T. G. STRAKER.

POWER TRANSMISSION APPARATUS.

APPLICATION FILED MAR. 31, 1908.

959,814. **Patented May 31, 1910.**

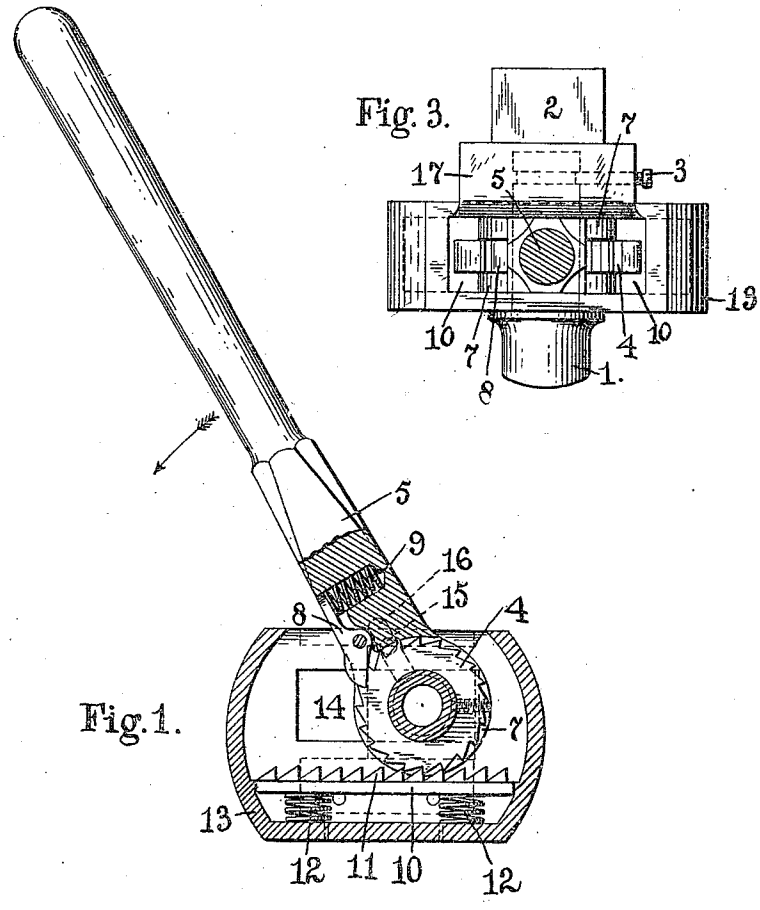

Fig. 1.

Fig. 3.

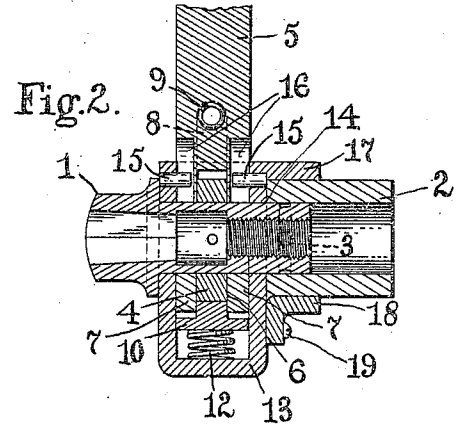

Fig. 2.

Attest:

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UNITED STATES PATENT OFFICE.

TOOKE GEORGE STRAKER, OF NEW YORK, N. Y.

POWER-TRANSMISSION APPARATUS.

959,814. Specification of Letters Patent. **Patented May 31, 1910.**

Application filed March 31, 1908. Serial No. 424,400.

To all whom it may concern:

Be it known that I, TOOKE GEORGE STRAKER, a citizen of the United States, residing at 4 Manhattan avenue, New York city, New York, have invented new and useful Improvements in Power-Transmission Apparatus, of which the following is a specification.

My invention relates to power transmission means for converting the reciprocating movement of a member such as the lever into a substantially continuous rotation of another member in one direction.

I have shown my invention as applied to a ratchet drill but I do not wish to limit myself in this respect.

