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MECHANISM FOR CONVERTING ROTARY INTO RECIPROCATORY MOTION.  
APPLICATION FILED MAY 1, 1908.

939,063.

Patented Nov. 2, 1909.

FIG. 1.

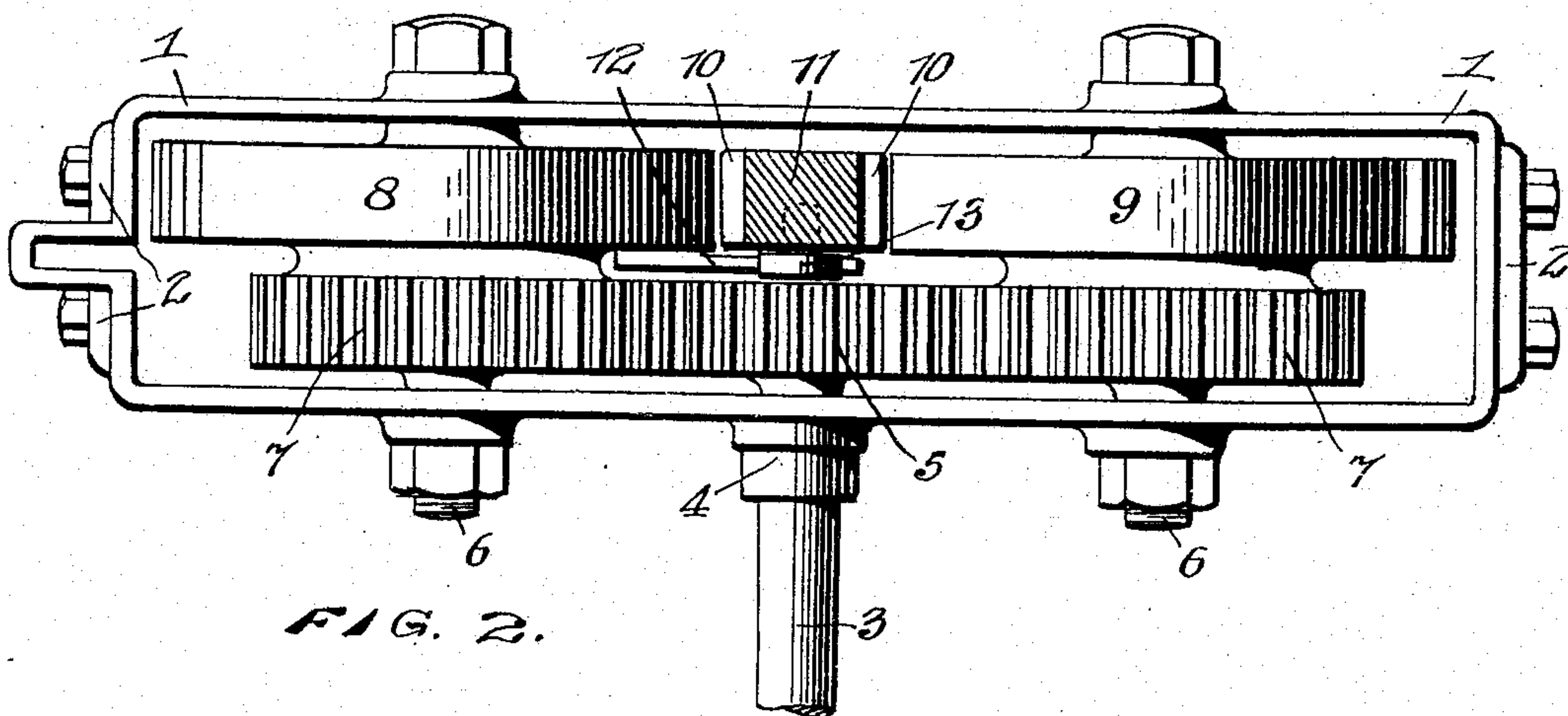
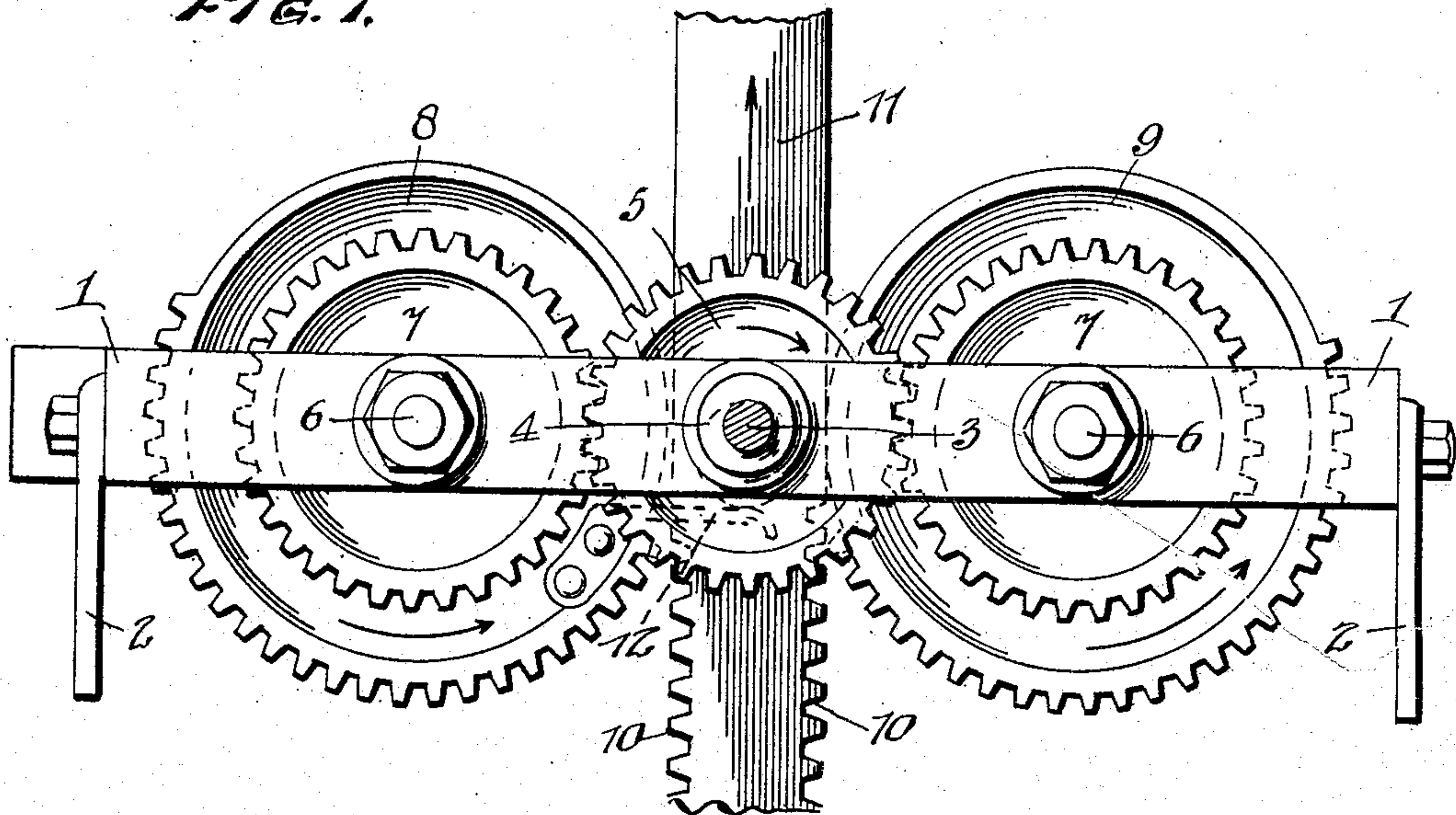


