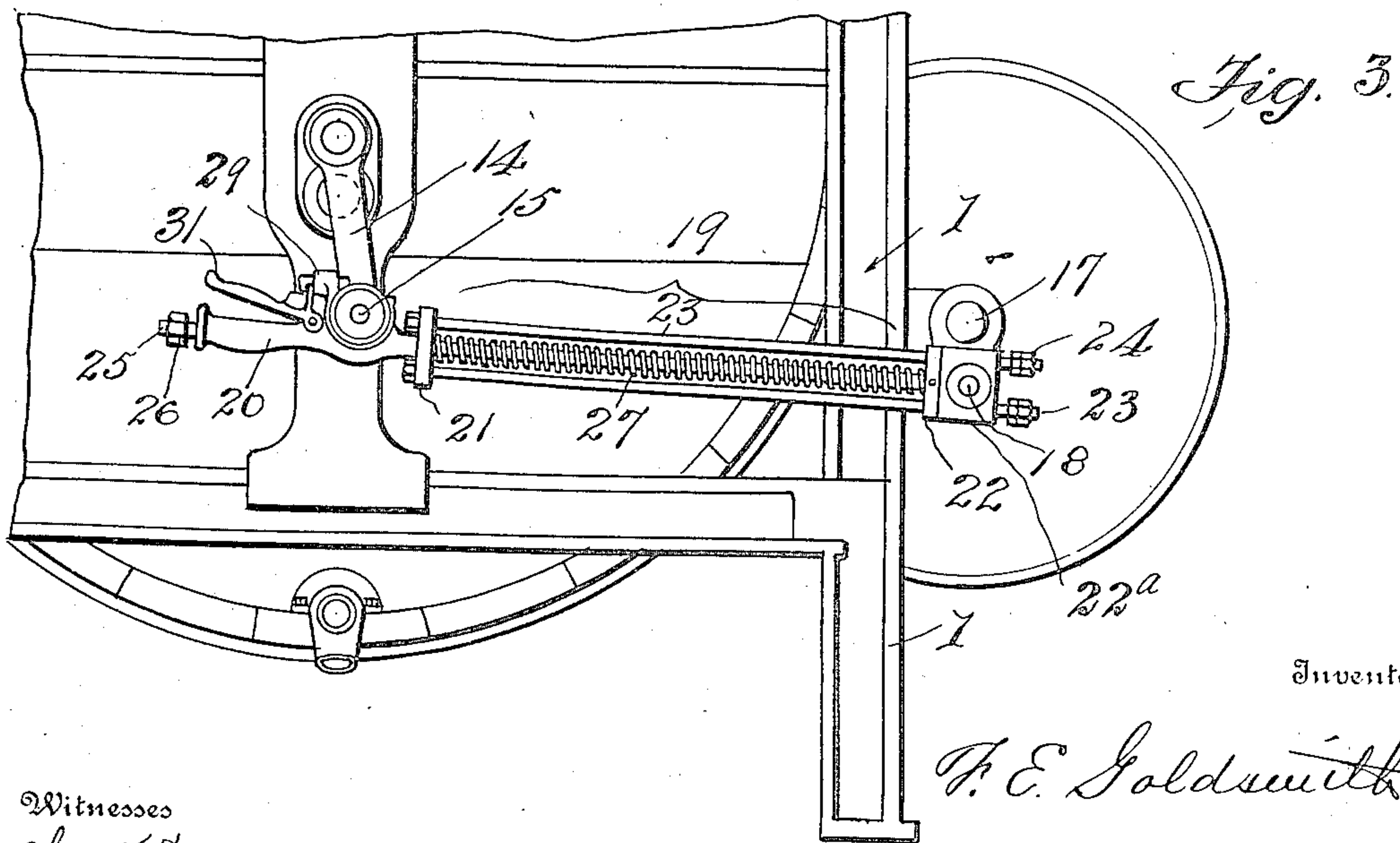
