No. 731,886. PATENTED JUNE 23, 1903.

W. H. GEORGE.

WRENCH FOR CYLINDER TEETH.

APPLICATION FILED OCT. 11, 1902.

NO MODEL.

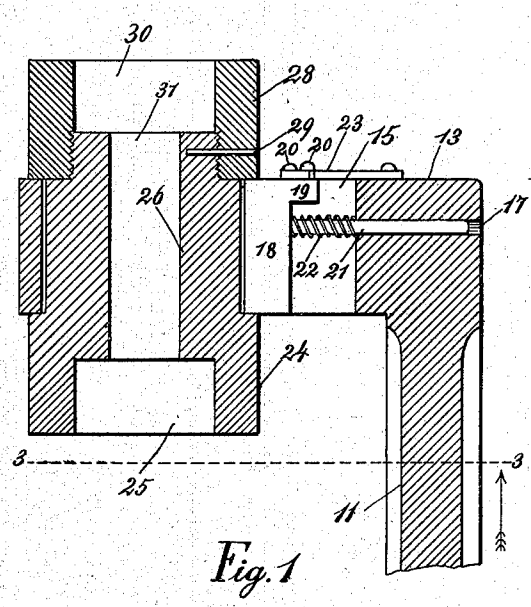


Fig. 1

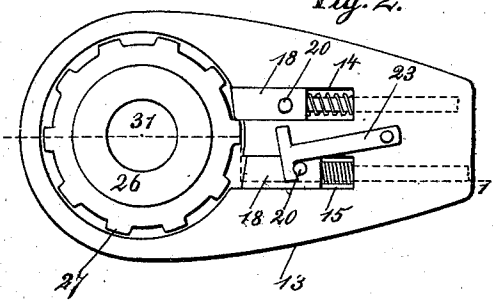


Fig. 2.

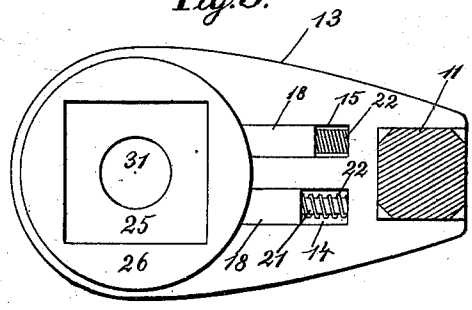


Fig. 3.

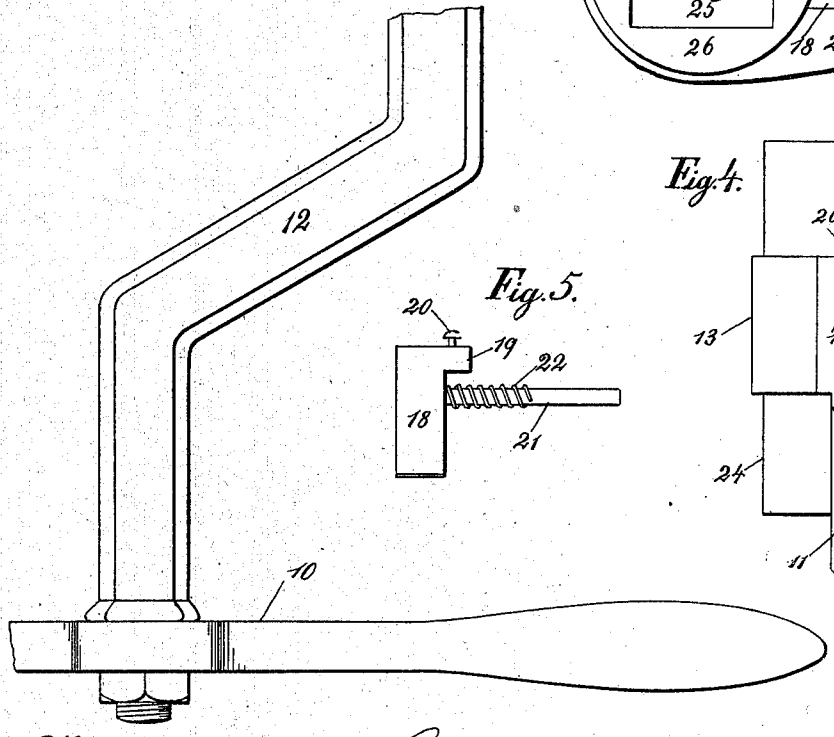


Fig. 5.