FIG. 2.

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# UNITED STATES PATENT OFFICE.

JOSEPH MYRHOLM, OF ODELL, ILLINOIS.

MECHANISM FOR CONVERTING ROTATORY INTO RECIPROCATORY MOTION.

939,063.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed May 1, 1908. Serial No. 430,348.

*To all whom it may concern:*

Be it known that I, JOSEPH MYRHOLM, citizen of the United States, residing at Odell, in the county of Livingston and State of Illinois, have invented certain new and useful Improvements in Mechanism for Converting Rotatory into Reciprocatory Motion, of which the following is a specification.

My invention relates to mechanism for converting rotatory into reciprocatory motion, and the object thereof is to provide a simple and inexpensive mechanism, for reciprocating a pump rod, from the rotating wind mill shaft.

Further objects and advantages of my present invention will appear in the course of the following description, in which reference is made to the accompanying drawing, forming a part of this specification, in which like numerals are used to designate like parts throughout the figures thereof, and in which,

Figure 1 is a front elevation of my improved apparatus, and Fig. 2 is a sectional plan view thereof.

In the practical embodiment of my invention, I provide a rectangular metallic frame 1, having angularly extending arms 2, bolted to the end thereof, and adapted for connection upon the inner metal frame in alignment with the rotating inner driven shaft 3 thereof, said shaft being led through a bearing 4 centrally of one of the longitudinal sides of the frame 1, and provided upon its end projecting within said frame, with a fixed gear wheel 5. Mounted through aligned bearings in the longitudinal sides of the frame 1, and projecting through said frame parallel with and equidistantly spaced from the driven shaft 3 on each side thereof, are short shafts 6 carrying pinions 7 thereon, aligned and in engagement with the gear wheel 5 of the said driven shaft 3. The short shafts 6, are further provided with aligned wheels 8 and 9 thereon, each of said wheels being in the form of mutilated gears, that is to say, each of said wheels is provided with gear teeth projecting upon its circumferential face half way therearound, which teeth are adapted to engage the said racks 10 of the pump rod 11, projecting

through the frame 1, and between the wheels 8 and 9, and adapted for vertical reciprocation at right angles to the driven shaft 3.

Inasmuch as the wheels 8 and 9 are rotated in relatively opposite directions, they are so arranged that their toothed portions will alternately become engaged with the pump rod 11 during their rotation, the wheel 8 constituting the lifting wheel, and the wheel 9 constituting the depressing wheel, for moving the pump rod upwardly and downwardly respectively.

The action of the depressing wheel 9 is uniform and smooth at all times, but in heavy winds the initial forward movement of the pump rod through its engagement with the toothed peripheral portion of the wheel 8, is difficult and uncertain, and if no means were provided to prevent it, the gears would be likely to bind and strip. In order to prevent this, I provide the lift wheel 8, with an angular projecting arm 12, securely bolted thereto, and extending forwardly of the pump rod 11, and located at the initially engaging end of its toothed peripheral portion. The pump rod for this purpose is also provided with a roller 13, mounted upon a stud and projecting therefrom, beneath which roller, the angular arm 12 of the wheel 8 is adapted to engage prior to the engagement of its toothed portion with the adjacent rack 10 of the said pump rod, in order that the pump rod will be started upon its forward movement when the said toothed portion of the wheel 8 and the said rack thereof, become engaged.

Having fully described my invention, I claim:

In an apparatus of the character described, the combination of an integral rectangular frame, of spaced shafts journaled through both sides of said frame and near the ends thereof, each of said spaced shafts being provided with a pinion and a mutilated gear-wheel rigidly secured together, a driving shaft journaled through one side of said frame and at a point equidistant from said spaced shafts, said driving shaft being provided upon the extremity projecting within said frame with a pinion rigidly secured thereto, and meshing with said first named

pinions, a reciprocating rod provided with  
opposite rack faces arranged between said  
mutilated gear-wheels and adapted to be en-  
gaged alternately thereby, said reciprocating  
5 rod being provided with a roller upon one  
side thereof, of an arm secured to the mu-  
tilated gear-wheel which is adapted to raise  
said reciprocating rod, said arm being adapt-  
ed to periodically engage said roller to ad-

vance said reciprocating rod, substantially 10  
as and for the purpose described.

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

JOSEPH MYRHOLM.

Witnesses:

F. N. HOSSACK,  
STELLA BOVIK.