

No. 762,928.

PATENTED JUNE 21, 1904.

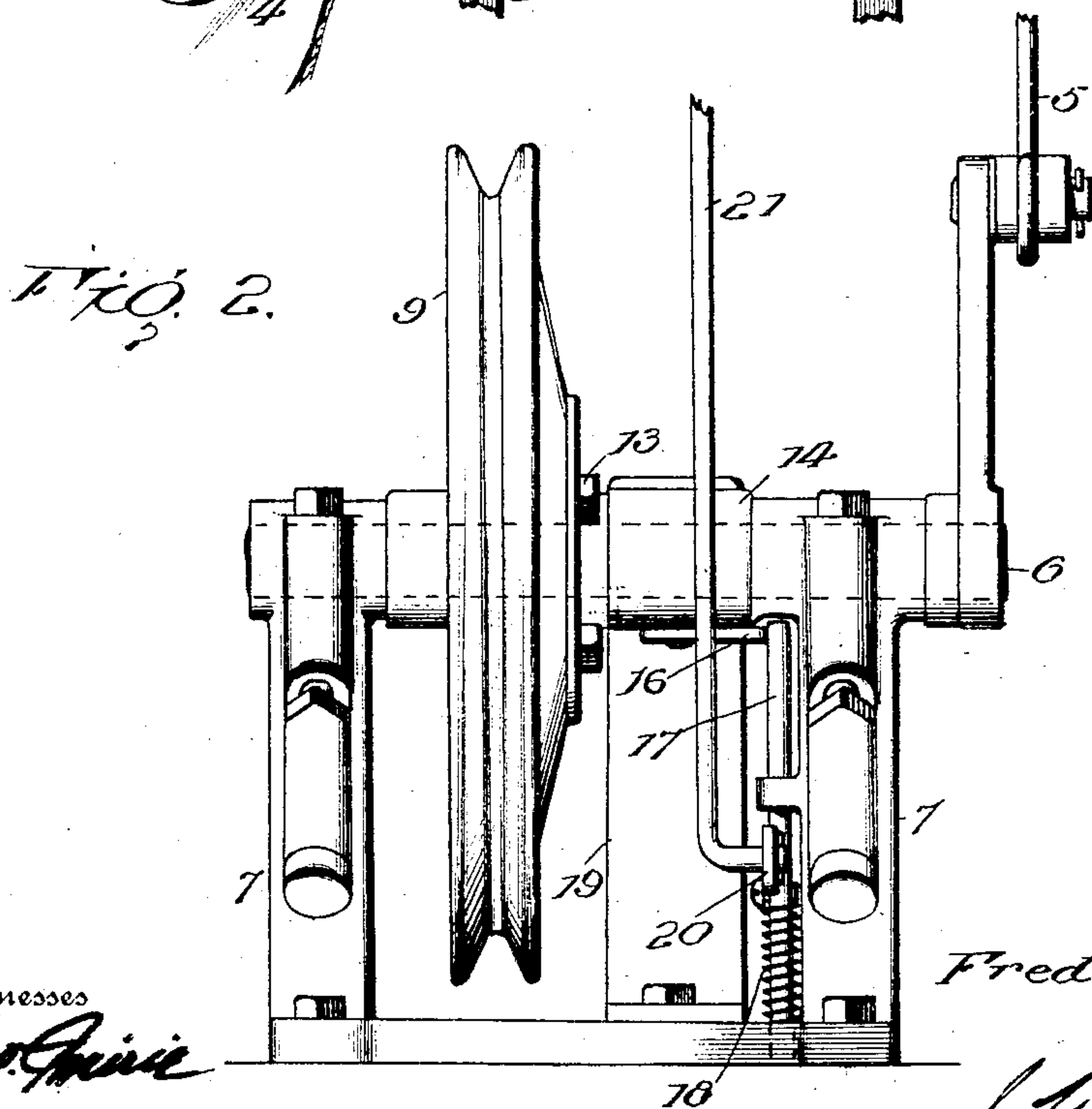
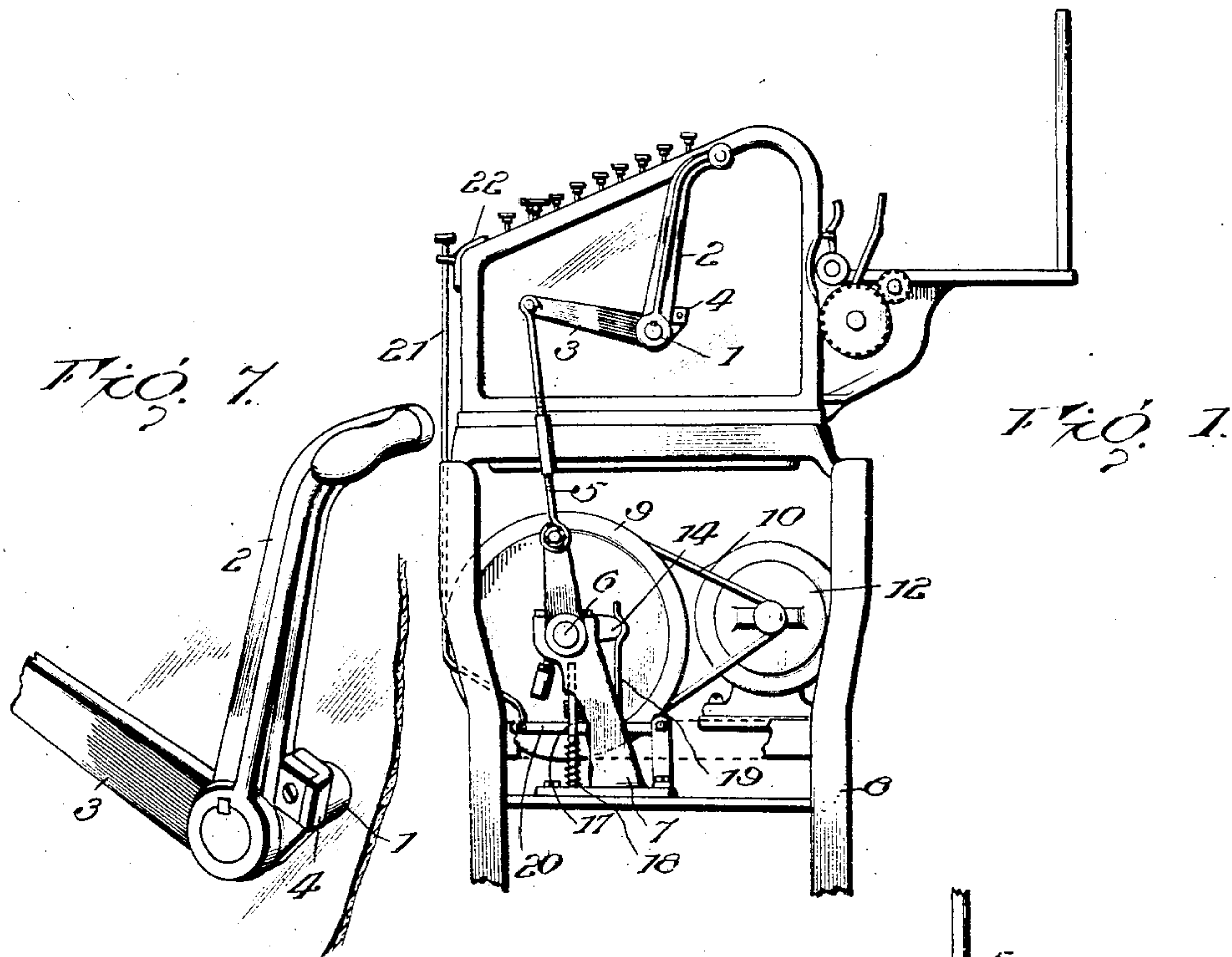
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ACTUATING MEANS FOR CALCULATING MACHINES.

