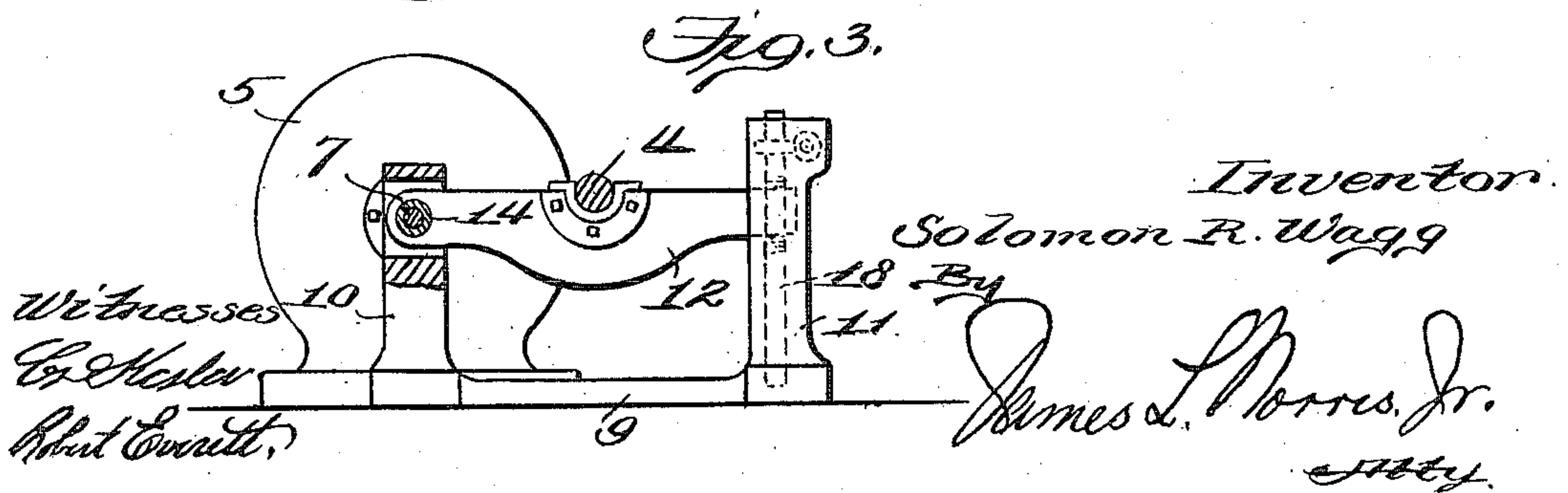
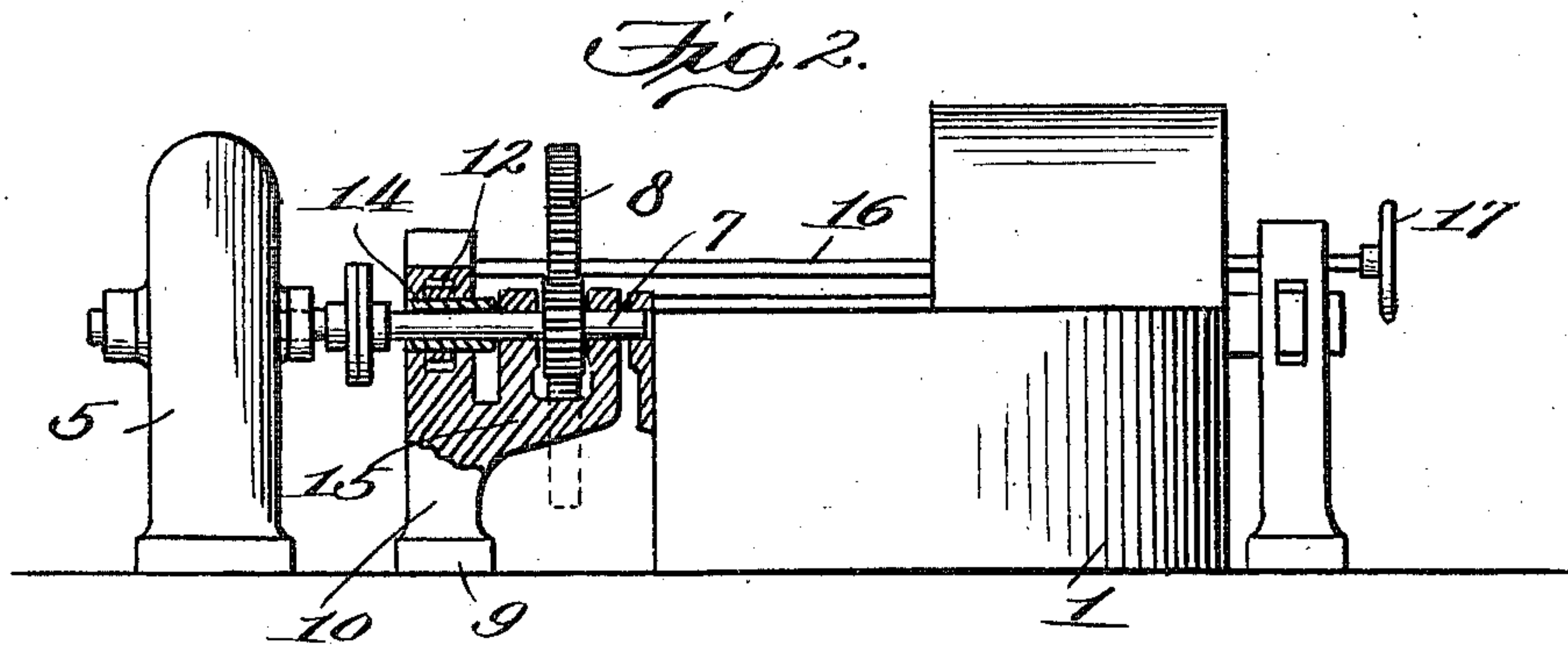
