

No. 880,148.

PATENTED FEB. 25, 1908.

K. J. LATHROP.  
SPRING MOTOR.

APPLICATION FILED MAY 18, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

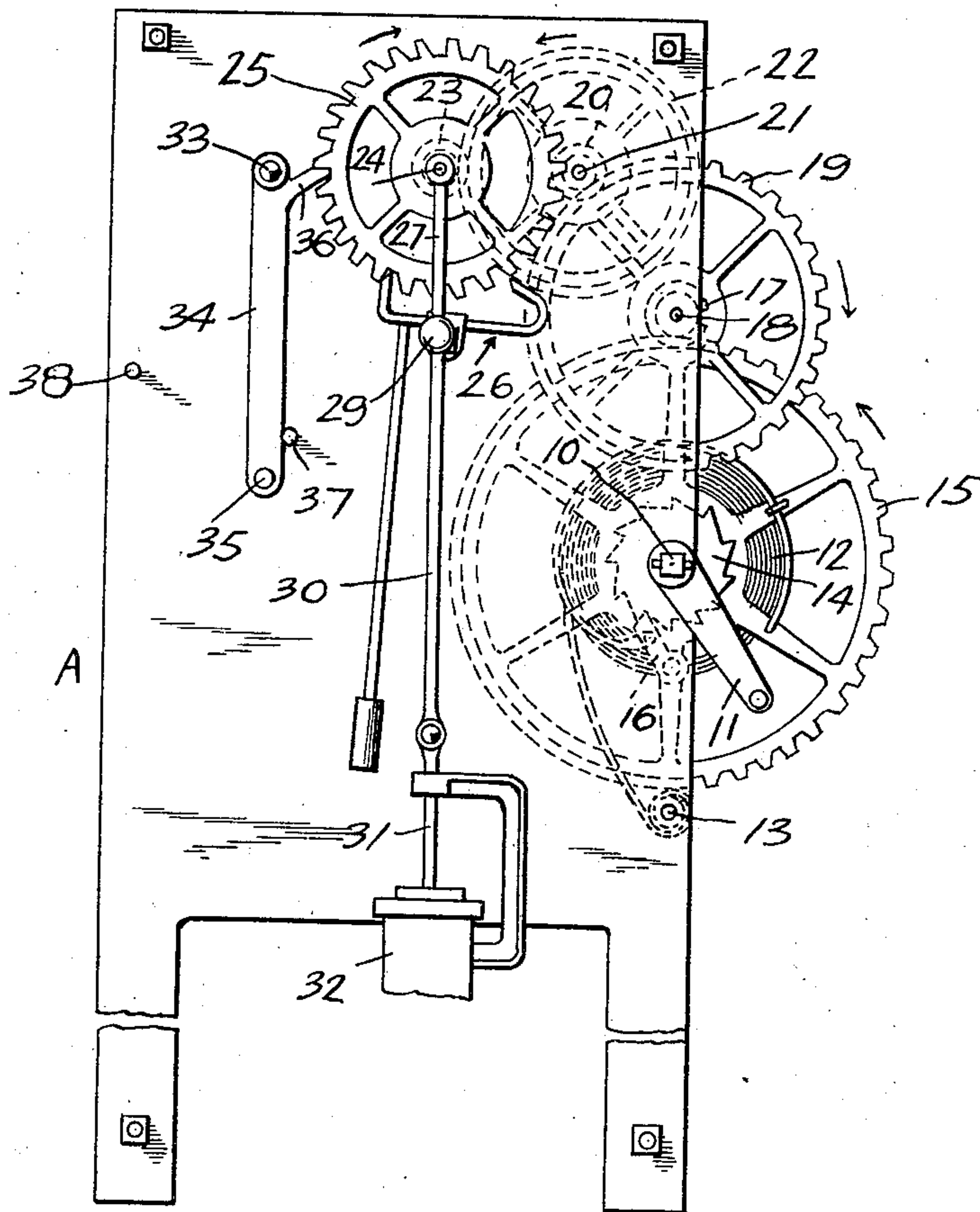
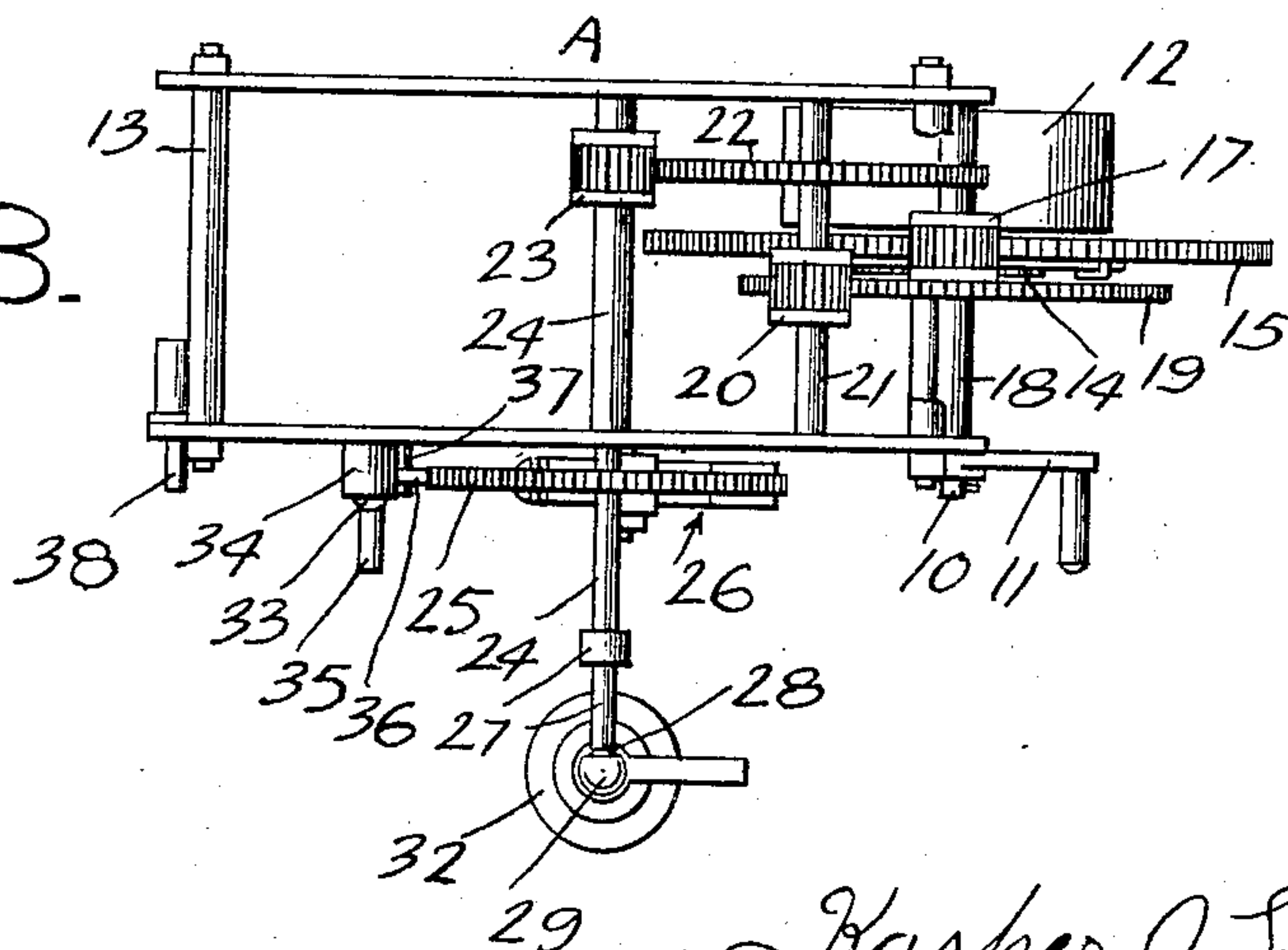


