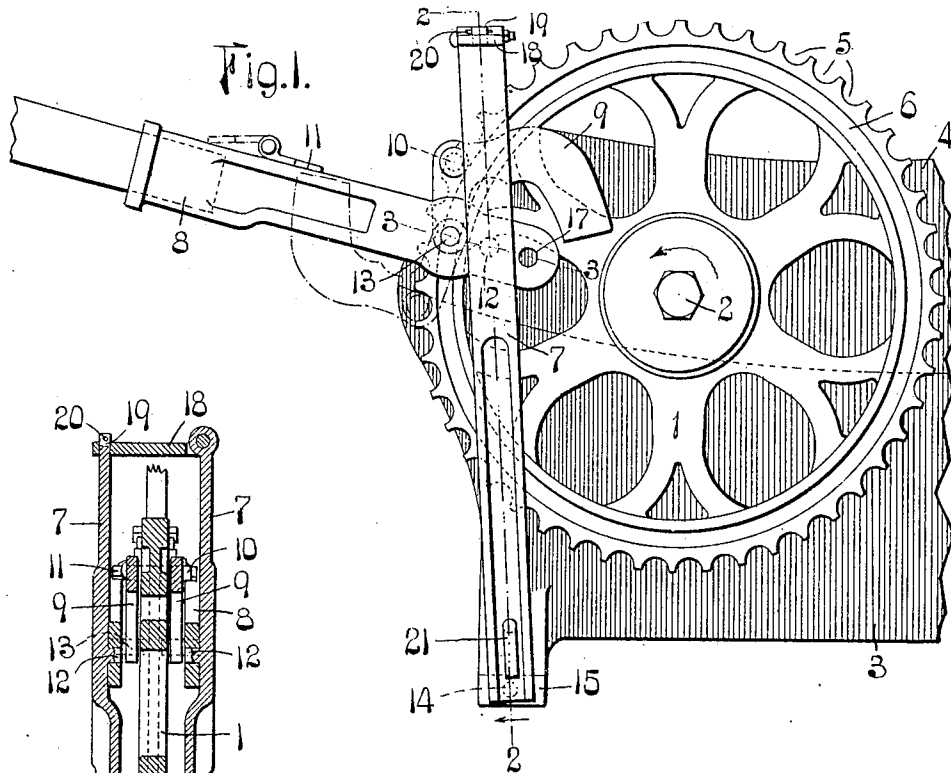
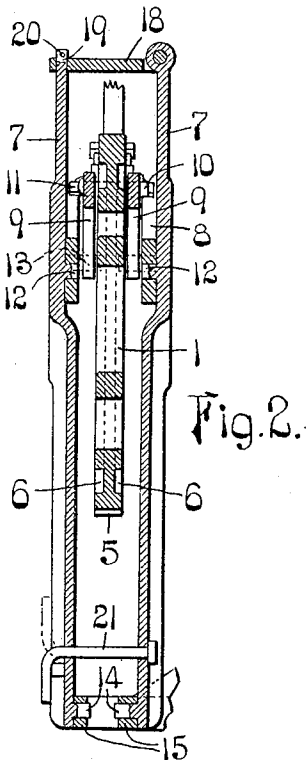
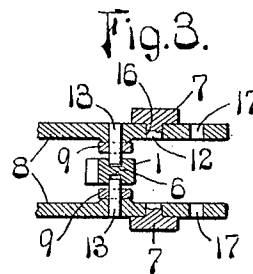
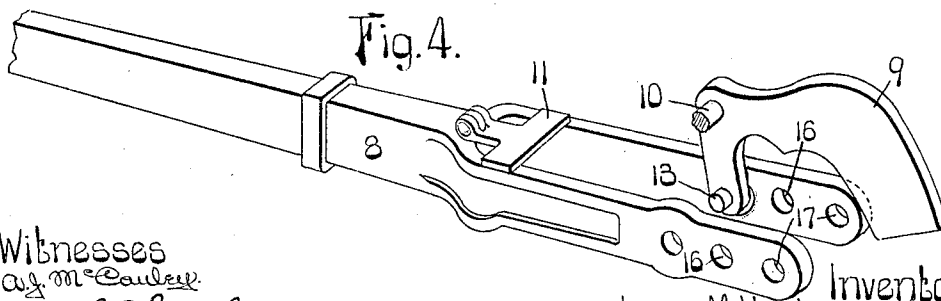


I. M. HACKNEY.
 RATCHET MECHANISM.
 APPLICATION FILED JULY 1, 1907.

906,624.