APPLICATION FILED JULY 22, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses

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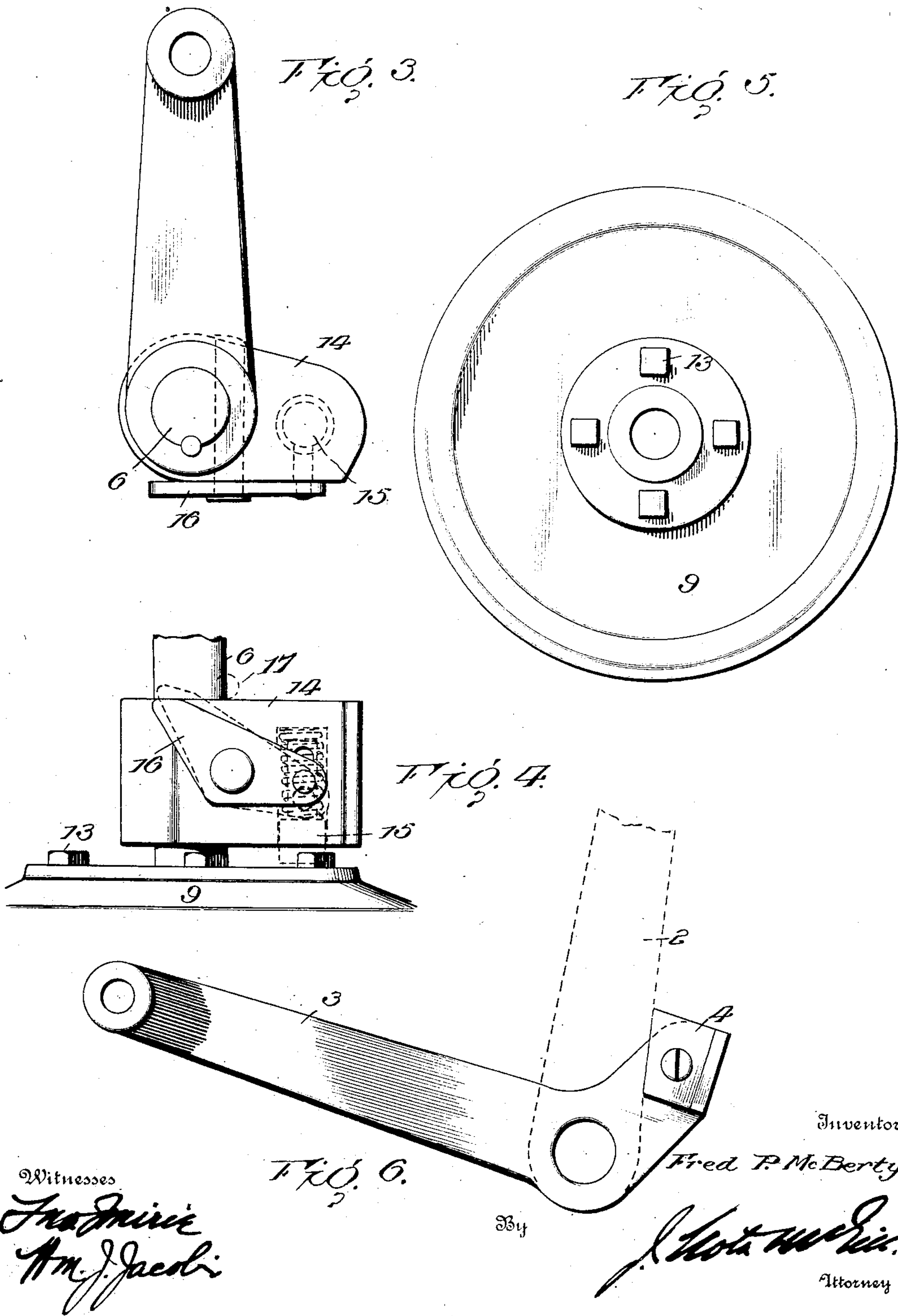
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Witnesses
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UNITED STATES PATENT OFFICE.

FRED P. McBERTY, OF WARREN, OHIO, ASSIGNOR TO THE PEERLESS ELECTRIC COMPANY, OF WARREN, OHIO, A CORPORATION OF OHIO.

ACTUATING MEANS FOR CALCULATING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 762,928, dated June 21, 1904.

Application filed July 22, 1903. Serial No. 166,575. (No model.)

To all whom it may concern:

Be it known that I, FRED P. McBERTY, a citizen of the United States, and a resident of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful Improvements in Actuating Means for Calculating-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The primary object of this invention is to provide for the power actuation of machines of the type intermittently operated by a reciprocating motion, such as calculating or adding machines. In this class of machines after the proper keys thereof have been manipulated the main operating-shaft is reciprocated by the operator to secure the necessary recordation of the figures or letters or the adding of a column of figures, as the case may be, the imprint effected thereby being repeated as often as the shaft is actuated. By means of my invention the operation of machines of this character may be more quickly accomplished than has heretofore been possible, and in addition thereto a positive and certain motion is secured.