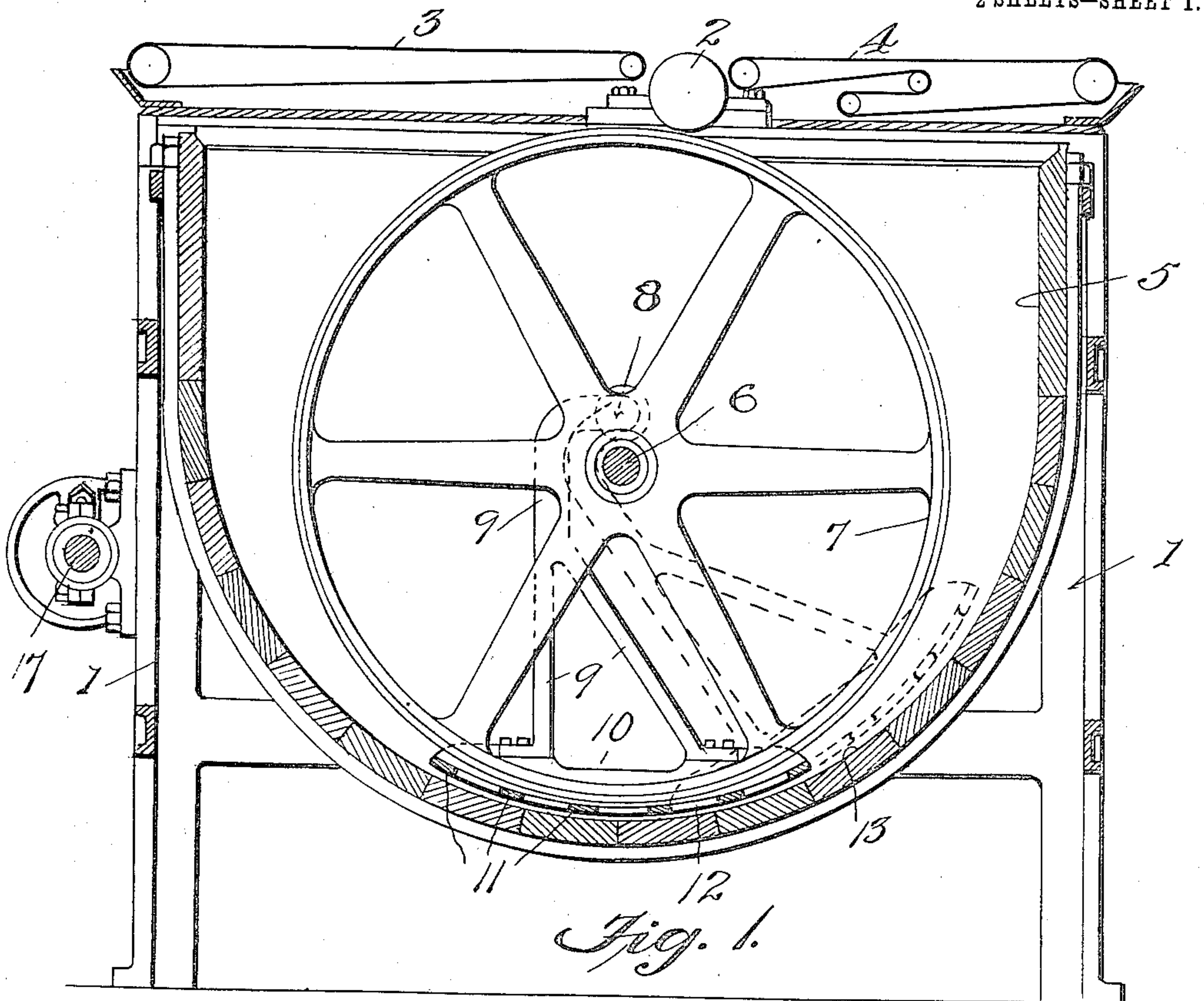


