No. 794,549. PATENTED JULY 11, 1905.

E. PUTNAM.

MECHANICAL MOTOR.

APPLICATION FILED OCT. 6, 1904.

Fig. 1.

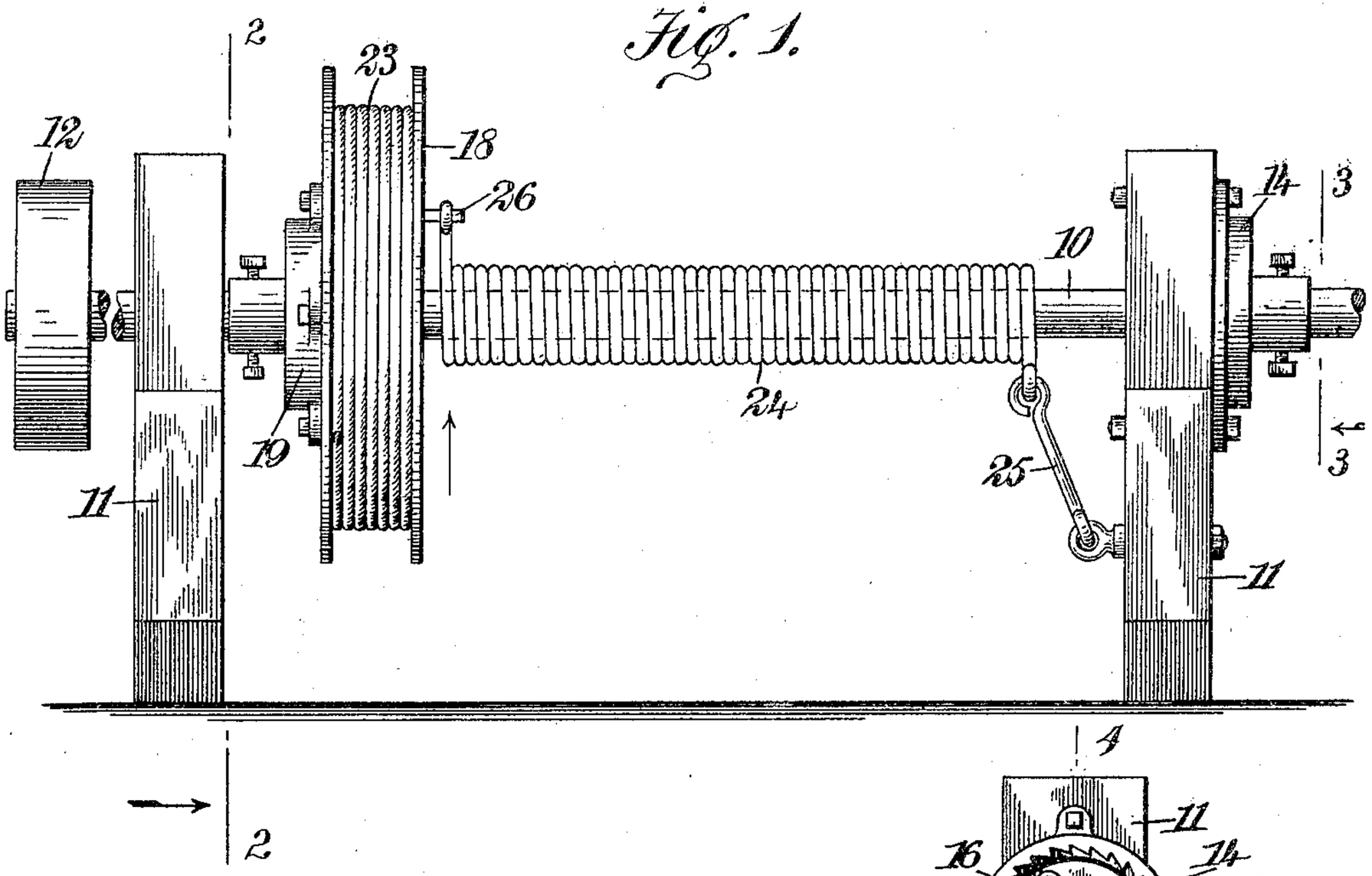
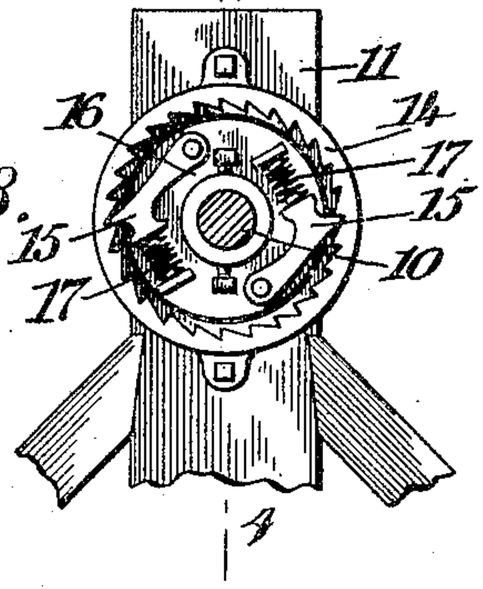


Fig. 3.



