

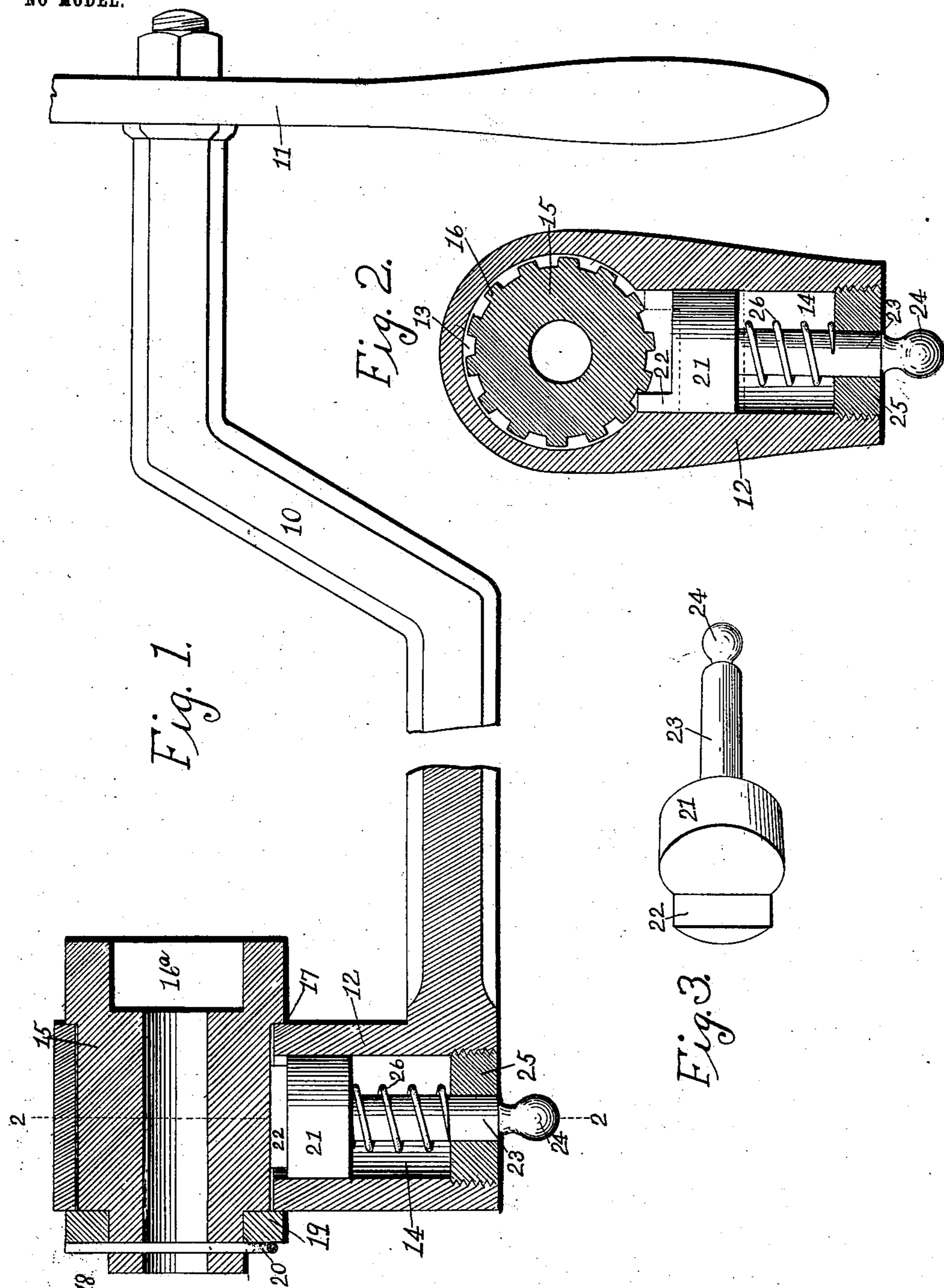
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W. H. GEORGE.  
WRENCH FOR CYLINDER TEETH.

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NO MODEL.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## WRENCH FOR CYLINDER-TEETH.

SPECIFICATION forming part of Letters Patent No. 755,293, dated March 22, 1904.

Application filed January 12, 1903. Serial No. 138,659. (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 this invention are to provide a wrench especially designed for use in manipulating the nuts of the teeth in threshing cylinders and concaves which shall be of simple, durable, and inexpensive construction and provided with a single spring-actuated pawl capable of being quickly and easily reversed to adapt it for either screwing or unscrewing a nut.

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 claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a portion of the wrench-handle and a longitudinal sectional view of the nut-holder and adjacent portion. Fig. 2 shows a sectional view on the indicated line 2 2 of Fig. 1, and Fig. 3 shows a perspective view of the pawl detached.

Referring to the accompanying drawings, I have used the reference-numeral 10 to indicate the handle, having at one end a cross-head 11 and at its other head a lateral extension 12, said extension having an opening 13 extended through it in line with the center of the cross-head and also having a cylindrical recess 14 intersecting the opening 13 and extended to the end of the lateral extension.

Rotatably mounted in the opening 13 is a nut-holder portion 15, formed complete in one piece, having a nut-opening 16<sup>a</sup> at one end and having longitudinal teeth 16 on its central portion, which toothed portion is designed to pass through the opening 13, a shoulder 17 being formed between the said toothed portion and the end containing the nut-opening to limit the movement of the nut-holder portion through the opening. The opposite end of the nut-holder portion is provided with a reduced portion 18, and the nut-holder por-

tion is rotatably mounted in the opening 13 and held against longitudinal movement by means of a collar 19, placed on the reduced portion 18 and overlapping the edges of the lateral extension surrounding the opening 13, and a pin 20 passes through the reduced portion 18 to hold the collar in place.