F. E. GOLDSMITH.
TILE COATING MACHINE.
APPLICATION FILED APR. 27, 1907.

917,586.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.



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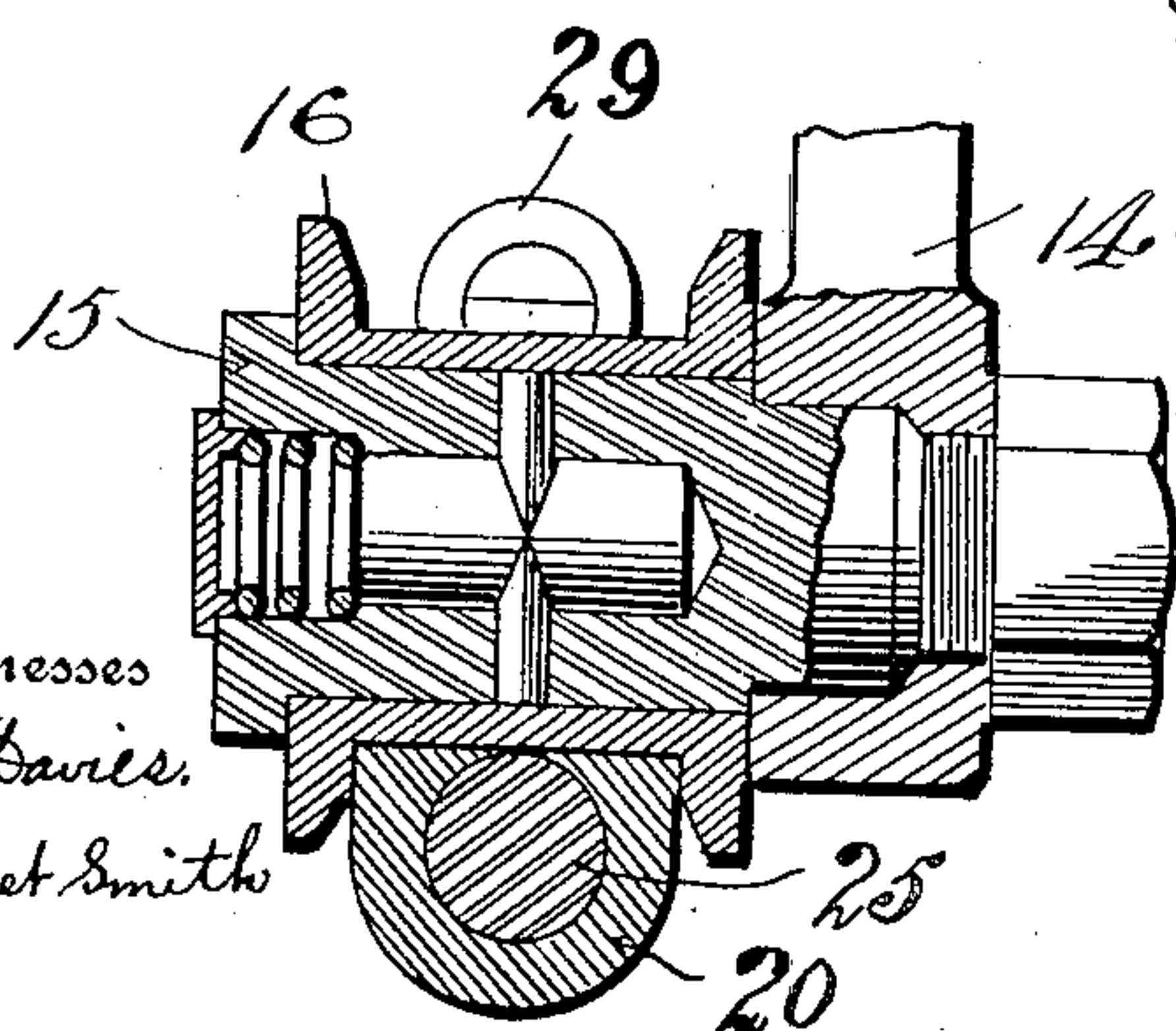
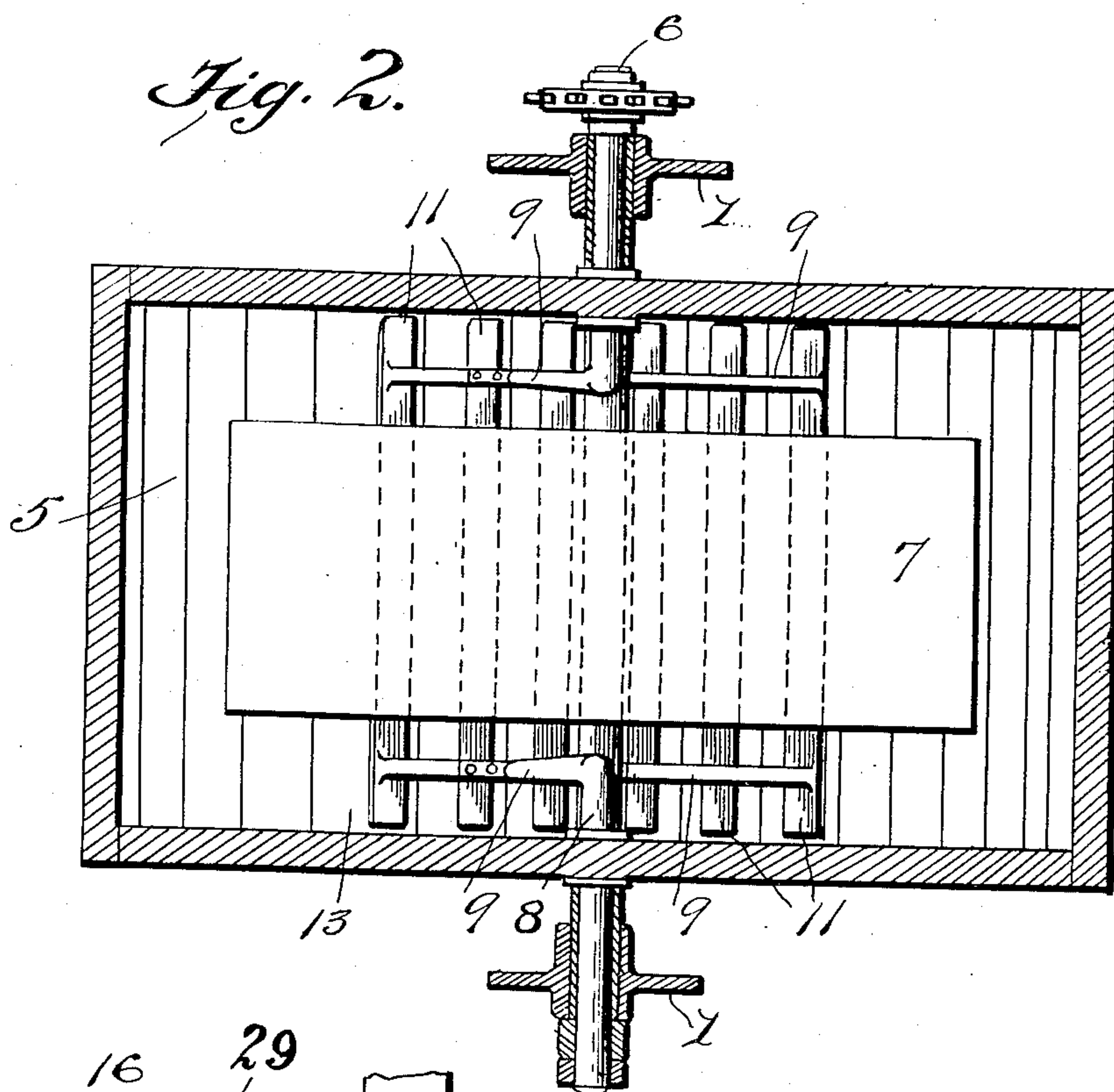
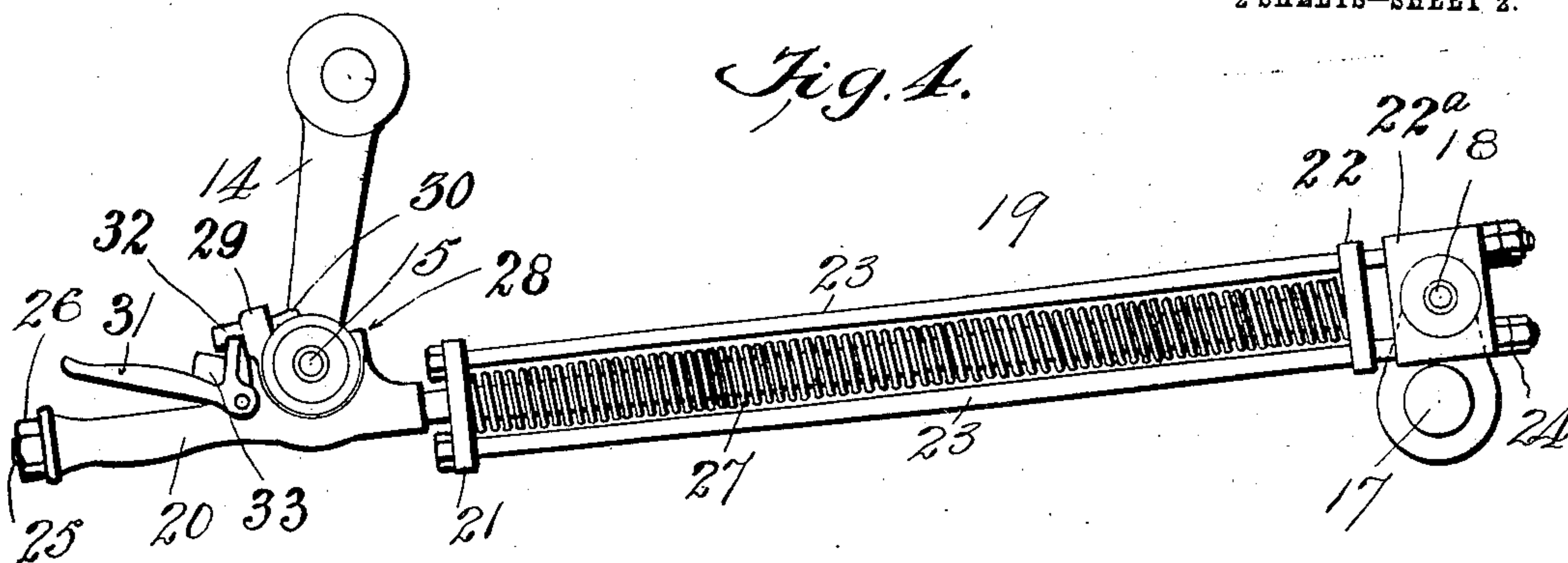
Margaret Smith