In the present embodiment of my invention I show as the rotary driving member a ratchet wheel of substantially ordinary form which is engaged by the pawl on the hand lever to turn the ratchet when the hand lever is moved in one direction, and for continuing the rotary movement of the ratchet wheel when the hand lever is moved in the opposite direction, I employ a toothed member to engage the said ratchet wheel, said toothed member having connection with the lever for performing its function when the lever is drawn back.

The invention consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view of the improvement, parts being shown in side elevation, and Fig. 2 is a sectional view at right angles to Fig. 1. Fig. 3 is a plan view.

In these drawings 1 indicates the socket for the drill spindle, this being internally of rectangular form to receive the drill stock and being adapted to rotate in a block 2, the connection between the said block and the rear end of the drill socket being formed by a set screw 3 passing through the block and into a circumferential groove in the cylindrical end of the drill socket, this construction allowing the drill socket to turn while supported in the block.

The rotary driving member I show in the form of a ratchet wheel 4 fixed to the rotary drill socket and embracing this ratchet wheel is the head of the lever 5. The lever is for this purpose bifurcated at 6 so that its sides 7 reach down on each side of the ratchet wheel. The lever has pivoted thereto a pawl 8 under tension of a spring 9 so that as the lever is moved in the direction of the arrow, Fig. 1, the pawl will engage the ratchet and turn the drill socket to rotate the drill. Now for rotating the ratchet wheel as the lever is returned in a direction opposite to that of the arrow in Fig. 1, I provide a member 10 consisting of a plate or bar having teeth 11 to engage the ratchet, said plate or bar being pressed upwardly by springs 12, one at each end thereof. This plate or bar with its springs is carried by a box or casing 13 slotted at 14 for the passage therethrough of the drill holding socket so that this box or casing can have a horizontal reciprocation in relation to the drill socket and ratchet wheel. This reciprocating movement is imparted to the boxing by means of a pin and slot connection with the hand lever, the pins being shown at 15 extending inwardly from the sides of the box and entering the slots 16 in the lever, there being a pin and slot connection at each side of the lever. The boxing has an upper flange 17 extending laterally therefrom over the upper surface of the block 2, and a lower flange 18 held to the boxing by screws 19, this construction giving the boxing a guiding bearing on the stationary block 2.

It will now be seen that as the handle or lever is drawn backwardly it will cause the box to slide on the block 2 by means of its flanges 17 and 18 and in this movement the toothed bar will engage the ratchet wheel and rotate the same forwardly in the same direction in which it was previously rotated by the engagement of the pawl therewith when the hand lever was moved in the direction of the arrow. Now, when the hand lever is again moved forwardly the ratchet wheel will be rotated by the pawl and the boxing or casing will be slid forwardly on the block 2 and in this movement the toothed bar will simply yield and allow its teeth to slip past the teeth on the ratchet wheel and the parts will now be in position for a continued rotation of the ratchet wheel in the same direction when the hand lever is rotated backwardly.

I claim as my invention:—

1. A power transmitting device comprising a lever, a ratchet wheel, a pawl on the lever engaging said wheel, a casing having connection with the lever so that the direction of motion of the lever is communicated to the casing, and a spring pressed rack ly-

ing in the casing and engaging that portion of the ratchet wheel remote from the lever, the teeth on the said rack and pinion engaging in one direction of movement only.

2. In combination in apparatus of the class described, a toothed wheel, an operating lever, means carried by the lever and engaging the wheel to rotate it in one direction, a sliding frame or box operated by the lever and the yielding rack carried by the said box and engaging the wheel, substantially as described.

3. In combination in apparatus of the class described, the rotary wheel, the lever, a pawl between the lever and the wheel, a chuck or block, a box or casing sliding thereon, a pin and slot connection between the box or casing and the lever and a yielding rack carried by the box or casing to engage the toothed wheel to continue the rotary movement of the same in the one direction, substantially as described.

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

TOOKE GEORGE STRAKER.

Witnesses:
W. P. BURKE,
A. F. HEUMAN.