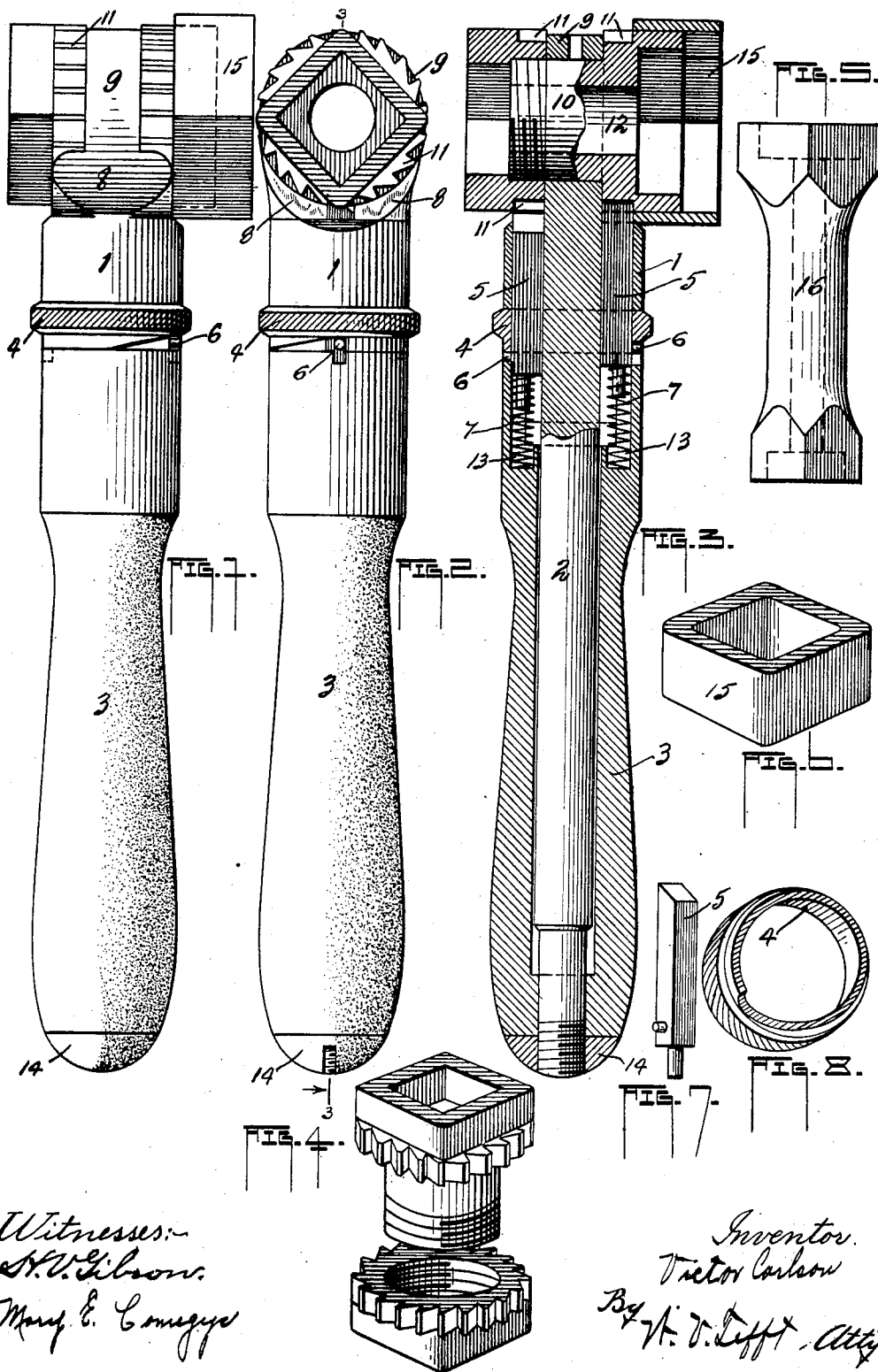


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V. CARLSON.
WRENCH.

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Witnesses:
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UNITED STATES PATENT OFFICE.

VICTOR CARLSON, OF PEORIA, ILLINOIS.

WRENCH.

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To all whom it may concern:

Be it known that I, VICTOR CARLSON, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in wrenches, by means of which a very simple and efficient wrench is provided.

The object of my invention is to provide a wrench that has general utility and special adaptation for use where the ordinary wrench cannot be readily applied, or not at all.

That my invention may be more fully understood, reference is had to the accompanying drawings, of which

Figure 1 is an elevation showing my invention. Fig. 2 is also an elevation with a portion thereof broken away to show detailed parts; Fig. 3 is a vertical section on the line 3—3 of Fig. 2; Fig. 4 is a perspective view of the ratchet cylinder by which the burs are set and removed; Fig. 5 is an extension standard; Fig. 6 is a perspective view of a socket reducer; Fig. 7 is a perspective view of one of the dogs adapted to work in connection with the ratchets of the cylinder, and Fig. 8 is a perspective view of a ratchet ring.