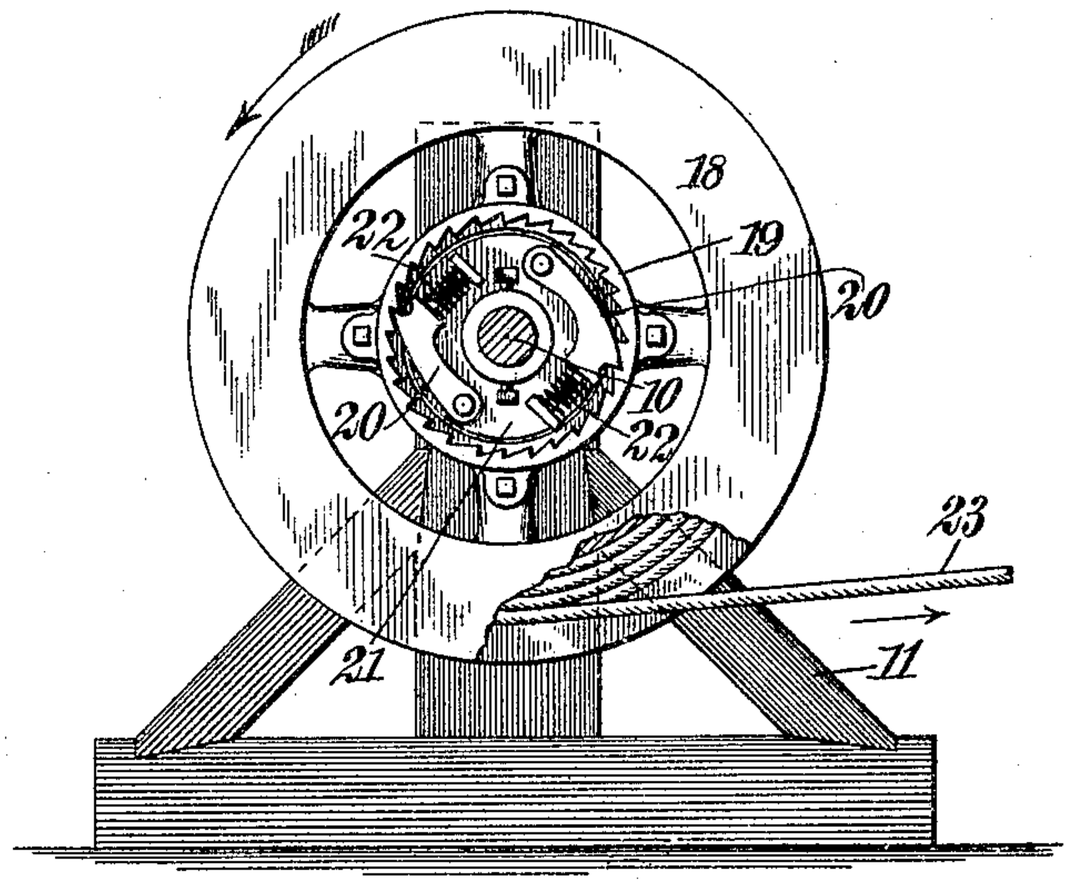


Fig. 2.

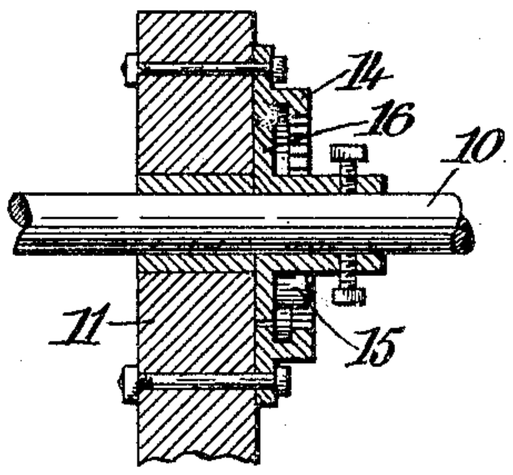


Fig. 4.

WITNESSES:

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INVENTOR

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BY Munn & Co

ATTORNEYS

No. 794,549. Patented July 11, 1905.

UNITED STATES PATENT OFFICE.

EDMOND PUTNAM, OF ROSSVILLE, ILLINOIS.

MECHANICAL MOTOR.

SPECIFICATION forming part of Letters Patent No. 794,549, dated July 11, 1905.

Application filed October 6, 1904. Serial No. 227,401.

To all whom it may concern:

Be it known that I, EDMOND PUTNAM, a citizen of the United States, and a resident of Rossville, in the county of Vermilion and State of Illinois, have invented a new and Improved Mechanical Motor, of which the following is a full, clear, and exact description.

