

No. 742,630.

PATENTED OCT. 27, 1903.

B. W. GRIST.

LEVER ACTUATED INTERLOCKING CLUTCH MECHANISM.

APPLICATION FILED OCT. 31, 1902.

NO MODEL.

Fig. 1.

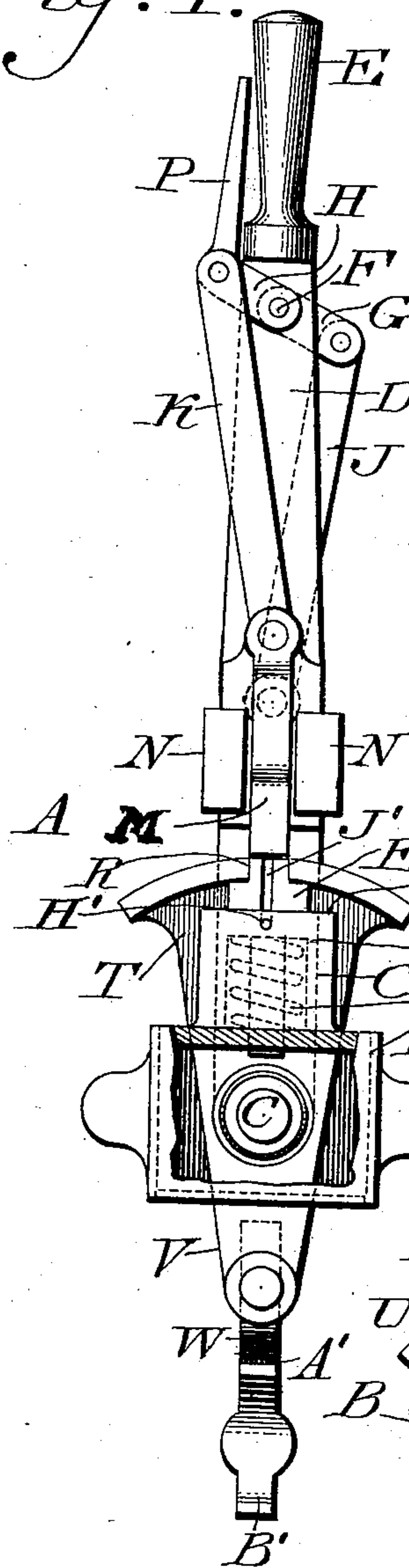


Fig. 4.

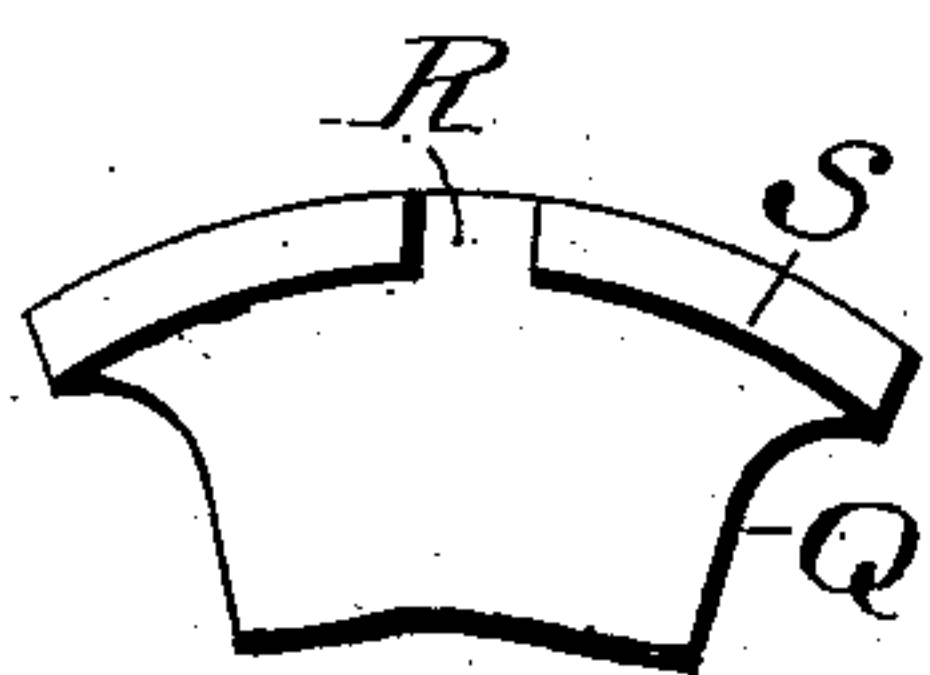


Fig. 2.

