

No. 667,683.

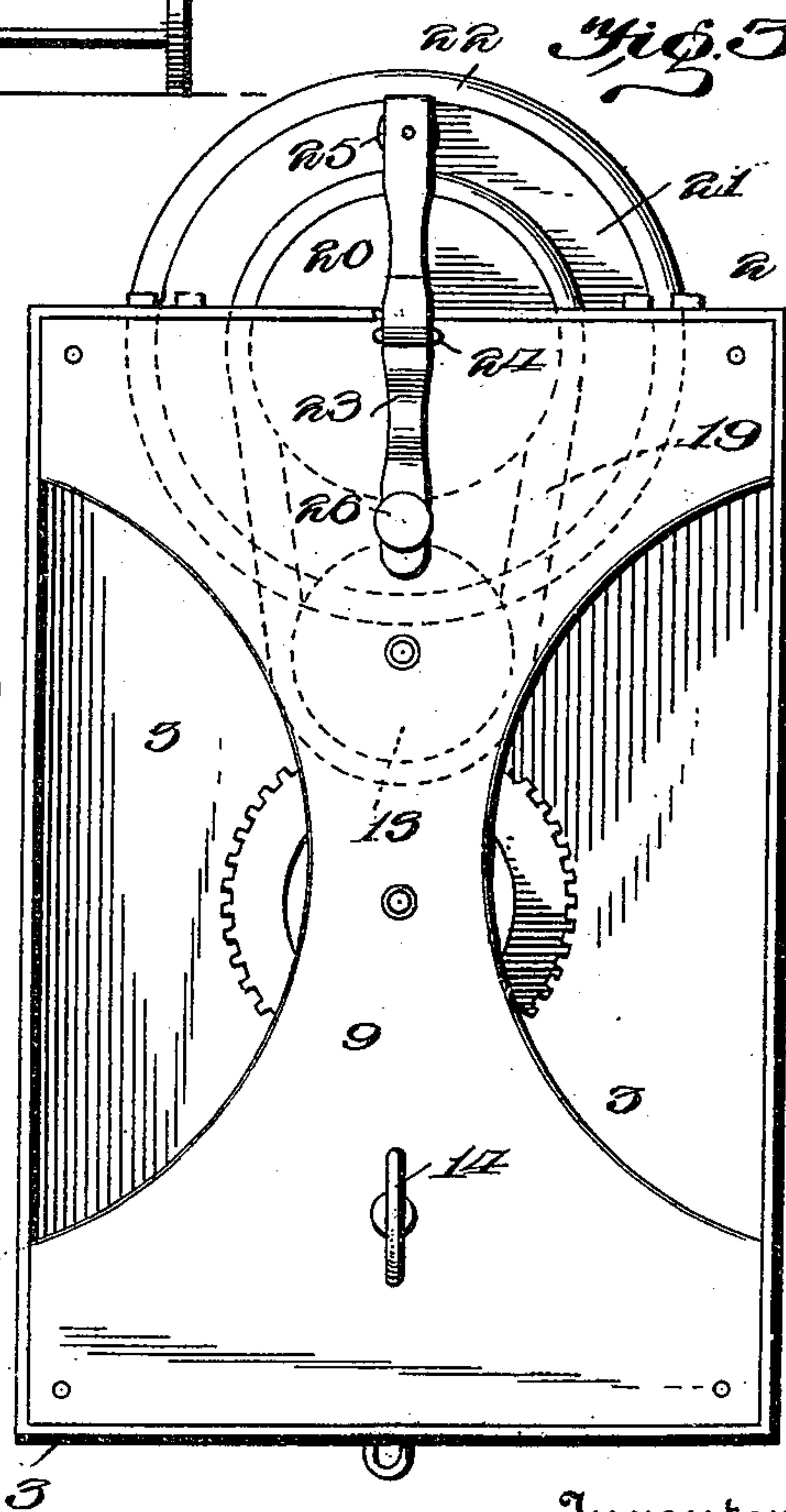