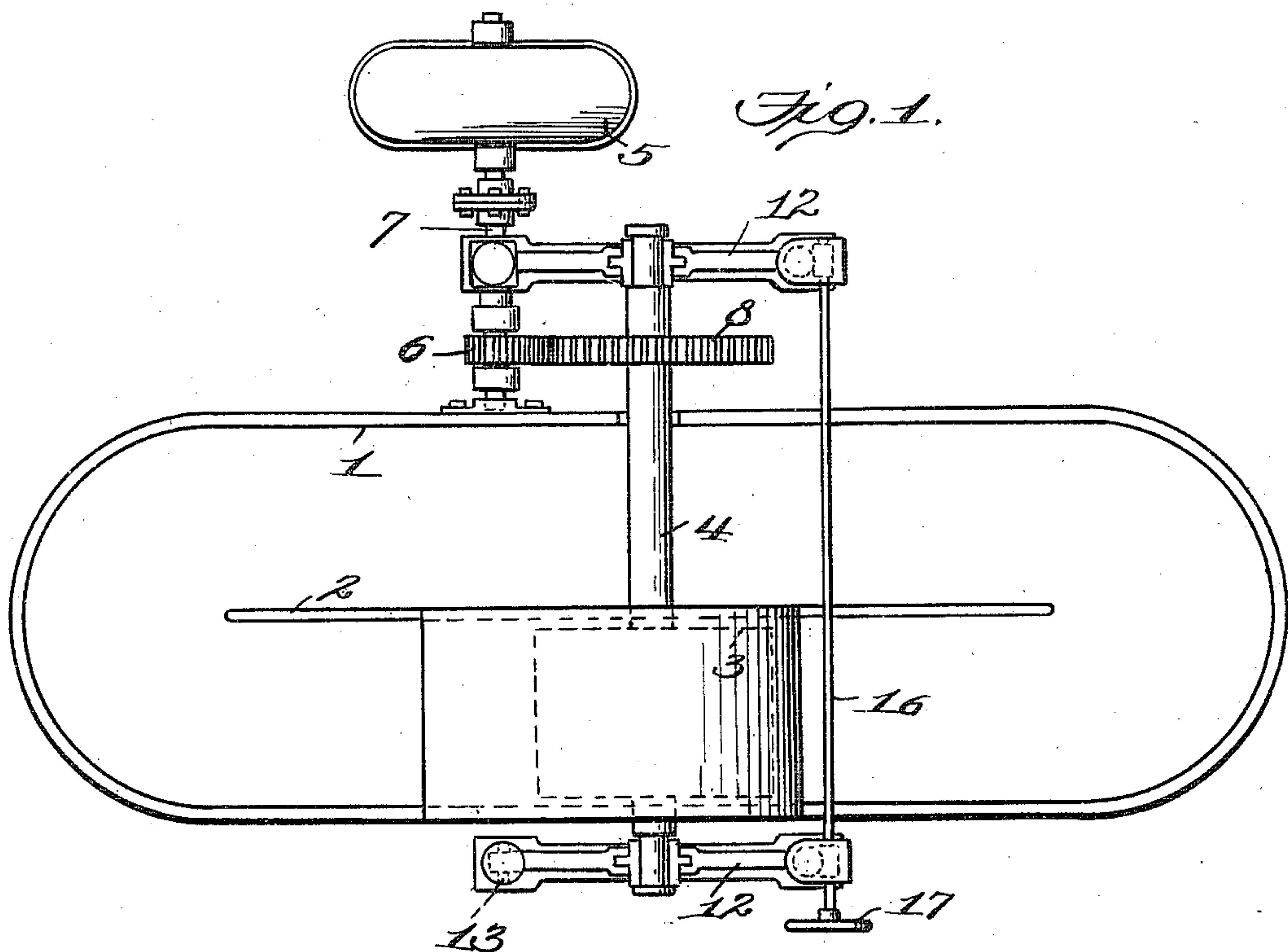