Patented Dec. 15, 1908.



Witnesses
 at M^cCauley.
 Wells L. Church.

Inventor:
 Isaac M. Hackney
 by Bakerwell & Cornwall Attys.

UNITED STATES PATENT OFFICE.

ISAAC M. HACKNEY, OF WICHITA, KANSAS, ASSIGNOR TO THE BROOKS TIRE MACHINE COMPANY, OF WICHITA, KANSAS, A CORPORATION OF KANSAS.

RATCHET MECHANISM.

No. 906,624.

Specification of Letters Patent.

Patented Dec. 15, 1908.

Application filed July 1, 1907. Serial No. 381,614.

To all whom it may concern:

Be it known that I, ISAAC M. HACKNEY, a citizen of the United States, residing at Wichita, Kansas, have invented a certain new and useful Improvement in Ratchet Mechanisms, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of a ratchet mechanism embodying the features of my invention; Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1; Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1; and Fig. 4 is a perspective view of the operating lever.

This invention relates to a ratchet mechanism and is an improvement upon the ratchet mechanism shown in my prior United States patent No. 827,235, dated July 31, 1906.

One of the objects of the invention herein described is to provide a power device whereby the manual power exerted upon a lever may be multiplied.

Another object is to provide an efficient means for manually operating a ratchet wheel connected to an eccentric shaft so as to impart a partial revolution thereto.

Another object of the invention is to provide a cheap, durable and efficient device for use in connection with tire setting machines and particularly for drawing the movable head or heads thereof toward or away from each other. And still another object of my invention is to provide a power device having means for varying the speed as well as the degree of power which is imparted to the member that the power device actuates.

Referring to the drawings which represent the preferred form of my invention, 1 designates a ratchet wheel secured to one end of a shaft 2, said shaft being so constructed that the rotary movement thereof imparts a sliding movement to a separate member such, for example, as the head of a tire setting machine of the type shown in my prior patent No. 862,471, dated August 6, 1907. I have not shown any portion of the tire setting machine, however, except the base 3

and the stationary head 4 in which the shaft 2 is journaled.

The wheel 1 is provided in its periphery with semi-circular recesses 5 which form teeth, and in its side faces with circumferentially extending grooves 6, the function of which will be hereinafter described. A fulcrum member consisting of two links 7, that are pivotally connected to the base 3 at a point one side of the axis of wheel 1, carries a lever 8 provided with a pawl consisting of two weighted dogs or arms 9 connected by a cross pin 10 which coöperates with the recesses 5 in the periphery of the wheel 1 so that when said lever is actuated, movement will be imparted to the wheel 1. Preferably, the dogs which form said pawl are normally arranged in the position shown in full lines in Fig. 1 so that when the lever is pressed downwardly the wheel 1 will be rotated the direction of the arrow in Fig. 1, the pawl being prevented from swinging downwardly into the position shown in broken lines in Fig. 1 by means of a stop 11 that is pivoted to the lever 8. By moving said stop into the position shown in dotted lines in Fig. 1, however, said pawl can swing downwardly, as shown in broken lines, so that when the lever is moved upwardly the pawl will engage and rotate the wheel 1 in the opposite direction to that indicated by the arrow. The lever 8 is provided with a bifurcated end, as shown in Fig. 4, so that it will straddle the wheel 1, said lever being arranged between the links 7, each of which is provided with an inwardly extending pin 12 that enters a hole formed in the lever 8.

The weighted dogs 9 are connected to the arms at the inner end of the lever 8 by pins 13 that project inwardly into the circular grooves 6 formed in the sides of the wheel 1 so as to govern the position of the fulcrum of the lever 8 relatively to the axis of the wheel 1. As previously stated, the links 7 are pivotally connected at their lower ends to the base 3, this construction being shown clearly in Fig. 2 wherein it will be seen that each link is provided with an inwardly extending journal 14 that enters a hole formed in a cross piece 15 carried by brackets that project laterally from the base 3.