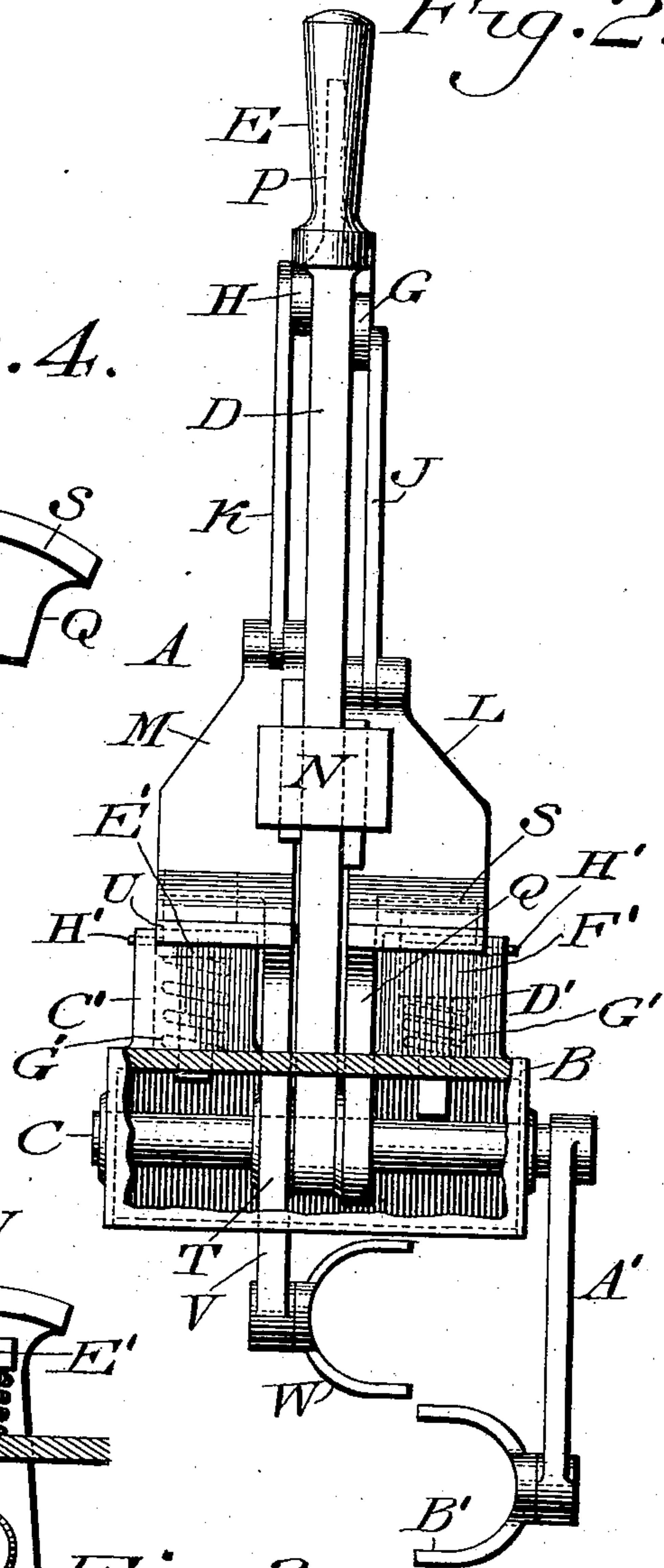
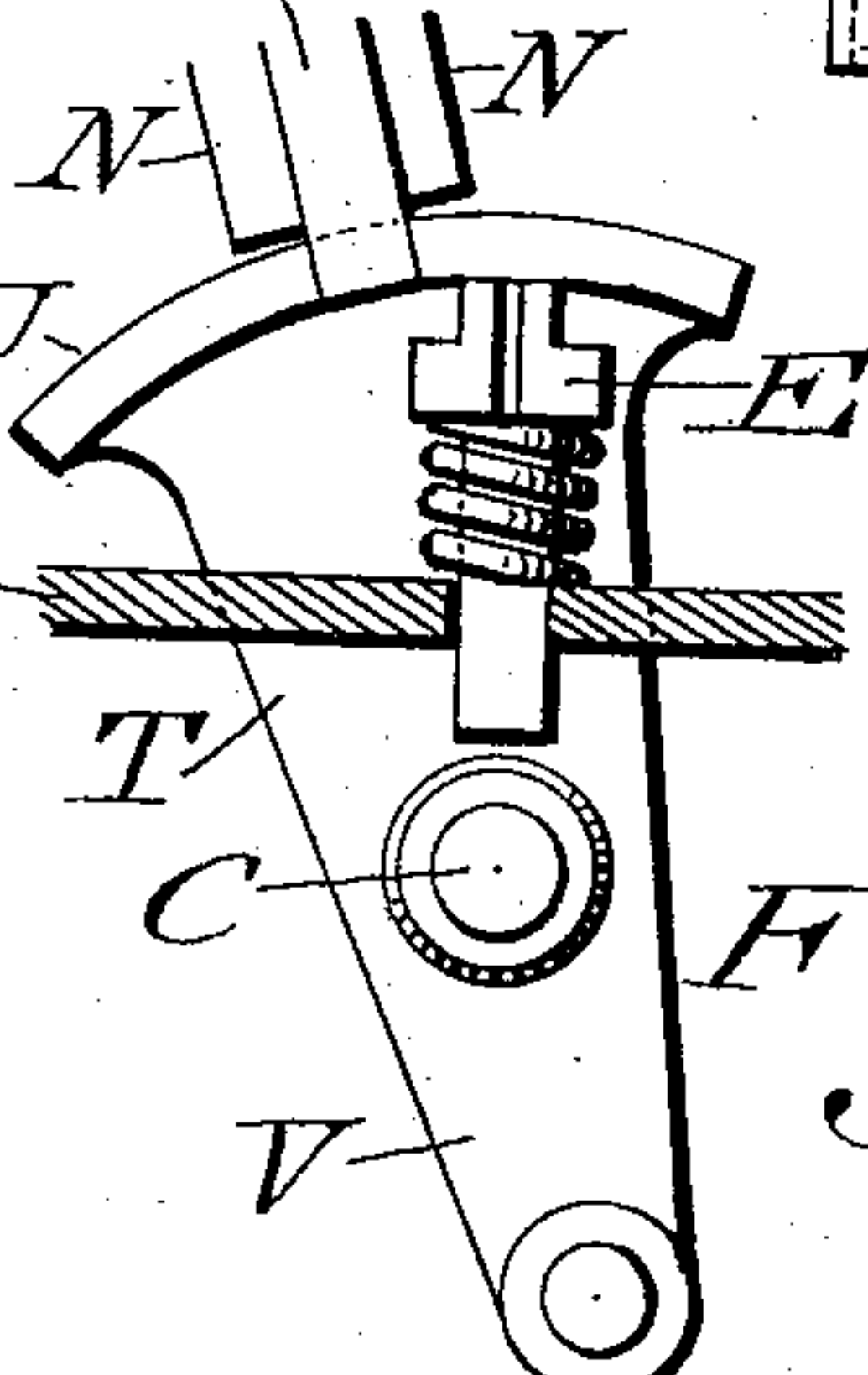


