

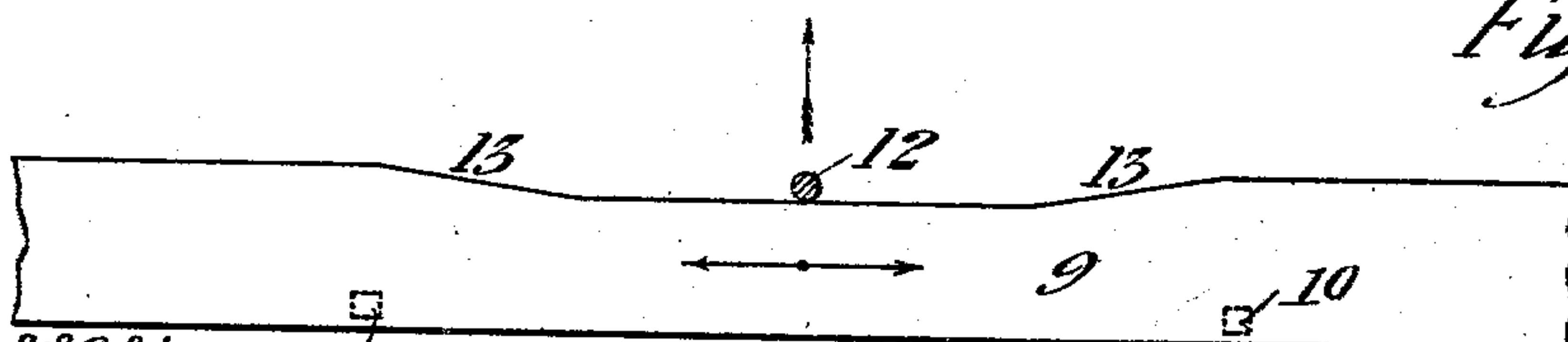