The invention relates to a mechanical motor for elevating materials or for driving machinery of various sorts. It is particularly useful in connection with animal-power as contradistinguished from use in transmitting engine-power.

In its preferred form the apparatus embodies a shaft, being connected in any suitable way with the part to be driven. Coacting with this shaft is a pawl-and-ratchet device or its equivalent for preventing the return movement of the shaft. The shaft carries loosely a drum, a pawl-and-ratchet device acting between the shaft and drum to cause the shaft to turn in one direction with the drum, and, finally, there is applied to the drum a spring or its equivalent of any suitable form, which resists rotation of the drum in one direction and which when the drum is released rapidly returns the drum to its first position. The pawl-and-ratchet devices are so arranged that when the drum is turning to wind the spring the shaft turns with the drum and when the drum is returning under the action of the spring the shaft is held stationary. In this manner a power impulse is given to the shaft each time that the spring is wound, and at the end of this impulse the spring serves quickly to return the drum to its former position, whereupon a repetition of the operation may take place.

Reference is had to the accompanying drawings, which illustrate as an example the preferred embodiment of the invention, in which drawings like characters of reference indicate like parts in the several views, and in which—

Figure 1 is a side elevation of the apparatus. Fig. 2 is a sectional elevation on the line 2 2 of Fig. 1. Fig. 3 is a sectional elevation on the line 3 3 of Fig. 1, and Fig. 4 is a detail section on the line 4 4 of Fig. 3.

10 indicates the said shaft, which is revolubly mounted in supports 11 and which is provided with a pulley 12 or with any other desired means for transmitting the movement of the shaft. Mounted on one of the supports 11 is an internal ratchet-ring 14, with which coacts one or more spring-pawls 15. Said pawls are pivoted on a disk 16, which turns with the shaft 10, and are provided with springs 17, which hold the pawls in active position. These devices prevent rotation of the shaft in one direction, but allow unrestrained rotary movement of the shaft in the other direction. 18 indicates the drum, which is loosely mounted on the shaft, and which, as best shown in Fig. 2, has fastened thereto an internal ratchet-ring 19. With this ring pawls 20 coact. These pawls are carried pivotally on a disk 21, fastened to and turning with the shaft 10. The pawls are held in active position by springs 22, and the arrangement of the various parts is such that when the drum 18 rotates in one direction it turns with it the shaft 10, while rotation of the drum in the other direction is allowed independently of the shaft.

23 indicates a cable, which according to the form of the invention here shown is wound over the drum and serves as a means to impart rotating movement to the drum in that direction in which the drum turns to rotate with it the shaft 10.

24 indicates the spring, which preferably is of the torsional type and is coiled loosely around the shaft 10, one end of the spring being anchored by a link 25 to one of the supports 11 and the other end being attached by a pin 26 or other desired means to the drum 18. In the operation of the device, assuming that the shaft 10 is in connection through the medium of the pulley 12 or other desired means with the part to be driven, upon applying power from any desired source to the cable 23 the same is unwound from the drum 18 and the drum turned in the direction indicated by the arrow in Fig. 2. This turns the shaft 10 also, and through the shaft the part to be driven receives its movement. When the cable 23 is entirely unwound, relaxation of the power on the cable will permit the spring 24 (which meanwhile has been coiled) to assert itself and rewind the cable on the drum, the pawl and ratchet 15 and 14 holding

the shaft 10 stationary. When the cable has been rewound on the drum, the above-described movement may be repeated, and so on throughout the operation of the device.

The invention may be used in a great number of connections, as will suggest themselves to skilled mechanics, among which I will enumerate use in driving grain dumps and elevators, to which purpose it is particularly adapted, especially in case steam or other engine power is not practical or convenient.

Various changes in the form, proportions, and minor details of my invention may be resorted to at will without departing from the spirit and scope thereof. Hence I consider myself entitled to all such variations as may lie within the terms of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a supporting means, of a shaft revolubly mounted thereon, means for transmitting the movement of the shaft, a means acting between the shaft and the support to prevent rotation of the shaft in one direction, a drum mounted loosely on the shaft, means connecting the drum with the shaft to cause the shaft to turn with the drum in the other or remaining direction, a spring coiled around the shaft and connected with the drum and with the supporting means, and a cable connected to the drum and adapted to be wound around the same.

2. The combination with a supporting means, of a shaft revolubly mounted thereon, means for transmitting the movement of the shaft, an internal ratchet attached to the supporting means, a member attached to the shaft adjacent to said ratchet, a pawl pivotally mounted on the member and coacting with the ratchet to prevent rotation of the shaft in one direction, a drum loosely mounted on the shaft, an internal ratchet attached to the drum, a member attached to the shaft adjacent to the ratchet, a pawl carried by said member and coacting with the ratchet whereby to cause the shaft to turn with the drum in the other or remaining direction, a spring coiled around the shaft and connected to the supporting means and the drum, and a cable attached to the drum and adapted to swing around the same.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDMOND PUTNAM.

Witnesses:
W. B. REDDEN,
OSCAR G. CRANE.