Fig. 3.



Witnesses
P. H. Taylor.
M. G. Lukens.

By

Inventor
Benjamin W. Grist.
Wiedersheim & Fairbanks.

Attorneys

UNITED STATES PATENT OFFICE.

BENJAMIN W. GRIST, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
FREDERICK A. RIEHLE, OF PHILADELPHIA, PENNSYLVANIA.

LEVER-ACTUATED INTERLOCKING CLUTCH MECHANISM.

SPECIFICATION forming part of Letters Patent No. 742,630, dated October 27, 1903.

Application filed October 31, 1902. Serial No. 129,599. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN W. GRIST, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Lever-Actuated Interlocking Clutch Mechanism, of which the following is a specification.

My invention consists of an improvement in lever-actuated interlocking clutch mechanism; and it resides in the novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a side elevation of a lever-actuated interlocking clutch mechanism embodying my invention, showing a portion of the casing broken away. Fig. 2 represents an end elevation thereof, showing a portion of the casing broken away. Figs. 3 and 4 represent side elevations of portions of the device in detached position.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a lever-actuated interlocking clutch mechanism having a casing B, in which is journaled the shaft C, on which is mounted the lever D, which is adapted to rotate freely thereon and is provided with the handle E. F designates a pin or pivot passing through said lever D and having secured thereto on opposite sides of the said lever the arms G and H, which are adapted to operate in conjunction with said pivot, the free end of each of said arms being pivotally connected with the rods J and K, the lower ends of each of which are pivotally attached to the latches L and M, which are adapted to be raised and lowered with respect to said lever D and move in and are guided by the guides N. A suitable thumb-latch P is attached to one of said arms—as, for example, H.

Q designates an operating-sector which is keyed to the shaft C and which is provided with a notch R, into which the latch L is adapted to enter at the proper time, as will be hereinafter described, said sector being further provided with a flange S.