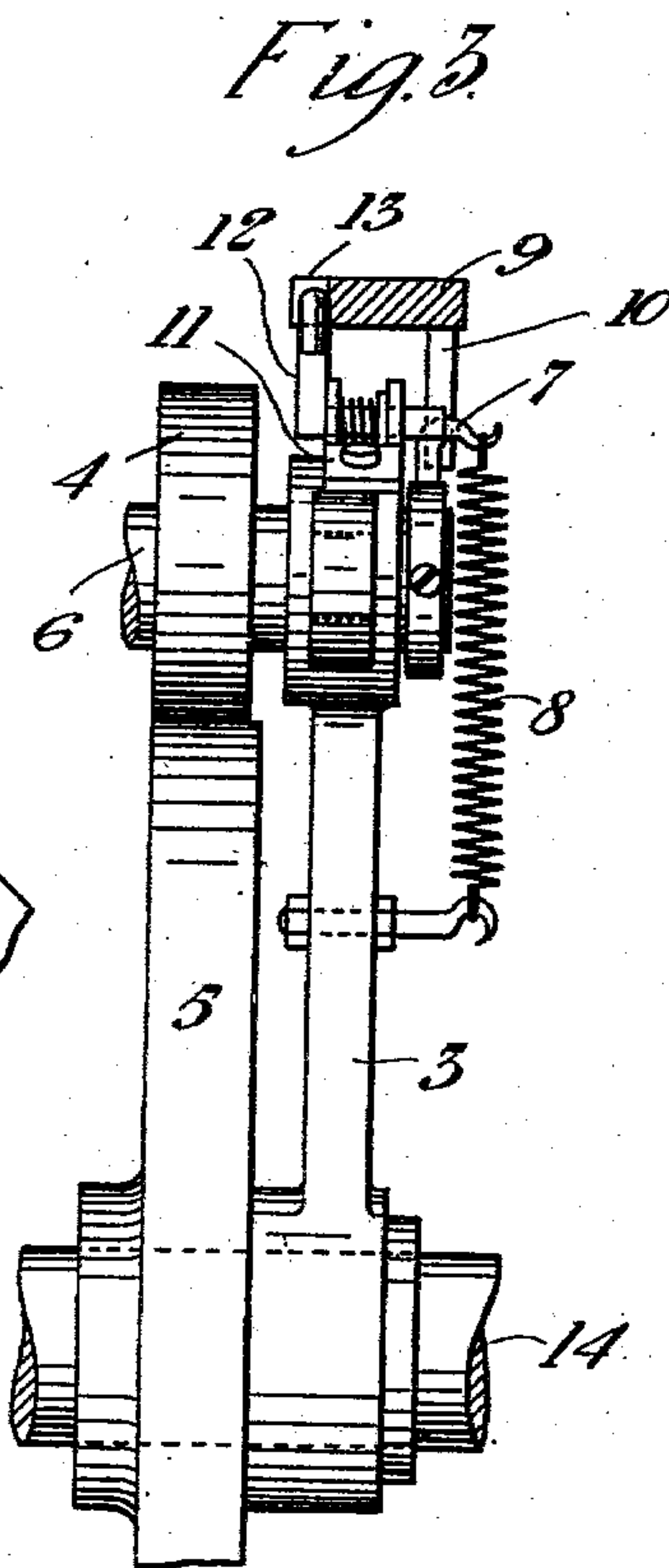
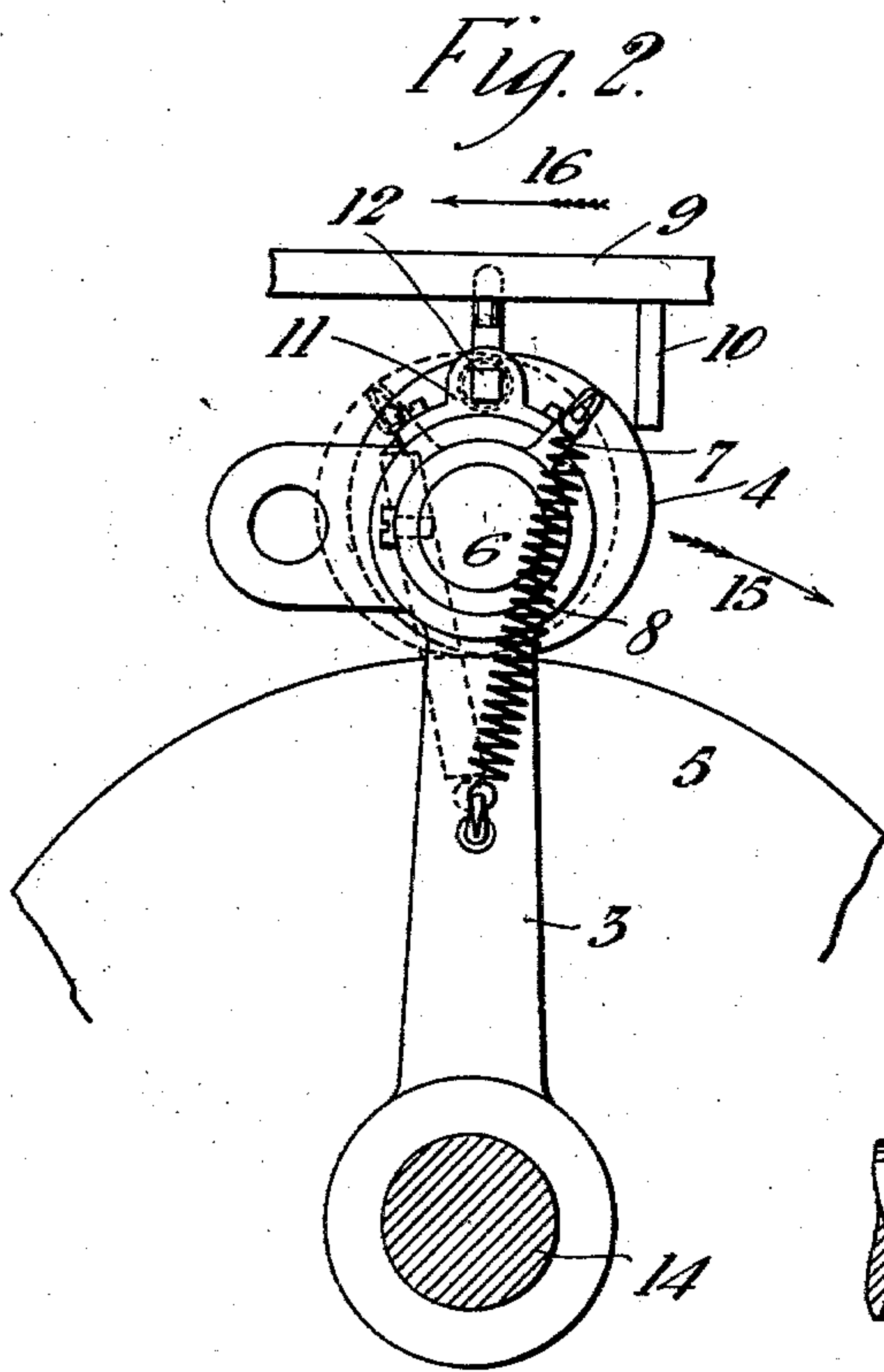