Fig. 3.



Witnesses  
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2 SHEETS—SHEET 2.



# UNITED STATES PATENT OFFICE

KASPER J. LATHROP, OF CATHAY, NORTH DAKOTA.

## SPRING-MOTOR.

No. 880,148.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed May 18, 1907. Serial No. 374,355.

*To all whom it may concern:*

Be it known that I, KASPER J. LATHROP, a citizen of the United States, residing at Cathay, in the county of Wells, State of North Dakota, have invented certain new and useful Improvements in Spring-Motors; 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.

This invention relates to motors and more particularly to that class known as spring motors.

The primary object of the invention is to provide a motor of this class designed more especially for the purpose of operating a well pump, the motor being so constructed that it can be applied to almost any pump now in use and can be thrown into and out of gear as may be desired.

In the accompanying drawings, Figure 1 is a front elevation of the motor showing its application to a pump, Fig. 2 is a side elevation thereof, Fig. 3 is a top plan view, Fig. 4 is a detail front elevation of a portion of the motor illustrating in full lines the position of the lever for throwing the motor into and out of gear when the lever is in gear and in dotted lines when the lever is out of gear, and, Fig. 5 is a detail vertical sectional view taken through one of the stop pins for the lever by which the motor is put in and out of operation.

As shown in the drawings the motor comprises a frame which is indicated in general by the reference character A. Rotatably mounted in this frame is a shaft 10 having one of its ends squared for the detachable engagement therewith of a crank handle 11 whereby the shaft may be rotated. One end of a spring 12 is connected with this shaft and the other end of the spring is connected to a cross bar 13 forming a portion of the frame. Fixedly mounted upon the shaft is a ratchet 14 and loosely mounted upon the shaft is a gear wheel 15, there being a pawl 16 upon the gear wheel for engagement with the ratchet, this being the usual construction by means of which the shaft may be rotated to wind the spring thereon and power converted from the spring to the gear. The gear meshes with a pinion 17 upon a shaft 18 also journaled in the frame and upon this shaft 18 is fixed a gear 19 which in turn meshes with a gear 20 upon a shaft 21. This

shaft 21 is also rotatably mounted in the frame and carries a gear 22 which is in mesh with a pinion 23 carried by a shaft 24. This shaft 24 is the shaft from which the pump rod is to be driven and the connections between the said shaft and the pump rod will be presently fully described.

Upon the last named shaft there is fixed an escapement wheel 25 coacting with which is the ordinary form of pallet governor 26 which as will be readily understood, serves to govern the speed of rotation of the shaft 24.

Fixed in any suitable manner upon the extreme forward end of this shaft 24 is a crank 27 having a ball end 28 which is received in a socket 29 formed in the upper end of a pitman 30. This pitman 30 is pivoted at its lower end to the upper end of the pump rod 31 of a pump 32 illustrated in Fig. 1 of the drawings. From the foregoing it will be observed that as the shaft 24 rotates, a vertical reciprocatory movement will be given to the pump rod 31. It is however desirable that means be employed whereby the motor may be rendered inoperative at times and I have provided a means for this purpose which will now be described.

Pivoted as at 33 to the frame A is the upper end of a lever 34 provided at its lower end with a handle 35. This lever has a tooth 36 projecting from one of its longitudinal edges and at a point adjacent its pivot 33 and when the lever is rocked in one direction, this tooth engages with the teeth of the escapement wheel 25 upon the shaft 24 and when rocked in the opposite direction the tooth disengages from the teeth of the escapement wheel, it being understood that when the tooth is in engagement the motor is rendered inoperative. In order that the lever may be held in either position, I have provided stop pins against which the lever is designed to abut. The stop pins for holding the lever in engagement with the escapement wheel and out of engagement with the same are indicated respectively by the numerals 37 and 38. The pin 38 projects through an opening 39 formed through the front of the frame of the motor and is provided at its inner end with a circular head 40 which normally opposes the rear face of the said portion of the frame and is held in this position by means of a spring 41 which bears against the head at one end and at its other end against the rear end of a socket 42 and secured upon the said rear face of the frame.



The pin 37 is fixed and it will be understood that when the lever is in the position shown in full lines in Fig. 4 and its tooth 36 is in engagement with the teeth of the escapement wheel 25, the lever will abut the pin 37 and in this manner prevent rotation of the escapement wheel. When the lever is moved to dotted line position in Fig. 4, however, the wheel will be freed.

10 What is claimed is—

1. In a motor of the class described, the combination with the motor frame, a driven shaft mounted in the frame, and a gear carried by the shaft, of a lever pivoted upon the frame and having a tooth adapted to engage with the teeth of the gear when the lever is in one position and to be out of such engagement when the lever is in another position, and a spring pressed stop pin arranged in the path of movement of the lever and adapted to hold it out of engagement with the gear.

2. In a motor of the class described, the

combination with the motor frame, a driven shaft mounted in the frame, and a gear carried by the shaft, of a lever pivoted upon the frame and having a tooth adapted to engage with the teeth of the gear when the lever is in one position and to be out of such engagement when the lever is in another position, a socket arranged upon the frame, a pin extending through the frame in the path of movement of said lever to hold the same out of engagement with the gear, the said pin being provided with a head which works in the socket, and a spring arranged in the socket and bearing against the head to normally hold the pin in extended position.

In testimony whereof, I affix my signature, in presence of two witnesses.

KASPER J. LATHROP.

Witnesses:

E. L. BISHOP,  
B. W. TAYLOR.