The pawl for engaging the ratchet-teeth 16 comprises a disk-shaped portion 21, having a tooth or extension 22 on one face, the outer edge of which is segmental in outline and the inner edge straight, the segmental edge being in line with the periphery of the disk portion 21, the straight inner edge of said tooth being arranged outside of the longitudinal axis of the pawl and parallel with said longitudinal axis, and the outer end of the tooth is arranged at right angles to the longitudinal axis of the pawl. On the opposite face of the part 21 is a shank 23, having a knob or handle 24 at its end.

The numeral 25 indicates a screw-threaded plug having a central opening through which the shank 23 may pass. Said plug is designed to be screwed into the end of the cylindrical recess 14, and 26 indicates an extensile coil-spring designed to receive the shank 23 with one end resting against plug 25 and the other end against the disk-shaped head 21 of the shank.

In practical use it is obvious that the handle portion may be formed complete in one piece. The nut-holder portion may be formed complete in another piece, and the pawl is also an independent complete piece in itself. In assembling the parts I first place the nut-holder portion in position, as indicated in the drawings, and hold it in place by means of pin 20. Then the pawl is placed in position in the cylindrical opening 14, the spring 26 placed on the shank 23, and finally the plug 25 is screwed to position. When this is done, the wrench is ready for operation, and all of the parts are obviously of cheap construction and very strong and durable. When the nut-holder portion has been placed in position with its opening 16<sup>a</sup> engaging a nut, the handle is oscillated. The tooth 22 of the spring-actuated pawl will engage the teeth 16 of the nut-holder portion when the handle is moving in

one direction. The straight edge of the tooth will engage one of the ratchet-teeth and move the nut-holder portion in unison with the handle, and when the handle oscillates in the opposite direction the flat outer end of the tooth 22 will engage successively the ratchet-teeth, with the effect that the ratchet-teeth will move the pawl longitudinally in the cylindrical recess 14 and against the pressure of spring 26.

10 In other words, the pawl will "ratchet" over the teeth of the nut-holder portion, so that an oscillation of the handle will rotate the nut-holder portion in one direction only. If it is desired to reverse the movement of the nut-

15 holder portion, the operator simply grasps the knob or handle 24 and pulls the pawl outwardly a slight distance, so that it disengages from the nut-holder portion, and then turns the knob or handle a half-revolution, thus throwing the

20 tooth 22 to the opposite side, in which position it will operate to rotate the nut-holder portion in exactly the opposite direction. In Fig. 2 the adjusted position of the pawl is indicated by dotted lines.

25 By forming the ratchet-tooth 22 on one side of the disk 21 and providing a flat end for the tooth substantially at right angles to the longitudinal axis of the pawl and by forming the inner face of the tooth straight and parallel

30 with the longitudinal axis of the pawl and to one side of the central line through the pawl I obtain the following advantageous results: First, the straight teeth of the ratchet-wheel lock against the long flat inner face of the

35 tooth, and they engage this face at a point beyond the longitudinal center of the pawl, so that in the event that the tooth has been reversed in position and has not been placed exactly in the proper position the teeth of the

40 ratchet-wheel engaging the long flat face of the tooth will first turn the tooth to proper position before the ratchet-wheel is locked by the tooth. Furthermore, when the ratchet-teeth move past the pawl the said teeth will

45 engage the flat outer end of the tooth on the pawl, and they will engage it in such manner that the whole force applied to the ratchet-wheel will tend to move the pawl backwardly against the pressure of the spring, and this is

50 done with a minimum of friction.

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

1. In a device of the class described, the

combination of a nut-holder having a ratchet- 55 toothed periphery, a spring-pressed pawl moving to and from the center of the nut-holder, and a tooth on the spring-pressed pawl at one side of its longitudinal center, said tooth having a straight face on its side nearest the 60 longitudinal center of the pawl, said face being parallel with the longitudinal center of the pawl, said tooth also having a flat end substantially at right angles to the longitudinal center of the pawl. 65

2. An improved cylinder-wrench, comprising a handle portion, a right-angled extension at one end of the handle portion, a nut-holder rotatably mounted in the extension and having on its periphery straight ratchet-teeth 70 parallel with the handle, a spring-actuated pawl in said extension, a disk at one end of the pawl and a tooth formed on the end of the said disk adjacent to the ratchet-teeth and wholly at one side of the longitudinal center 75 of the pawl, the inner face of said tooth being straight and parallel with the longitudinal center of the pawl, the outer face of said tooth being rounded and the end of said tooth being flat and substantially at right angles to the 80 longitudinal center of the pawl.

3. An improved cylinder-wrench, comprising a handle, a hollow right-angled extension at one end of the handle, a nut-holder rotatably mounted in the extension and having 85 ratchet-teeth on its periphery parallel with the handle, a pawl mounted in the hollow extension and comprising a straight body portion, a disk at one end of the pawl and a tooth on the face of the disk adjacent to the nut- 90 holder, said tooth being arranged wholly at one side of the longitudinal center of the pawl, its outer face being rounded and forming a continuation of the periphery of the disk, its inner face being straight and parallel with 95 the longitudinal center of the pawl and its end being substantially at right angles to the longitudinal center of the pawl, a screw-threaded plug in the hollow extension and having an opening in it through which the 100 body portion of the pawl projects, and an extensible coil-spring in the hollow extension, one end engaging the said plug and the other end the said disk, for the purposes stated.

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Witnesses:

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