S. R. WAGG.
DRIVING MECHANISM FOR BEATING ENGINES.
APPLICATION FILED AUG. 5, 1910.

983,187.

Patented Jan. 31, 1911.



UNITED STATES PATENT OFFICE.

SOLOMON R. WAGG, OF APPLETON, WISCONSIN, ASSIGNOR OF ONE-THIRD TO JAMES B. WAGG AND ONE-THIRD TO WILLIAM L. WAGG, BOTH OF APPLETON, WISCONSIN.

DRIVING MECHANISM FOR BEATING-ENGINES.

983,187.

Specification of Letters Patent.

Patented Jan. 31, 1911.

Application filed August 5, 1910. Serial No. 575,808.

To all whom it may concern:

Be it known that I, SOLOMON R. WAGG, a citizen of the United States, residing at Appleton, in the county of Outagamie and State of Wisconsin, have invented new and useful Improvements in Driving Mechanisms for Beating-Engines, of which the following is a specification.

This invention relates to improvements in driving mechanisms for beating engines and it has for its object to provide for a more efficient driving relation between the electric motor and the beater roll shaft than is known and employed at the present time.

Originally the drive for these engines was of the pulley and belt type. This was superseded by the drive now in general use; viz., an electric motor and a chain connecting the motor shaft and the beater roll shaft. The disadvantages of this drive are first, a considerable loss of power; second, the necessity for frequent lubrication of the chain, practically about once an hour; third, the fact that smooth running of the beater roll is not secured; and fourth, the fact that adjustments of the position of the beater roll, in a number of instances, provide on the one hand for too much slack in the transmission train or, on the other hand, for too great tension. The object stated in the first paragraph is secured by the elimination of these disadvantages.

An embodiment of the invention is illustrated by way of example in the accompanying drawings, wherein—

Figure 1 is a plan view showing a practical application of the improved driving mechanism; Fig. 2 is an end view partly in section; and Fig. 3 is a detail view in side elevation and part section showing the assemblage of the bearers for the roll shaft.

Similar characters of reference designate corresponding parts throughout the several views.

The beating engine may be of any approved construction. In the example shown, the engine comprises a vat 1, separated into communicating longitudinal channels by a partition 2 and the beating roll 3 is arranged in one of the channels and is mounted on a shaft 4 which extends transversely of the vat.