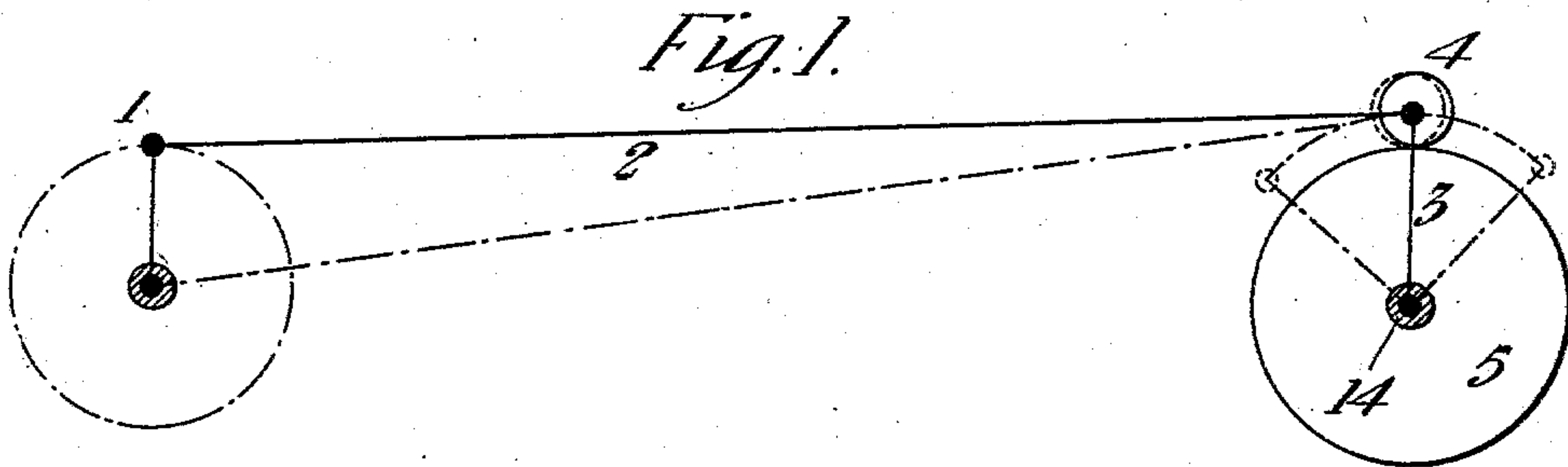
No. 740,984.