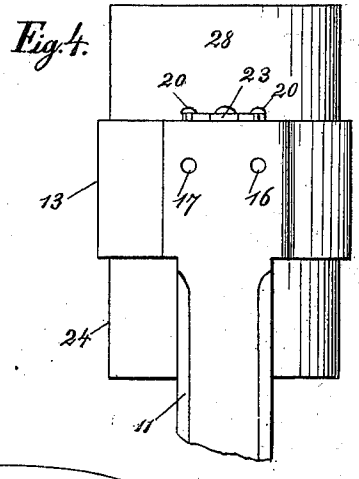


Fig. 4.

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No. 731,886. Patented June 23, 1903.

UNITED STATES PATENT OFFICE.

WILLIAM H. GEORGE, OF DEXTER, IOWA.

WRENCH FOR CYLINDER-TEETH.

SPECIFICATION forming part of Letters Patent No. 731,886, dated June 23, 1903.

Application filed October 11, 1902. Serial No. 126,948. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. GEORGE, a citizen of the United States, residing at Dexter, in the county of Dallas and State of Iowa, have invented certain new and useful Improvements in Wrenches for Cylinder-Teeth, of which the following is a specification.

The objects of my invention are to provide a wrench especially adapted for use in adjusting the nuts on the teeth of threshing-machine cylinders or concaves and to provide a wrench of this class of simple, durable, and inexpensive construction and which is ready for instant use either on cylinder or concave teeth.

A further object is to provide improved means of simple, durable, and inexpensive construction for limiting the movement of the nut-holder portion relative to the handle in such a manner that the nut-holder may move freely in the handle in one direction and be firmly held against movement in the opposite direction, and, further, to provide simple and easily-operated means whereby the movement of the nut-holder relative to the handle may be reversed, so that a ratchet device is provided capable of working in either direction, to the end that the nut-holder when in engagement with the nut may be continuously rotated in either direction, as required, to screw or unscrew the nut by a continuous oscillation of the wrench-handle through a segment of a circle.

My invention consists in certain details in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of the complete wrench, the nut-holder portion and part of the handle being shown in section, taken on the indicated line 1 1 of Fig. 2, and a portion of the cross-head of the handle being broken away. Fig. 2 shows an end elevation of the device with the outer nut-holder portion removed. Fig. 3 shows the transverse sectional view through the indicated line 3 3 of Fig. 1. Fig. 4 shows a rear edge view of the wrench with the handle broken away, and Fig. 5 shows a detail side view of one of the spring-actuated pawls.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the cross-head of the handle. The handle proper is indicated by the numeral 11 and is provided with a laterally-extending portion 12 near the cross-head. At the opposite end of the handle is a part 13, extending at right angles to the handle and having a large circular opening through its outer end in line with the center of the cross-head 10. Communicating with this central opening are two parallel recesses 14 and 15, and communicating with these recesses are round openings 16 and 17, extending to the other end of the part 13. Slidingly mounted in each of the recesses 14 and 15 is a pawl 18, having a straight outer edge slightly beveled, as clearly shown in Fig. 2. In the top of the pawl 18 is an extension 19, having a pin 20 at its top, and beneath the extension 19 is a round arm 21 to pass through the openings 16 or 17. Mounted upon this arm 21 is an extensile coil-spring 22, one end of which is designed to bear against the part 13 at the inner end of one of the recesses 14 or 15, and the other end of the spring is designed to bear against the pawl 18, thus normally forcing said pawl by yielding pressure toward the round opening in the part 13.