In order that the fulcrum of the lever 8

may be varied relatively to the axis of the wheel 1 for changing the speed as well as the degree of power that is imparted to said wheel, I have provided the lever 8 with two sets of holes 16 and 17 to receive the fulcrum pins on the links 7, said links being adapted to be separated to withdraw said fulcrum pins from the lever so as to permit said pins to be inserted in either set of holes in the lever 8. The links are fastened together at their upper ends by a latch 18 pivotally connected to one link and provided at its opposite end with an opening through which a projection 19 on the other link extends, a cross pin 20 extending through said projection to prevent the latch from being raised accidentally. The lower ends of the links 7 are connected together by a pin 21 journaled in the inside link and extending through a hole in the outside link, the end of said pin being bent at right angles, as shown in Fig. 2.

When it is desired to increase the speed at which the wheel 1 is rotated the pin 21 is turned so that its bent end projects upwardly, as shown in broken lines in Fig. 2, and the latch 18 is disengaged so that the links 7 can be moved apart to withdraw the fulcrum pins from the holes 16 in the lever 8, the fulcrum pins on the links being then inserted in the holes 17 so that the fulcrum for the lever 8 will be nearer the axis of the wheel 1 and thus provide for a longer stroke of the lever so that it will move the wheel 1 a greater distance each time it is operated. Of course, when a great degree of power is desired the fulcrum pins on the links 7 are arranged in the holes 16 of the lever 8, as shown in Fig. 1, so that said lever will have a short stroke and thus cause the cross pin 10 of the pawl to catch only one notch or tooth of the wheel 1 whenever the lever is actuated. Where more speed and less power is required, however, such, for example, as when light tires are being upset, the fulcrum pins on the links are arranged in the holes 17 of lever 8 as previously described so that the stroke of said lever will be increased and thus cause the wheel 1 to be moved a greater distance each time the lever is actuated.

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

1. A mechanism of the character described, comprising a ratchet wheel provided with a shoulder which extends circumferentially around said wheel adjacent the periphery thereof, a drive shaft to which said wheel is connected, a stationary base, a fulcrum member pivotally connected at its lower end to said base, a manually-operated lever fulcrumed on said member and provided with a device which extends under the shoulder on the ratchet wheel, and a pawl

carried by said lever for engaging and moving the ratchet wheel when the lever is actuated; substantially as described.

2. A mechanism of the character described, comprising a ratchet wheel provided in its side face with a circular groove, a shaft to which said wheel is secured, a stationary base, a fulcrum member pivotally connected to said base at a point below and to one side of the axis of the ratchet wheel, a lever fulcrumed to said member and provided with a projection which extends into the groove in the ratchet wheel, said lever being provided with a plurality of holes adapted to receive a fulcrum pin on the fulcrum member, and a pawl pivotally connected to said lever for engaging the teeth of the ratchet wheel; substantially as described.

3. A mechanism of the character described, comprising a ratchet wheel provided in each of its side faces with circumferentially extending shoulders located adjacent the periphery thereof, a shaft to which said wheel is connected, a stationary support, a fulcrum member straddling said ratchet wheel and being pivotally connected to said support, a bifurcated lever fulcrumed on said support and provided with projections which extend under the shoulders on the ratchet wheel, and a plurality of arms pivoted to said lever and having means for cooperating with the teeth of the ratchet wheel; substantially as described.

4. A mechanism of the character described, comprising a ratchet wheel provided in its side faces with circular grooves, a shaft to which said wheel is connected, a stationary base, a plurality of links pivotally connected at their lower ends to said base, means for holding said links spaced apart, a bifurcated lever straddling the ratchet wheel and provided with a plurality of sets of holes which are adapted to receive fulcrum pins on said links, arms pivotally connected to said lever by pins which extend into the circular grooves in the ratchet wheel, and a cross pin connecting said arms and adapted to cooperate with the teeth of the ratchet wheel; substantially as described.

5. A mechanism of the character described, comprising a ratchet wheel provided in its side faces with continuous circular grooves, a shaft to which said wheel is connected, a stationary base, a link arranged on each side of the ratchet wheel and provided at its lower end with a pin which extends into an opening formed in said base, a latch at the upper ends of said links for holding them together, a connecting pin extending through the links adjacent their lower ends, a bifurcated lever arranged between said links and provided with a plurality of holes, fulcrum pins on the links for cooperating

with the holes in said lever, a plurality of
weighted arms connected to said lever by
pins which extend into the grooves in the
ratchet wheel, and a cross pin carried by
5 said arms for coöperating with the teeth of
the ratchet wheel; substantially as de-
scribed.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses,
this twenty seventh day of June, 1907.

ISAAC M. HACKNEY.

Witnesses:

GEORGE W. CORZINE,

ALBERT W. COOLEY.