Referring to the drawings, 1 is the wrench head which is provided with the extension or stem 2 adapted to receive the handle 3. To the head 1 is connected the ring 4. Grooves are provided on the opposite sides of the head, within which are seated the dogs 5 which are adapted to slide back and forth within the grooves. Each of the dogs is provided with a laterally projecting pin 6 adjacent its inner end which is adapted to contact with the cam face of the reversing ring 4 and are yieldingly held under tension of springs 7 which normally hold them in the forwardly projected position.

The head 1 terminates in a ring 9 on each side of which curved shoulders 8 are provided, the concave faces of the latter being out of the plane of the inner curved face of the ring 9. The ring 9 confines the ratchet cylinder 10, the teeth 11 thereof lying adjacent and in contact with the concave faces

of the shoulders 8. The body 12 of said cylinder has its toothed end portions of enlarged diameter, whereby a central annular groove occurs between the two series of ratchet teeth, in which groove the ring 9 fits. The yoke or ring 4 embraces the cylindrical head 1 and by connection with the head as represented, is adapted to support and hold the said head in place but in a manner to facilitate its ready disassemblage.

The ratchet cylinder 10 may be formed in two parts as shown, each provided with corresponding threaded parts, adapting them to be screwed together or separated at will to facilitate the attachment and detachment of the cylinder from the head.

In assembling the parts of the wrench, the ratchet ring will first be put in place just inwardly of the head and in such relation to the pins 6 on the dogs 5 that the said pins may engage the cam surface of the ratchet ring whenever the same is turned. The cylinder may then be put in place in the head by simply inserting the elongated portion thereof through the ring or yoke and then securing the other section thereon.

In the operation of the wrench, it would seem that the pins 6 adapted to engage the cam surface of the ratchet ring may be operated on to draw the dogs 5 down by turning the ring so that its inclined surface will engage one of the dogs which will thereby be drawn inwardly and out of action while the dog on the opposite side will ride on the cam surface of the ring and will be projected forwardly through the action of the spring upon which it is seated, in which projected forward position it will engage with the teeth 11 of the ratchet cylinder and move the said cylinder step by step as the cylinder is turned with the movement of the wrench handle to turn the nut on the threaded end of the bolt. When it is desired to operate the ratchet cylinder in the opposite direction, the ratchet ring will be turned in the reverse direction so that it will draw out of action the pawl or dog first in engagement with the ratchet cylinder and allow the other pawl to be projected outwardly and to be forced out from the action of the spring upon which it is seated, into engagement with the ratchet cylinder.

The springs 8, upon which the dogs are seated, are held in seats within the cylinder as indicated at 13. The stem 2 extending from the head is adapted to extend through

the center of the handle so that its threaded end extends beyond the outer end thereof, and the screw cap 14 may be applied to hold the same in place.

5 In the use of my invention, it is designed that the cylinder shall be provided with different sized sockets and also that other cylinders may be used that have various forms or sizes of sockets, and in the use of different
10 cylinders, they may be readily interchanged by simply detaching the yoke and applying the cylinder desired to be used.

In applying my invention practically, either one of the sockets of the ratchet cylinder may be applied to the bur of a corresponding size, then by simply moving the
15 handle back and forth, the cylinder will be turned by the operation of the dogs of the ratchet teeth 11.

20 To facilitate the reaching of burs that are ordinarily inaccessible to wrenches that are commonly used, I have provided extension means, one of which is shown in Figs. 1, 3 and 6 and indicated as 15, which is a sleeve
25 adapted to fit over the outer surface of the sockets of the cylinder. This form of extension may be applied for short reaches. I also have provided the extension standard as 16, each end of which is formed in size and
30 shape to correspond with the form and size of the sockets in the particular ratchet cylinder in which it is designed to be used, and there is provided in each of its ends a socket adapted to receive a bur or to be applied thereto.

35 In practice, the opposite end of a standard from the one which is desired to be applied to the bur, is inserted in one of the sockets in a ratchet cylinder and when the attachment is thus effected, the operator will be able to

pass the standard into places where ordinary
40 wrenches could not be applied, and when properly applied to the bur or the bur carried in the socket of the standard to the bolt and the wrench properly operated, the bur
45 will be attached or detached readily. Of course, it will be understood that the standard would not be used except where burs cannot be reached by the ratchet cylinder.

Having fully described my invention I claim:—

50 In a wrench, in combination, a handle having an axial bore, a cylindrical wrench head having an axially projecting stem passed through the bore, fastening means for the
55 stem, a ring formed on said wrench head, a ratchet cylinder mounted for rotation in said ring and having teeth on opposite sides thereof, dogs slidably mounted in said wrench
60 head to engage said ratchet teeth, said handle having its inner end portion recessed, springs disposed in said recessed inner end
portion and engaging said dogs, said handle
65 having oppositely located openings in its annular edge, pins carried by said dogs and projecting laterally therefrom to work in said
openings and a ring rotatably confined between said head and said handle and having
70 an edge cammed, at opposite points to engage said pins and effect movement of said dogs, the said cammed edge being located adjacent the edge of the handle in which said openings are formed.

In testimony whereof I have affixed my signature, in presence of two witnesses.

VICTOR CARLSON.

Witnesses:

H. V. GIBSON,
MARY E. COMEGYS.