, means for stopping the forward travel of the sheet, means for reversing the travel of the sheet, and means for maintaining said stopping means inoper- 90
ative during such reverse travel of the sheet.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN A. WESER.

Witnesses:

WINFIELD S. WESER,
NICHOLAS M. WESER..