W. S. NAPIER & C. B. ELLIOTT.

PAWL AND RATCHET MECHANISM.

APPLICATION FILED JAN. 27, 1913. RENEWED JAN. 14, 1916.

**1,172,480.** Patented Feb. 22, 1916.

FIG. 1.

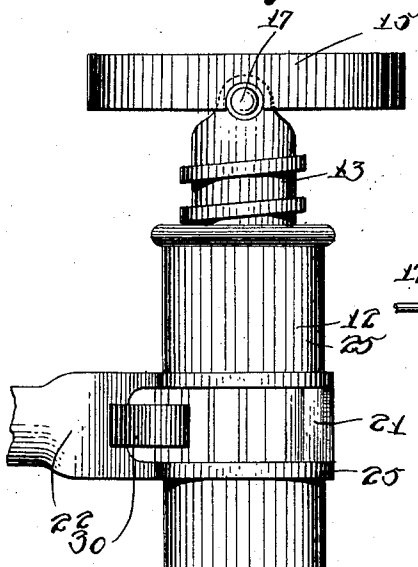



FIG. 4.

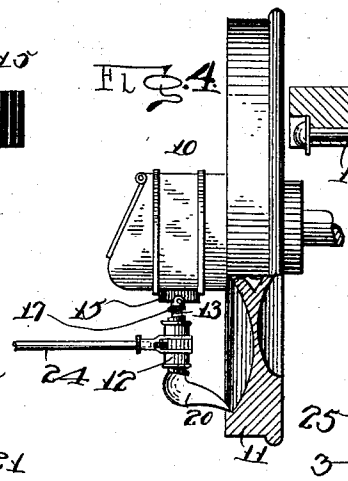



FIG. 2.

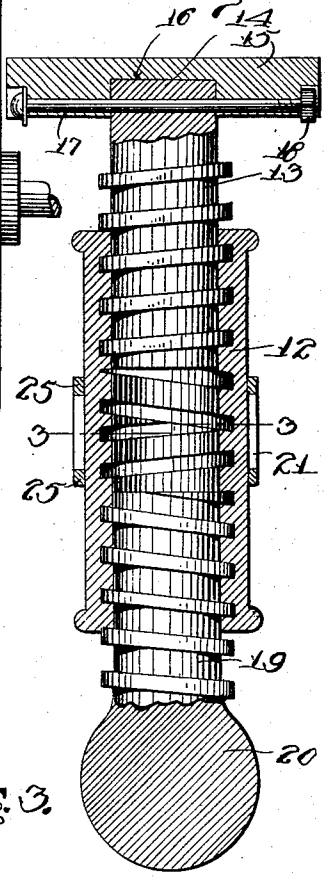
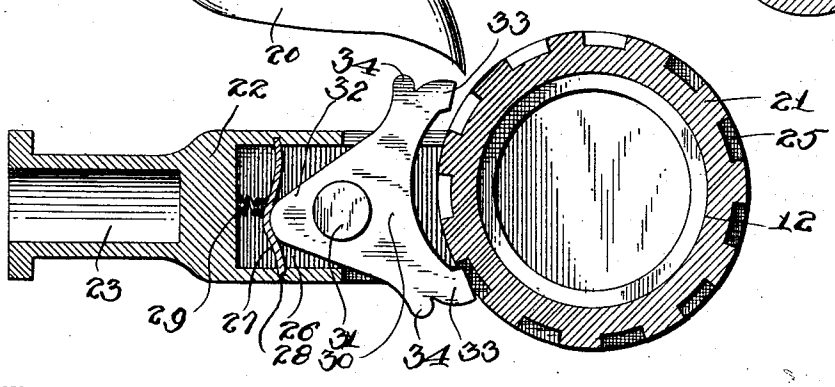



FIG. 3.




*WITNESSES*

Howard F. Costello.

Ross J. Woodward.

*INVENTOR*

Claud B. Elliott

William S. Napier

By C. C. Crooman, their *Attorney*

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

WILLIAM S. NAPIER, OF HOUSTON, AND CLAUD B. ELLIOTT, OF HEMPSTEAD, TEXAS.

## PAWL-AND-RATCHET MECHANISM.

1,172,480. Specification of Letters Patent. Patented Feb. 22, 1916.

Application filed January 27, 1913, Serial No. 744,474. Renewed January 14, 1916. Serial No. 72,181.

*To all whom it may concern:*

Be it known that we, WILLIAM S. NAPIER and CLAUD B. ELLIOTT, citizens of the United States of America, residing at Houston, county of Harris, State of Texas, and at Hempstead, in the county of Waller and State of Texas, respectively, have invented certain new and useful Improvements in Pawl-and-Ratchet Mechanism, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a pawl and ratchet mechanism, and the principal object of the invention is to provide an improved device for operating a jack.