The engine is operated, preferably, by an electric motor 5. This motor is not connect-

ed directly to the shaft 4 but an intermediate train, embodying the small pinion 6 on the motor shaft 7 and the large gear 8 on the shaft 4, is employed. With a train of this character it is essential that the pinion 6 and gear 8 be held in a rigid position with respect to the pitch line, in order to secure a quiet running of the transmission train and a smooth running of the beating roller. For this purpose a special construction of shaft supporting means is provided at each side of the machine. Such supporting means includes, *inter alia*, a U-shaped frame having a base 9 and upright standards 10 and 11 which are rigidly, preferably integrally, associated with the base. The bearings for the shaft 4 are arranged centrally of bearer arms 12. These extend between the standards 10 and 11, their end portions projecting into slots in said standards. The end portions of the bearer arms which are disposed in the slots of the standards 10 are pivoted and the end portions of said arms which are disposed in the slots of the standard 11 are associated with adjusting means to be hereafter described. The pivots of the arms 12 are arranged in axial coincidence with the shaft 7, the pivot of the arm 12 at the right hand end of the engine comprising a pin, as 13, and the pivot of the arm 12 at the left hand end of the engine comprising a sleeve 14 which surrounds the shaft 7. The standard 10 at the left hand end of the engine is provided with spaced brackets 15 which serve as additional supports for the shaft 7 and between which the pinion 6 is arranged.

The adjusting mechanism to which reference has been made may be of known form, and, as shown, comprises a shaft 16 which extends transversely of the engine, passing through the standards 11 and having at one end thereof a hand wheel 17. The shaft 16 is provided with worms and these engage with worm wheels fitted on vertical shafts 18 which are disposed in recesses or slots in the standards 11 and are threaded through a suitable extent. The threaded portions of the shafts 18 are so associated in any desired manner with the adjacent ends of the bearer arms 12 as to produce a raising and lowering of said arms on their pivots consequent to a corresponding rotation of the shaft 16.

The rigid association of the standards 10 and 11 with the base 9 and the relation of

the bearer arms to these standards provides for the running of the pinion 6 and gear 8 without the slightest deviation from their pitch line in any position of the beater roll and it follows that the rotation of the pinions is without noise and undue wear and that a smooth running of the beater roll is provided for under all conditions. These advantages result from the fact that it is impossible for the bearer arms to have any play or loose movement which would withdraw the gear 8 from the pitch line. The assemblage of the bearer arms also provides for a mathematically correct relation of the driving elements in any position of the beater roll and eliminates the necessity of slack adjusters or equivalent arrangements. The manner of relating the motor to the beater roll shaft renders it possible to satisfy speed requirements with a small, high power motor and hence provides for greater economy than can be secured by the use of a directly connected motor or a motor geared to the beater roll shaft by a chain or belt.

In considering the appended claims regard must be had of the fact that variations in the arrangement, and structure of minor details, may be practiced without departing from the spirit of the invention.

Having fully described my invention, I claim:

1. The combination with a motor and a beater roll shaft, of U-shaped supporting frames, each including a base and standards rigidly associated with the base, bearer arms extending between corresponding standards and supported thereby, the bearer arms in turn supporting the beater roll shaft, a motor shaft journaled in one of the standards and pinion gearing connecting the motor shaft and the beater roll shaft.

2. The combination with a motor and a beater roll shaft, of U-shaped supporting frames, each including a base and standards

rigidly associated with the base, a motor shaft journaled in one of the standards, bearer arms extending between corresponding standards, the bearer arms being each pivoted to a standard adjacent thereto and having their pivots axially coincident with the motor shaft, means associated with the other standards and related to the adjacent ends of the bearer arms in a manner to produce the raising or lowering of said arms on their pivots, the bearer arms supporting the beater shaft, and pinion gearing connecting the motor shaft and beater shaft.

3. The combination with a motor and a beater roll shaft of a pair of bearer arms supporting the beater roll shaft, frames supporting the bearer arms, one of the frames including a standard, the shaft of the motor being journaled in said standard, and pinion gearing connecting the shafts.

4. The combination with an electric motor, its shaft, and a beater roll shaft, of end supports for the beater roll shaft, one of the supports being common to the motor shaft, and pinion gearing connecting the shafts.

5. The combination with an electric motor, its shaft, and a beater roll shaft, of pinion gearing connecting the shafts, and a supporting frame common to the shafts.

6. The combination with an electric motor, its shaft, and a beater roll shaft, of pinion gearing connecting the shafts, and a supporting frame common to the shafts, the supporting frame including a pivotally adjustable element to support the beater roll shaft and to maintain the pinions true to their pitch line.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SOLOMON R. WAGG.

Witnesses:

C. S. DICKINSON,
F. C. SCHLOSSER.