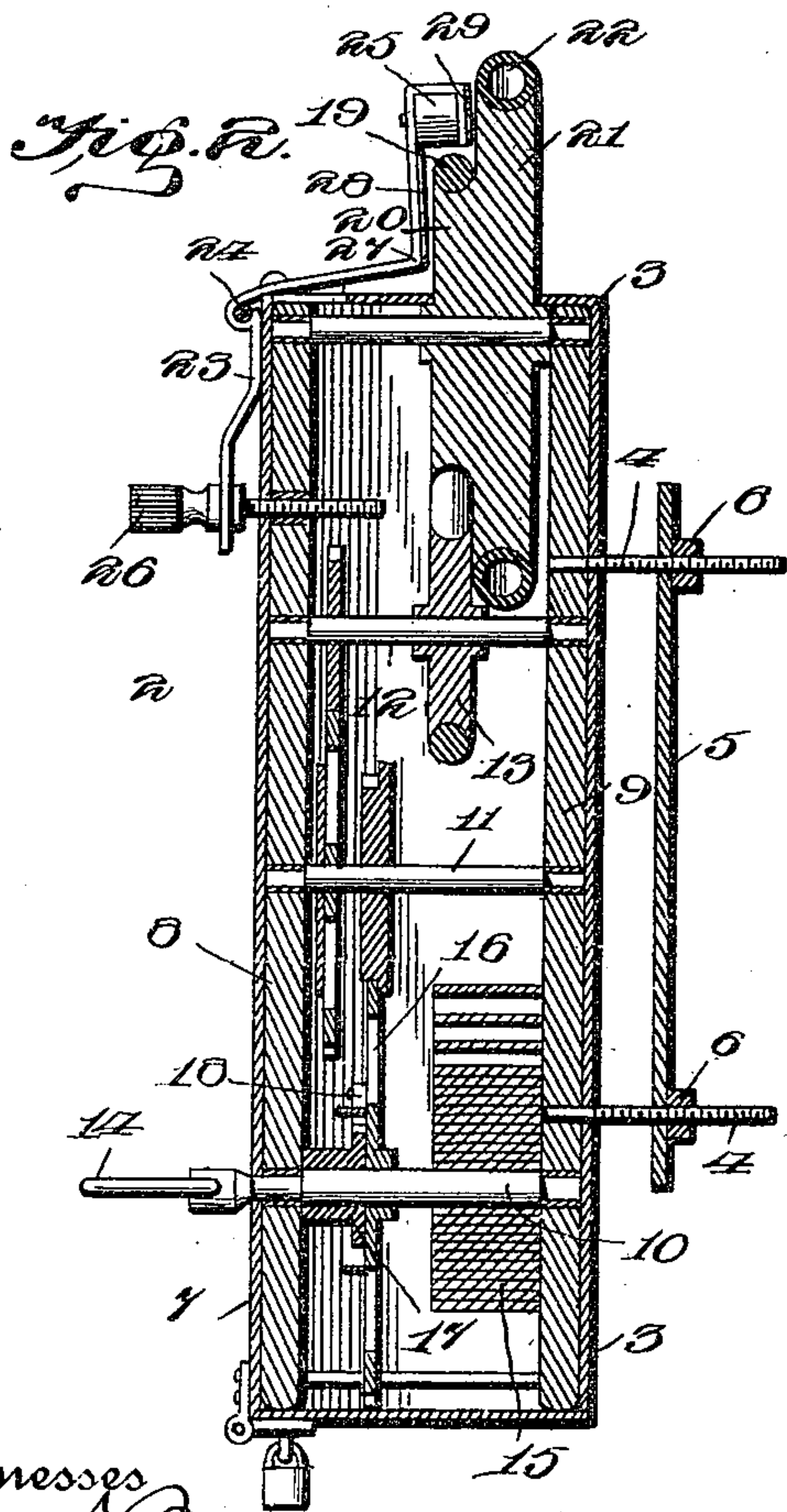