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

FREDERICK E. GOLDSMITH, OF MIDDLETOWN, OHIO, ASSIGNOR TO THE CERAMIC MACHINERY COMPANY, OF HAMILTON, OHIO.

TILE-COATING MACHINE.

No. 917,586.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed April 27, 1907. Serial No. 370,655.

To all whom it may concern:

Be it known that I, FREDERICK E. GOLDSMITH, a citizen of the United States, residing at Middletown, in the county of Butler and State of Ohio, have invented a certain new and useful Tile-Coating Machine, of which the following is a specification.

My invention relates to tile coating machines and more especially to means for agitating coating material during the coating operation. The nature of material used for coating tile is generally such that it requires to be continuously stirred or agitated to prevent the settling of heavier constituents, to keep the mixture in a fluid state, or for other reasons.

My invention provides a suitable agitator and further adapts the agitator for use in connection with a machine which has a rotary drum or similar device for elevating the coating material to the point where it is applied to the tile or to the device which is employed for directly applying the material to the tile.

A further object of my invention is to construct and arrange the agitator in relation to other parts of the machine so that it may readily be brought to an accessible position for cleaning with a minimum of disturbance to other parts of the machine.

Another object is to provide a cushioning or yielding connection between the agitator and the device which drives it. This is desirable because if the coating process is discontinued for any considerable time with coating material remaining in its receptacle, the material is generally of such a composition that it hardens. On re-commencing coating and agitating the material, therefore, the agitator is embedded in or encounters a quite solid mass of material which would, if a rigid driving connection were provided, cause damage or breakage of either the agitator or its driving mechanism, or some other related part.