Loosely mounted on the shaft C is a second operating-sector T, which is likewise provided with a notch into which the latch M is adapted

to enter, as best seen in Fig. 3, and which sector is also provided with a flange U, said sector having an extension V, upon which is mounted a clutch-fork W, the shaft C, having a lever or arm A' attached thereto, carrying a second clutch-fork B', it being noted that the extension V on the sector T passes through a suitable opening in the casing B for evident purposes.

C' and D' designate extensions on the casing B, in each of which is mounted a catch or bolt E' and F', said bolts being actuated by the springs G' and being adapted to enter the notches in the sector at the proper time, it being evident that when said bolts are in engagement with said notches the said sectors cannot move or be operated.

H' designates a pin which enters the spline J' in the bolts and prevents improper rotation of the same, it being noted that the said bolts pass through suitable openings in the casing B and that the spring G' bears against said casing and a suitable portion of the bolts.

The operation is as follows: The latches L and M are so arranged, by reason of the connecting-rods J and K and the arms G and H, that one or the other is always in elevated position, while the opposite one is in lowered position. When it is desired that the clutch members be operated, the parts being in the position seen in Figs. 1 and 2, it will be noted that the bolt E' has entered or is situated within the notch in the sector T and that therefore the same cannot be operated while the latch M is in raised position directly above the said bolt E'. The opposite latch L, however, is in lowered position and is situated within the notch in the sector Q, whereby the said sector will be locked with respect to the lever D, and by proper manipulation of the same the clutch-fork B' is operated and with it the member of the clutch which is secured thereto, since the sector Q is keyed to the shaft C, and the same is therefore rotated. By reversing the position of the arms G and H, which can be done by changing the position of the thumb-latch P, the lever D meanwhile having been brought into position so that the latch M is directly over the bolt E', the said latch M forces down the bolt E', overcoming the tension of the spring G', so

that the said bolt is removed from the notch in the sector T, while the latch M enters the same. The latch L meanwhile has been removed from the notch in the sector Q, and the spring G' forces up the bolt F', so that the same enters the notch in the said sector, which is locked and prevented from rotation, and by operating the lever D the fork W will operate the clutch member secured thereto, since the sector T is secured to the lever D, and both the sector T and said lever D are freely mounted on the shaft C, it being understood that the bolts E' and F' will move on the flanges on the sectors when either of the same are in lowered position, the position of the bolt being best understood from Fig. 3. It will be understood, furthermore, that the latches L and M are so arranged with respect to the sectors that if the thumb-latch P is in central position the latches will enter the notches in the sectors T and Q to one-half the depth of the notches, while the bolts E' and F' will fill the remaining half of the notches, thereby locking both the lever D and said sectors and obviating any accidental disturbances of the parts or of the clutch mechanism.

It will be evident that various changes may be made by those skilled in the art which may come within the scope of my invention, and I do not, therefore, desire to be limited to the exact construction herein shown and described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an interlocking clutch mechanism, a plurality of means for engaging with the clutch members, laterally-immovable operating means for said first-mentioned means adapted to engage with one or the other of said first-mentioned means, and simultaneously-operated devices intermediate said first-mentioned means and said operating means for operatively connecting the parts.

2. In an interlocking clutch mechanism, a laterally-immovable lever, a plurality of means adapted to engage the clutch members, simultaneously-operated devices pivotally connected with said lever, means cooperating therewith, whereby one or the other of said means may be put into engagement with said lever and locking means, whereby when one clutch mechanism is operated the other is locked and prevented from movement.

3. In an interlocking clutch mechanism, a lever, latches carried thereby and movable thereon, means for operating said latches, whereby one or the other is in raised position, and clutch-forks suitably mounted and adapted to be engaged by said latches, whereby one or the other is operated.

4. In an interlocking clutch mechanism, clutch-forks, a lever suitably mounted, latches carried thereby, locking means for said forks and means whereby when one fork is in operative position, the other is locked and prevented from operation.

5. In an interlocking clutch mechanism, a shaft, a lever loosely mounted upon said shaft, operating-sectors mounted upon said shaft, latches movably mounted for pivotal movement on said lever and adapted to engage with said sectors, and means for locking said sectors and lever, the parts being so arranged that when one is locked with respect to the lever, the other is locked and prevented from movement.

6. In an interlocking clutch mechanism, a shaft, a lever movably mounted thereon, latches movably mounted on said lever and adapted to be raised and lowered, sectors mounted on said shaft, and bolts suitably supported and adapted to lock said sectors, said bolts being adapted to be operated by said latches at the proper time.

BENJAMIN W. GRIST.

Witnesses:

J. R. BENNINGTON,
ALAN C. FRAZIER.