PATENTED OCT. 6, 1903.

W. & G. F. MEISCHKE-SMITH.
MECHANISM FOR DRIVING AND REVERSING MOTION.

APPLICATION FILED JUNE 22, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM MEISCHKE-SMITH AND GEORGIUS FRANCISCUS MEISCHKE-SMITH,
OF PARIS, FRANCE.

MECHANISM FOR DRIVING AND REVERSING MOTION.

SPECIFICATION forming part of Letters Patent No. 740,984, dated October 6, 1903.

Original application filed December 1, 1902, Serial No. 133,485. Divided and this application filed June 22, 1903. Serial No. 162,659. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM MEISCHKE-SMITH, a subject of the King of Great Britain and Ireland, and GEORGIUS FRANCISCUS MEISCHKE-SMITH, a subject of the Queen of the Netherlands, both residing at 7 Rue Drouot, Paris, in the Republic of France, have invented certain new and useful Improvements in Mechanism for Driving and Reversing Motion, of which the following is a specification, for which we have applied for patents in Great Britain, dated September 15, 1902, No. 20,135; in France November 24, 1902, No. 316,307; in Germany September 12, 1902, No. 22,183, and in Austria November 24, 1902.

This invention, which was originally included in our application for patent filed on the 1st of December, 1902, Serial No. 133,485, of which this is a division, relates to that description of mechanism for imparting a step-by-step rotary motion to a shaft or axle wherein a radial lever-arm mounted loose upon the shaft carries an eccentric in frictional contact with the periphery of a disk on the shaft, so that on imparting a reciprocating motion to the said lever-arm the eccentric acts as a frictional pawl, causing the arm to carry the disk and shaft with it in one direction and sliding freely on the disk when the arm moves in the other direction, the eccentric being so mounted upon the lever-arm that its position can be reversed relatively thereto, thereby causing the lever-arm to impart motion to the disk and shaft in the contrary direction. An arrangement for this purpose was described in the specification to our United States Patent No. 706,580.

Our present invention has for its object improved means for effecting the reversal of the eccentric for reversing the direction of motion of the disk and shaft, as we will describe, with reference to the accompanying drawings, in which—

Figure 1 shows a diagrammatic view of the driving-gear; Fig. 2, a front view of the mechanism; Fig. 3, a side view, and Fig. 4 a plan of the reversing-bar.

As shown at Fig. 1, the driving-crank 1 imparts a reciprocating motion by connect-

ing rod 2 to a lever-arm 3, mounted loose on a shaft on which is fixed a disk 5. The arm 3 carries an eccentric 4, rotatably mounted on a pivot and bearing upon the periphery of the disk, so that according to the position into which the eccentric is turned on its pin relatively to the lever-arm 3 the latter will be made to carry the disk with it while turning in the one direction, the eccentric being made to slide freely over the disk when the arm moves in the contrary direction. On reversing the position of the eccentric relatively to the lever-arm the latter will carry the disk round in the contrary direction. According to the present invention such reversal of the position of the eccentric 4 is effected by the following mechanism: The lever-arm 3, mounted loose on shaft 14, carries an axle 6, rotatably mounted in an eye thereon and having fixed upon it the before-mentioned eccentric 4. On the axle 6 is also fixed an arm 7, to which is attached one end of a spring 8, whose other end is fixed to the lever-arm 3, and which tends to turn the axle 6, so as to cause the eccentric 4 to bite against the disk 5, fixed on shaft 14, so that in the position of the eccentric in Fig. 2 the lever-arm 3 will be made to carry the disk and shaft round with it when turning in the direction of the arrow 15, while when the lever-arm moves in the contrary direction the eccentric will slide freely over the disk.

For reversing the position of the eccentric, so as to effect the reversal of the motion of disk 5 and shaft 14, the eccentric-arm 7 requires to be turned through an angle of about ninety degrees. This is effected by the movement of a sliding bar 9, which carries two pins 10, one of which on the bar being shifted by hand in the direction of the arrow 16, Fig. 2, will move the arm 7 from the position shown in full lines to that shown in dotted lines, thereby carrying round the eccentric 4 into the dotted position. This motion will be assisted by the spring 8, which as soon as the pin 10 has moved the arm 7 past the vertical center line will draw the arm over to the opposite position until the eccentric presses upon the periphery of the disk 5.