A further object of my invention is to so construct the power attachment that the machine may, if desired, be operated by hand independently of the source of mechanical power.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation, showing the general outline of an adding-machine of a well-known type to which my invention is especially applicable. Fig. 2 is an end view. Fig. 3 is an end view of the crank-shaft. Fig. 4 is a bottom plan view of the clutch. Fig. 5 is a face view of the driven wheel. Fig. 6 is a view of the loosely-mounted lever. Fig. 7 shows in perspective the two levers on the operating-shaft.

While in the drawings I have shown my attachment as applied to a well-known form

of adding-machine for use in connection with which it is especially advantageous, yet it is to be understood that the invention is not restricted in its use to any one form or style of calculating, tabulating, or adding machine.

Referring to the drawings, 1 designates the main actuating-shaft of a calculating-machine, and 2 a hand-lever fast thereon. It is by reciprocating this lever that machines of this type are ordinarily operated, the lever being drawn forward by hand and returning to its normal position under the action of the working parts of the machine. Also mounted on this shaft, but loose thereon, is a forwardly-extended lever 3, which is equipped with a side flange or shoulder 4, designed to engage the rear edge of lever 2, so that when lever 3 is pulled downwardly at its outer end it will carry lever 2 with it, and thereby effect the partial rotation of shaft 1. At the same time the construction is such that lever 2 may be operated by hand independently of lever 3. At its outer end this latter lever is connected by a pitman 5 to the crank of a shaft 6, having its bearings in a suitable frame 7, preferably mounted beneath the adding-machine within the supporting-frame 8 thereof. On this shaft is loosely mounted a wheel 9, constantly actuated by a belt 10, preferably driven by an electric motor 12 or its equivalent. On the side face of this wheel, near its hub, is a series of circularly-arranged teeth 13. Although this wheel is constantly rotated, the shaft 6 normally stands idle; but when it is desired to actuate the calculating-machine by the reciprocation of its main shaft a suitable clutch is operated to throw the shaft 6 into engagement with wheel 9, so that they will revolve in unison to the extent of one complete revolution, thereby drawing on lever 3, so as to actuate shaft 1, the clutch being automatically thrown out of engagement with the wheel as it completes its circle of rotation, unless, as often occurs, it is desired that the calculating-machine repeat itself without change of keys, in which event the crank-shaft is allowed to remain locked to the constantly-driven wheel. While any suitable means may be employed for this purpose, that shown comprises a casing 14, fast on shaft

6 and extending laterally therefrom. Within this casing is a spring-impelled pin 15, to which is connected a switch-plate 16, pivoted to the normally under or lower side of the casing, such plate extending at right angles to the latter at one end, so as to be engaged by a trip-rod 17, normally held in the path of the plate by a spring 18. The engagement of the switch-plate with this trip-rod effects the turning of the former on its pivot, so as to draw pin 15 inwardly and out of engagement with wheel 9. As the crank-shaft is completing its revolution casing 14 engages a retaining-plate spring 19, by which the crank-shaft is held stationary when not interlocked with the driven wheel. At the same time the switch-plate upon engaging with the trip-rod draws the spring-impelled pin out of the line of the teeth of the wheel. Any suitable means may be employed for operating the trip-rod, that shown comprising a lever 20, secured to the rod, and to one end of which is connected a controlling-rod 21, extended up along the front of one side of the calculating-machine or at any other point within convenient reach of the operator. This rod is preferably detachably secured to the machine by a curved clamping-plate 22, so that the entire attachment may be applied to machines now in general use without danger of injury thereto. In practice by pressing downwardly on the controlling-rod 21 the trip 17 will be moved out of engagement with the switch-plate, allowing pin 15 to be projected laterally and into the path of teeth 13 of the constantly-operated wheel. In this way the crank-shaft will almost instantly rotate in unison with such wheel, and through its connection with lever 3 will effect the quick and positive actuation of the main shaft of the calculating-machine. In this connection it will be noted that the engagement between the levers 3 and 2 is such that the latter does not have to maintain the same speed as the former on the return stroke. This allows for ample working of the parts of the calculating-machine. It is obvious that only a slight downward pressure on the controlling-rod is necessary to throw the crank-shaft into positive connection with the constantly-operated wheel, and that if it is desired that the operation of the machine should be repeated without change it is only necessary for the operator to retain pressure on the controlling-rod, so as to prevent the trip from throwing the clutch out of engagement with the constantly-operated wheel.

Changes may be made in the construction and arrangement of the parts without departing from the scope or spirit of my invention. In this connection it might be noted that the trip-controlling-rod, in lieu of being carried up one side of the machine for operation by hand, may be employed as a foot-lever or treadle.