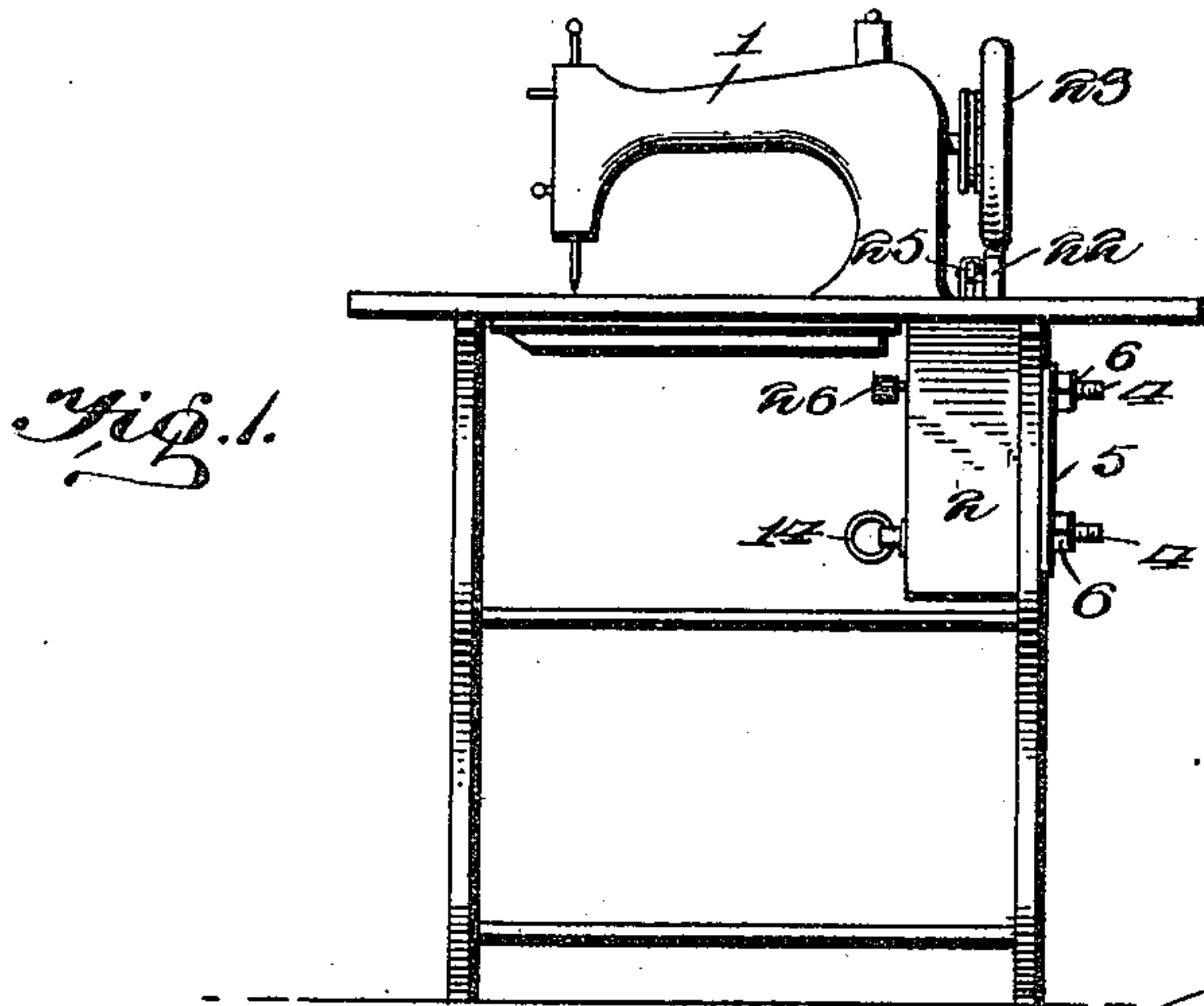
Patented Feb. 12, 1901.