A still further object is to provide a ready means for connecting and disconnecting the agitator with its driving member to facilitate moving the agitator to the cleaning position.

The accompanying drawing illustrates exemplifying structures embodying the invention.

In the drawings—Figure 1, is a vertical

longitudinal section of a machine embodying my invention; Fig. 2, a plan view of the tub, drum, and agitator; Fig. 3, a detail view of the yielding driving connection; Fig. 4, another view of the driving connection in operative position; and Fig. 5, an enlarged detail of the pitman connection.

A suitable frame 1 supports at its top the coating device or devices proper which in the present instance are exemplified by a coating roll 2 although any other of many different forms of coating devices may be employed. Feed and delivery aprons 3, 4 are provided for supplying tile to and removing them from the coating device, respectively.

Other essential features of a coating machine such as driving mechanism etc., of any suitable construction are to be assumed.

Below the coating device and conveniently supported within the frame is a tub 5 constituting a coating receptacle. Mounted in suitable bearings conveniently in the frame and passing through the side walls of the tub is a shaft 6 carrying a rotary drum or other coating elevating device 7. Two short agitator shafts 8 are revolvably mounted conveniently in bearings in the frame preferably above shaft 6 and pass through the side walls of the tub. Arms 9 are connected with or formed continuous with the inner ends of the shafts 8 and are curved laterally and downwardly, as shown, so as to avoid shaft 6 and yet permit turning of shafts 8 through a considerable arc without the arms encountering the shaft 6. The agitator proper is designated in general by numeral 10 and may consist, as in the exemplification shown, of a grid having cross-bars 11 extending across the tub near the bottom and connected to end pieces 12 which are in turn connected to the ends of arms 9. The bottom of the tub, as at 13, is preferably curved on an arc struck from the center of shafts 8, and the grid 11 conforms to this curvature and lies between the drum 7 and the bottom of the tub and close to the latter.

By reason of the curvature of arms 9 and the arrangement of the supporting shafts for the agitator in relation to that of the drum, the agitator may swing back and forth in a wide arc as shown by the dotted lines without interfering with other parts, thoroughly stirring the coating material in the tub and

particularly agitating it nearest the bottom of the tub where the heavier constituents of the material most tend to accumulate.

By swinging the agitator to the left, as seen in Fig. 1 it may be brought up above the drum and near the coating device where it is readily accessible for cleaning. For this purpose apron 3 and other parts which may normally lie across the upper part of the frame may be hinged or otherwise arranged to be swung out of the way or entirely removed while the agitator is being cleaned.

To the outer end of one of the agitator shafts 8 is connected a crank arm 14 which carries a pin 15 on which is mounted revolvably a spool or thimble 16. Suitably mounted on the frame is a driving shaft 17 which may or may not impel other parts of the coating machine and the agitator. This shaft carries a crank pin 18.

Numeral 19 designates in general a pitman connecting crank pin 18 and crank arm 14. Thimble 16 has connected to it in a manner which will later be described a longitudinally bored handle 20. Through the bore of handle 20 runs a main or center rod 25 carrying at one end beyond the handle a nut 26 serving as a stop, and connected at the other end to an operatively integral head 22. Crank pin 18 carries a block 22^a through which pass distance rods 23 carrying stop nuts 24 beyond the block and secured at their other ends to a block 21 which is centrally bored so as to slide upon center rod 25. Distance rods 23 also pass through holes provided for the purpose in head 22. Between heads 21 and 22, surrounding the center rod, is a helical compression spring 27. Under ordinary conditions, while the machine is in operation, pitman 19 acts in an ordinary manner to oscillate the agitator while shaft 17 is in movement. If, however, the coating material has solidified, as it frequently does after operation of the machine has been suspended for some time, when shaft 17 is set in motion the agitator will move not at all or only slightly on account of the resistance of the coating material.