I claim as my invention—

1. In combination, an adding or calculating machine having a main actuating instrumentality, a power-driven instrumentality, and means connecting the latter with the former, said former instrumentality being capable of being actuated independently of the other instrumentality, or by and in conjunction with the latter, as set forth.

2. In combination, an adding or calculating machine having a main actuating-shaft, a hand-lever for manually actuating such shaft, a second lever for mechanically actuating such shaft, a constantly-operated driver, and means designed to be intermittently actuated thereby, such means being connected to said second lever, as set forth.

3. In combination, an adding or calculating machine having a main actuating-shaft, a constantly-operated driver, means actuated by such driver connected to said shaft, and means for controlling the engagement between such latter means and said driver, such engagement continuing at the will of the operator, as set forth.

4. In combination, an adding or calculating machine having a main actuating-shaft, a constantly-operated wheel, means actuated by such wheel connected to said shaft, and means for automatically discontinuing such actuation at the will of the operator upon the completion of one or more revolutions of such wheel, as set forth.

5. In combination, an adding or calculating machine having a main actuating-shaft, a lever fast thereon, a second lever loose on such shaft but designed to engage the former lever when moved in one direction, a crank-shaft connected to said second lever, a constantly-operated wheel, and means for throwing such shaft into engagement with said wheel, as set forth.

6. In combination, an adding or calculating machine having a main actuating-shaft, a lever fast thereon, a second lever loose on such shaft but designed to engage the former lever when moved in one direction, a crank-shaft connected to said second lever, a constantly-operated wheel loose on said shaft, a clutch carried by said shaft, and means for causing the clutch to interlock said shaft and wheel, as set forth.

7. In combination, an adding or calculating machine having a main actuating-shaft, a lever fast thereon, a second lever loose on said shaft but designed to engage the former lever when moved in one direction, a crank-shaft connected to said second lever, a constantly-operated wheel loose on said shaft, a clutch carried by said shaft, means for causing the clutch to interlock said shaft and wheel, and means for automatically disconnecting such elements, as set forth.

8. In combination, an adding or calculating

machine having a main actuating-shaft, a lever for operating the same, a crank-shaft to which said lever is connected, a constantly-operated wheel loose on said shaft, a clutch for interlocking said wheel and shaft, a trip for said clutch, and means for holding said trip retracted to allow of successive operation of said machine by said wheel, as set forth.

9. In combination, an adding or calculating machine having a main actuating-shaft, a lever for operating the same, a crank-shaft to which said lever is connected, a constantly-operated wheel loose on said shaft having a series of teeth on its side face, a clutch carried by said crank-shaft having a horizontally-movable spring-impelled pin for engaging said teeth, a horizontally-movable switch-plate connected to said pin, and a vertically-movable trip for said switch-plate, as set forth.

10. In combination, an adding or calculating machine having a main actuating-shaft, a lever for operating the same, a crank-shaft to which said lever is connected, a constantly-operated wheel loose on said shaft, having a series of teeth on its side face, a clutch carried by said crank-shaft having a horizontally-movable spring-impelled pin for engaging said teeth, a horizontally-movable switch-plate connected to said pin, a vertically-movable spring-held trip-rod normally in the path of said switch-plate, a horizontally-disposed lever connected to said trip-rod, and a controlling-rod secured to said latter lever, as set forth.

11. In combination, an adding or calculating machine having a main actuating-shaft, mechanism for reciprocating the latter, a frame

supporting such machine, a motor located within and supported by such frame, means supported by such frame actuated by such motor connected to said mechanism, controlling means also supported by said frame for regulating the actuation of such latter means, such controlling means comprising a rod extended along one side of the adding-machine, and means for detachably securing such rod to such machine, as set forth.

12. The combination with an adding or calculating machine having a main actuating-shaft, and a lever fast thereon, of a second lever loose on said shaft, means for causing such second lever to engage the former lever when moving in one direction, and means connected to such second lever for intermittently actuating the same, such first-mentioned lever being free to move in one direction independently of the second lever, as set forth.

13. The combination with an adding or calculating machine having a main actuating-shaft, and a lever fast thereon, of a second lever loose on such shaft having a side flange or shoulder for engaging the former lever, and means connected to such second lever for intermittently actuating the same, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

FRED P. McBERTY

Witnesses:

T. H. GILLMER,

ELMER W. GILLMER.