J. R. DANIELS.

MOTOR.

(Application filed Aug. 31, 1900.)

(No Model.)



Witnesses

Geo. S. Dym...
David G. Juhn

Inventor
James R. Daniels

by *E. J. Sigg...*
Attorney

UNITED STATES PATENT OFFICE.

JAMES R. DANIELS, OF SAN ANTONIO, TEXAS, ASSIGNOR OF ONE-HALF TO
J. M. HOOPER, OF SAME PLACE, AND W. H. WHITTLE, OF McHENRY,
MISSISSIPPI.

MOTOR.

SPECIFICATION forming part of Letters Patent No. 667,683, dated February 12, 1901.

Application filed August 31, 1900. Serial No. 28,689. (No model.)

To all whom it may concern:

Be it known that I, JAMES R. DANIELS, a citizen of the United States, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Motor, of which the following is a specification.

This invention relates to a novel motor or propelling and controlling mechanism for operating sewing-machines and similar devices requiring no considerable power for their successful operation.

The object of the invention is to provide a simple and inexpensive motor which may be quickly attached to a sewing-machine or similar frame and embodying novel controlling mechanism for quickly stopping or starting the motor at will and with simple means for effecting an operative connection between the motor and the balance-wheel of a sewing-machine or an equivalent element of other classes of devices designed to be operated.

To the accomplishment of the desired end the invention consists in the construction and arrangement of the parts to be hereinafter fully described, illustrated in the accompanying drawings, and succinctly defined in the appended claims.

In said drawings, Figure 1 is an elevation of a sewing-machine, illustrating the application of my motor. Fig. 2 is a central longitudinal section through the motor complete, showing the controlling mechanism in elevation; and Fig. 3 is an elevation of the subject-matter of Fig. 2 with the cover of the motor-casing removed.

Referring to the numerals of reference employed to designate corresponding parts throughout the several views, 1 indicates a sewing-machine, to which my motor (indicated by the numeral 2) is applied. The motor is inclosed within a casing 3, from the rear wall of which extends a suitable clamping device for retaining the motor upon the frame of the machine, said device preferably comprising a pair of threaded bolts 4, piercing the opposite ends of an adjustable clamping-plate 5, between which and the adjacent wall of the casing the supporting part is designed to be clamped by screwing up the nuts 6, carried by the bolts 4 and bearing against the plate 5. Within the casing 3, which is pro-

vided with a removable cover-plate 7, is mounted a pair of parallel frame-plates 8 and 9, in which are journaled the opposite ends of the power-shaft 10 of the motor and likewise the shafts or arbors 11 and 12 of a train of gears designed to transmit motion from the power-shaft 10 to the shaft 12, upon which latter is keyed a grooved belt-pulley 13, as clearly shown in Fig. 2 of the drawings. The power-shaft 10 is provided with a winding-handle 14, extending outside of the casing 3 to facilitate the winding of the motor-spring 15, and, as usual in this class of devices, the connection between the power-shaft and the main gear-wheel 16 of the train is effected through the medium of a ratchet-wheel 17, fixed upon the shaft 10 and designed, when the shaft is rotated under the impulse of the spring 15, to engage a pawl 18, carried by the wheel 16.

The belt-pulley 13 is peripherally grooved, as shown, and is belted, preferably, through the medium of a rubber or other frictional belt 19 to a similar, but somewhat larger, belt-pulley 20, formed concentric with and upon one side face of a peripherally-grooved driving-wheel 21, fitted with a tubular rubber tire 22, designed to be frictionally received against the periphery of the balance-wheel 23 of a sewing-machine.

The particular arrangement of the motor upon the machine-frame is not essential, as it necessarily varies with different constructions and when used in connection with various types of mechanisms; but a convenient arrangement is shown in Fig. 1 of the drawings, wherein the motor is mounted under the machine-table and the driving-wheel 21 is extended through the table for presentation to the periphery of the balance-wheel 23.

It will now appear that the power generated by the motor-spring 15 will drive the belt-pulley 13 through the intermediate train of gearing and that said pulley will in turn drive the wheel 21 by reason of the belt-gearing 19, the operative connection between the wheel 21 and the balance-wheel 23 of the machine being effected by the frictional reception of the tire 22 against the peripheral face of the balance-wheel which is ordinarily employed in connection with the driving-belt of the sewing-machine.