I have provided simple and easily-operated means whereby either of the pawls 18 may be held against the pressure of spring 22, so that they will not project into the opening in the part 13, as follows: Pivoted to the body portion 13 adjacent to the recesses 14 and 15 is a latch 23, substantially T-shaped in outline, and this latch is so shaped and arranged that it may be placed in engagement with either one of the pins 20, and when thus placed will hold the pawl 18 out of the opening in the part 13, the other pawl being left free to enter said opening when forced thereinto by its spring.

The nut-holder portion comprises a cylindrical part 24, having an angular nut-receiving opening 25 at one end and a tubular extension 26 at its other end long enough to pass through and beyond the opening in the part 13, said tubular extension 26 being of

considerable less diameter than the part 24, so that it may readily pass through the opening in the part 13 and so that a shoulder is formed between the parts 26 and 24 to engage one face of the part 13. Formed on the part 26 within the opening in the part 13 is a series of teeth 27, extending longitudinally of the nut-holder portion and so arranged and shaped as to be engaged by the pawls 18. The outer nut portion is indicated by the reference-numeral 28. Its outer surface is cylindrical and of the same diameter as the part 24. At the inner end portion of its interior is a cylindrical opening to receive the end of the part 26, to which it is fixed by means of a pin 29, and a nut-opening 30 is formed at its outer end. The said part 26 is also provided with a central longitudinal opening 31, into which the screw-threaded portion of the threshing-machine teeth may enter when the nuts on said teeth are being turned by the wrench.

In practical use it is obvious that my improved wrench may be constructed at a minimum of expense. The entire handle portion, with its openings and recesses, may be cast complete in one piece, after which the cross-head may be attached and the pawls and the nut-holder portions placed in position. In use and assuming that it is desired to use the device on the nuts of a threshing cylindrical tube the nut-holder portion is inserted between the bars of a threshing-cylinder and the nut-opening 25 placed in engagement with a nut. Then the handle 10 is oscillated through the segment of a circle and the nut will be turned with the handle in one direction, because one of the pawls 18 will be held directly against one of the teeth 27, thus firmly locking the nut-holder portion and the handle together. However, upon the reverse movement of the cross-head the teeth 27 will strike upon the inclined face of the pawl and press the pawl outwardly against the spring-pressure, so that the nut-holder portion may rotate freely in this direction relative to the handle. In this connection it is important to note that there must be as little friction as possible between the teeth on the nut-holder portion and the pawls; otherwise the nut-holder portion would not readily and easily turn within the handle portion, and by providing two independent pawls of the kind shown having independent springs said springs may be arranged to press the pawl very lightly against the teeth 27 and yield readily when said teeth turn relative to the handle portion. If it is desired to rotate the nut-holder portion in the opposite direction, it is only necessary to turn the latch 23, so as to engage the pin 20 of the opposite pawl, whereupon the nut-holder portion will be locked in one direction and be free to rotate in the other direction, thus allowing the handle portion to move relative to the nut-holder portion in a direction opposite from that which would be permitted if the other pawl were in engagement with the teeth 27. Obviously the wrench may be used on the teeth of a threshing-machine concave by placing the nut-holder portion 28 in engagement with said nut, the operation of the pawl being the same as just previously described. The arms 21 of the pawl 18 serve as guides to hold the pawl in position and to prevent movement of said pawl in any direction except in a straight line.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States therefor, is—

An improved wrench, comprising in combination, a handle portion, a nut-holder portion rotatably mounted in the handle portion and having a nut-opening at each end and teeth on its periphery of its central portion, two independent pawls slidingly mounted in the recesses in the handle portion to engage the toothed portion, a guide-arm on each pawl, an extensile coil-spring on each guide-arm, forcing the pawl toward the toothed portion, a pin projecting from each pawl and a substantially T-shaped latch pivoted to the handle portion between the pawls and susceptible of engaging the pin on either pawl, thereby holding it from engagement with the tooth portion, substantially as and for the purposes stated.

WILLIAM H. GEORGE.

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