Another object of the invention is to provide an improved type of means for mounting the pawl which rotates the adjusting sleeve.

With these and other objects in view this invention consists of certain novel combinations, constructions, and arrangements of parts as will be hereinafter fully described and claimed.

In the accompanying drawing:—Figure 1 is a side elevation of the improved jack. Fig. 2 is a vertical sectional view through the jack. Fig. 3 is a transverse sectional view along the line 3—3, in Fig. 2. Fig. 4 is a view showing the jack in position for operation.

Referring to the accompanying drawing it will be seen that this invention comprises a jack which in use is positioned with its upper end engaging the lower face of the journal box 10, and its lower end engaging the wheel 11 in order that the wheel may be held tightly against the track, and thus prevented from raising with the journal box when the jack is extended. This overcomes the necessity of blocking the wheel down to the track.

The jack comprises a sleeve 12 which is provided with a central opening having right and left hand threads leading from the two ends and meeting at the center. A shaft 13 which is provided with a right thread is positioned in the upper portion of the sleeve 12 and terminates in a reduced end 14 upon which a plate 15 is mounted. This plate is provided with a pocket 16 in which the reduced end 14 fits and is pivotally secured to the reduced end by means of the pin 17, which is held in place by the nut 18. A shaft 19 which is provided with a left hand thread is screwed into the lower end portion of the sleeve 12 and terminates in a foot 20 which is longitudinally curved as shown in Fig. 1.

A plurality of teeth 21 are formed upon the sleeve 12 intermediate its height, and a socket for an operating handle is rotatably mounted upon the sleeve and carries a pawl which is so mounted that it may be swung to turn the sleeve in a desired direction. This socket comprises a body portion 22 which is provided at one end with a pocket 23 in which the handle 24 may be fitted and terminates at its opposite end in a pair of spaced rings 25 which are positioned above and below the teeth 21, thus preventing longitudinal movement of the socket upon the sleeve. The intermediate portion of the body portion is hollow to form a housing 26 in which a flexible metal strip 27 is positioned. This strip 27 has its ends fitting into notches 28 formed in the side walls of the housing 26 and is held in its normal position by a spring 29 positioned between the strip 27 and the inner end of the housing. A pawl 30 is mounted upon a pivot pin 31 passing through the housing and has its heel 32 engaging the flexible strip 27 in order that the pawl may be held in an adjusted position. This pawl is substantially triangular in shape and has the points 33 at its base curved so that the pawl may engage the teeth in order to rotate the sleeve. Lugs 34 extend from the pawl near the curved ends 33 in order that the pawl may be rocked from one side to the other, thus controlling the direction in which it is desired to have the sleeve rotate. It should be noted that since the strip 27 is flexible that the heel 32 of the pawl will form a pocket in the strip as clearly shown in Fig. 3, thus preventing any danger of the pawl slipping to the reverse position from that shown in Fig. 3 while operating the jack.

When operating this jack it is placed as shown in Fig. 5 and after the pawl has been adjusted to cause the sleeve to rotate in the proper direction the handle 24 is connected with the socket piece. The sleeve is then rotated and since the shafts 13 and 19 are oppositely threaded they will be caused to simultaneously move out of the sleeve and thus the shoe 20 will press upon the wheel to hold it against the track and the plate 15 will press against the journal box to raise the same. As soon as the jack has been extended the desired amount the handle may

be removed and after the journal box has been repacked the pawl is reversed and the handle again inserted in the socket so that the sleeve may be rotated in order to contract the jack and permit it to be disconnected. This jack will be very easy to operate since the shafts move in opposite directions at the same time, and therefore, cause the jack to work very rapidly, thus saving considerable time and labor. It should also be noted that since the plate 15 is pivotally connected with the shaft 13 that it will at all times fit tightly against the under face of the journal box.

Having thus described the invention what is claimed as new, is:—

In a jack, the combination with a support, a rotatable member carried thereby, ratchet teeth formed thereon, spaced rings carried by said support above and below the teeth of said rotatable member, a handle carried by said rotatable member provided with a hollow head portion, a flexible strip mounted at one end of said head portion, a spring positioned between said strip and the inner end of said head portion, a pawl pivotally mounted within said housing, said pawl being substantially triangular and having its apex forming a heel contacting with said strip and having its base terminating in curved ends adapted to engage the teeth formed upon said rotatable member, and lugs formed upon said pawl adjacent the outer portions of the curved ends.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

WILLIAM S. NAPIER.
CLAUD B. ELLIOTT.

Witnesses to signature of William S. Napier:

EULA G. LEE,
W. A. PARISH.

Witnesses to signature of Claud B. Elliott:

J. H. GROCE,
G. S. OSBORNE.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**