In connection with the motor described I have devised controlling mechanism of novel form, which mechanism comprehends a brake-lever 23, pivotally sustained at a point intermediate of its ends, as by a staple or other suitable device 24, located upon the frame-plate 8 adjacent to its upper edge, as indicated in Figs. 2 and 3 of the drawings. The brake-lever 23 is provided at its upper end with a brake-roller 25 in operative relation with the belt 19 and at its opposite end with operating mechanism, which in the present form of the invention is embodied in the thumb-screw 26, connected to the end of the brake-lever and screwed through the motor frame-plate 8, so that as said screw is rotated the lever will be oscillated to regulate the application of the brake-roller 25 to the belt 19 for the purpose of controlling the operation of the motor. In order that the brake-lever may be rendered additionally effective, it is bent, as indicated at 27, for frictional presentation to the face of the belt-pulley 20, and its upper extremity is bent down around the roller 25 to constitute a housing therefor and to cause the presentation of this portion of the lever to the face of the driving-wheel 21. If desired, the brake-lever may be provided with friction-faces 28 and 29 at these points of contact, as shown. It will thus be seen that when the brake-lever is urged to its braking position frictional contact is made between the roller 25 and the belt 19 and between the brake-lever and the contiguous faces of the driving-wheel 21 and the belt-pulley 20.

In operation the motor-spring 15 is wound through the manipulation of the handle 14, the ratchet 17 clicking idly against the pawl 18 during the winding, as usual. During this operation the rubber periphery of the driving-wheel 21 is in frictional contact with the balance-wheel of the machine, but the motor is held inactive by the application of the brake. When it is desired to impart movement to the machine, the thumb-screw 26 is screwed in, which serves to depress the lower end of the brake-lever for removing the latter from contact with the driving-wheel belt-pulley and belt. It will be observed that the frictional surfaces 28 and 29 of the brake-lever are disposed in parallel planes and that the brake-roller 25 is disposed in a plane at right angles to these friction-surfaces. The result of this arrangement of the retarding-faces is to cause the brake-lever when in use to exert pressure upon the driving member in two directions as it is presented to the driving-wheel and pulley from the side and is urged in the direction of the periphery to bring the roller 25 in contact with the belt. Obviously, therefore, when it is desired to stop the machine it is necessary to turn the thumb-screw 26 in the opposite direction to swing the brake-lever into its retarding position.

From the foregoing it will be seen that I have produced a simple and efficient motor for sewing-machines and the like embodying effective controlling mechanism and adapted for ready attachment to the stand of a machine or other device; but while the present embodiment of the invention appears at this time to be preferable I do not wish to limit myself to the structural details defined, as it is obvious that many variations may be effected without departing from the spirit of the invention. For instance, the motor-casing may be made of any desired form and provided with ornamentation to suit the individual taste of the manufacturer, or the arrangement of gearing and the relative location of the driving-wheel may be varied in order to accommodate the motor for use in connection with machines of different patterns.

What I claim is—

1. In a motor, the combination with a frame and driving-wheel provided with a pulley extending from one side thereof, of a brake-lever disposed for contact with the side faces of both the driving-wheel and pulley.

2. In a motor, the combination with a driving-wheel, a belt-pulley movable with the driving-wheel, and means for rotating said pulley, of controlling mechanism comprising a brake-lever arranged to be urged into frictional contact with the side faces of the driving-wheel and belt-pulley, respectively, and with the periphery of said pulley.

3. In a motor of the character described, the combination with a driving-wheel formed with a belt-pulley projecting from one side face thereof, a second belt-pulley and a belt operatively connecting said pulleys, of a brake-lever arranged to contact with the driving-wheel and the first-named belt-pulley and provided with a brake-roller for contact with the belt.

4. In a motor, the combination with a casing, a motor-spring and gearing, of a driving-wheel having a frictional tire, a belt-pulley movable with the driving-wheel, and a rubber belt for imparting movement to the belt-pulley, of a brake-lever pivotally mounted upon the casing and bent into operative proximity to both the belt-pulley and driving-wheel for frictional contact therewith, a brake-roller carried by the brake-lever for contact with the belt, and a thumb-screw connected with the opposite end of the lever and extending from the side of the casing to facilitate the manipulation of said lever to control the operation of the motor.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAMES R. DANIELS.

Witnesses:

R. F. ALEXANDER,
J. T. BROWN.