Although the spring 8 will tend to hold the

arm 7 and eccentric 4 in whichever position they are moved into, yet as a precaution a locking device is provided for preventing any unintentional shifting over of the parts, which is as follows: On the arm 3 is fixed a loop 11, carrying a spring-bolt 12, which normally projects into the path of the arm 7, and thus prevents it from shifting over. This bolt 12 therefore requires to be drawn backward when the arm 7 is to be shifted over for reversing the action of the eccentric, and this is effected by means of the sliding bar 9, which for this purpose is formed with opposite inclines 13 on each side of its middle part, so that when the bar is in the middle position the upward-bent tail of the bolt 12 is behind the narrow middle part of the bar 9, so that the spring can cause the bolt to project into the path of arm 7. When, however, the bar is moved for the purpose of reversing the arm 7, one or other of the inclines 13 thereof will force the bolt 12 backward, so as to leave the arm free to be shifted over by the pin 10. When the arm has been moved past the vertical center line and is drawn into the extreme position, as above described, the bar is moved back to its middle position, so that the bolt 12 can again spring forward into the locking position.

Having thus described the nature of this invention and the best means we know of carrying the same into practical effect, we claim—

1. In mechanism for driving and reversing motion, a disk fixed upon the shaft to be driven, a lever-arm mounted loose upon the said shaft, an eccentric rotatably mounted on the end of said lever-arm and adapted to press upon the periphery of said disk, an arm fixed to said eccentric, a spring connected at one end to the said arm and at the other end to the lever-arm, and means for moving the arm of the eccentric either to the one side or the other side of the center line of the lever-arm, so as to reverse the position of the eccentric relatively thereto, substantially as described.

2. In mechanism for driving and reversing motion, a disk fixed upon the shaft to be driven, a lever-arm mounted loose upon the said shaft, an eccentric rotatably mounted on the end of said lever-arm and adapted to press upon the periphery of said disk, an arm fixed to said eccentric, a spring connected at one end to the said arm and at the other end to the lever-arm, and means for moving the

arm of the eccentric either to the one side or the other side of the center line of the lever-arm, so as to reverse the position of the eccentric relatively thereto, comprising a slide having a pin adapted to be brought against the eccentric-arm so as to move it from the one side of the center line of the lever-arm to the other side thereof and thereby to reverse the position of the eccentric relatively thereto, substantially as described.

3. In mechanism for driving and reversing motion, a disk fixed upon the shaft to be driven, a lever-arm mounted loose upon the said shaft, an eccentric rotatably mounted on the end of said lever-arm and adapted to press upon the periphery of said disk, an arm fixed to said eccentric, a spring connected at one end to the said arm and at the other end to the lever-arm and means for moving the arm of the eccentric either to the one side or the other side of the center line of the lever-arm, so as to reverse the position of the eccentric relatively thereto, a spring-bolt normally projecting in the path of the eccentric-arm and means for withdrawing said spring-bolt to allow of the motion of the eccentric-arm when the position of the eccentric is to be reversed, substantially as described.

4. In mechanism for driving and reversing motion, a disk fixed upon the shaft to be driven, a lever-arm mounted loose upon the said shaft, an eccentric rotatably mounted on the end of said lever-arm and adapted to press upon the periphery of said disk, an arm fixed to said eccentric, a spring connected at one end to the said arm and at the other end to the lever-arm, a slide having a pin adapted to be brought against the eccentric-arm so as to move it from the one side of the center line of the lever-arm to the other side thereof and thereby to reverse the position of the eccentric relatively thereto, a spring-bolt normally projecting in the path of the eccentric-arm, there being inclines upon said slide adapted to withdraw said bolt when the slide is moved for reversing the position of the eccentric, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM MEISCHKE-SMITH.

GEORGIUS FRANCISCUS MEISCHKE-SMITH.

Witnesses:

AUGUSTUS E. INGRAM,

JOHN BAKER.