As seen in Fig. 3, the shaft rotating in the direction of the arrow and the crank pin 18 moving toward the center of the machine, spring 27 is compressed between heads 21 and 22 more or less depending upon the resistance of the agitator to movement; when this compression occurs center rod 25 slides through the handle and projects at the left hand end, as seen in Fig. 3, and block 22^a and head 22 slide upon distance rods 23 which project at the right hand end of the block. The compression of the spring of course varies with the resistance of the agitator and in some cases if the agitator is held stationary the crank pin will make a full revolution without moving the agitator but

only compressing the spring. When crank pin 18 moves away from the center of the machine the spring still acts under compression to urge the agitator to move in the corresponding direction before the parts assume the position shown in Fig. 4. That is, block 22^a engages the stop nuts 24 on the ends of the distance rods, head 21 is moved away from handle 20 and slides on the center rod, and stop nut 26 on the end of the center rod comes up against the end of the handle. The spring is now compressed as before between heads 21 and 22. As rotation of shaft 17 continues alternately urging the agitator in opposite directions the coating material becomes gradually loosened and the agitator is permitted to move correspondingly until finally the mass is entirely loosened and the agitator moves in a normal manner, with the spring extended and holding the parts in normal running position.

To permit the agitator to be readily moved to the cleaning position it is desirable to provide ready means of disconnecting the pitman from crank arm 14. Such a device is shown in Figs. 4 and 5. Handle 20 is provided with projections 28, 29 which embrace thimble 16 on pin 15. Passing through a bore in projection 29 is a latch 30 extending above the thimble and normally preventing removal of the handle from the thimble. The handle carries a latch lever 31 pivoted to it and having a finger 32 entering a recess in latch 30. The latch lever is held outward from the handle and the latch thereby held in normal position by means of a coiled spring carried in housing 33 in the latch lever. To disengage the pitman, the latch lever is moved toward the handle withdrawing the latch from engagement with the thimble and permitting the handle to be lowered away from the thimble. The agitator can then be swung up to cleaning position in the manner before described.

The structures shown as embodiments of my invention are only exemplifications and I contemplate many and wide alterations therein within the scope of the invention.

What I claim is:

1. In a machine for coating, the combination of a coating receptacle, a lifting drum, an agitator, and means for impelling the agitator.
2. In a machine for coating, the combination of a coating receptacle, a rotary drum for elevating coating material, an agitator, and means for impelling the agitator.
3. In machines for coating, the combination of a coating roll, a coating receptacle, a drum therein for carrying coating material, an agitator arranged to move between the drum and the bottom of the receptacle, and means for impelling the agitator.
4. In machines for coating, the combina-

tion of a coating roll, a coating receptacle, a rotary drum for elevating coating material, an agitator comprising a grid arranged to move between the drum and the bottom of the receptacle, a pivotal mounting for the agitator above the axis of the drum, and means for impelling the agitator.

5. In machines for coating, the combination of a coating receptacle, a rotary drum for elevating coating material, an agitator comprising a grid arranged to move between the drum and the bottom of the receptacle, a pivotal mounting for the agitator above the axis of the drum, curved arms connecting the agitator and its mounting so as to permit the agitator to oscillate through a considerable arc in each direction without encountering the axis of the drum, and means for impelling the agitator.

6. In machines for coating, an agitator, a driving shaft, and a yieldable link connection between the agitator and shaft for impelling the agitator.

7. In machines for coating, the combination of an oscillatory agitator having a crank arm, a driving shaft carrying a crank, and a

yieldable connecting rod connecting the crank and crank arm.

8. In machines for coating, the combination of an agitator mounted to oscillate, a crank arm carried by the agitator, a crank pin thereon, a driving shaft, a crank thereon, a pitman connecting the shaft crank and the agitator crank pin, and a quickly releasable device for connecting and disconnecting the pitman from the crank pin.

9. In machines for coating, the combination of a coating receptacle, a drum for elevating coating material therein, an oscillatory agitator arranged to move between the drum and the receptacle and mounted so that it may be swung up to convenient cleaning position, a driving shaft, and a connecting rod for impelling the agitator, which may be readily disconnected from the agitator to permit the moving of the latter to cleaning position.

FREDERICK E. GOLDSMITH.

Witnesses:

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M. S. BELDEN.