

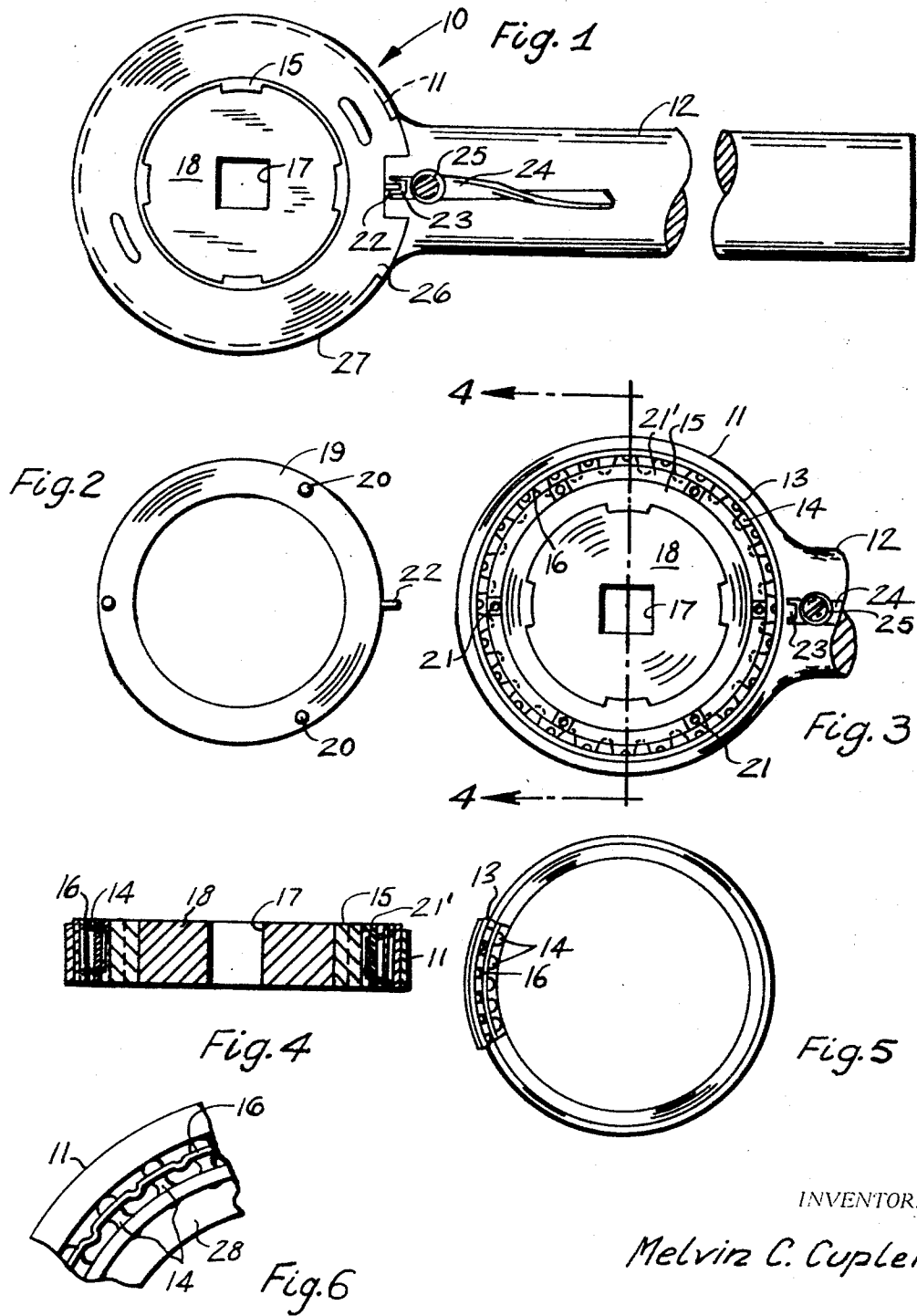
May 20, 1969

M. C. CUPLER
FRICTION WRENCH

3,444,767

Filed Jan. 16, 1967

Sheet 1 of 2



INVENTOR.

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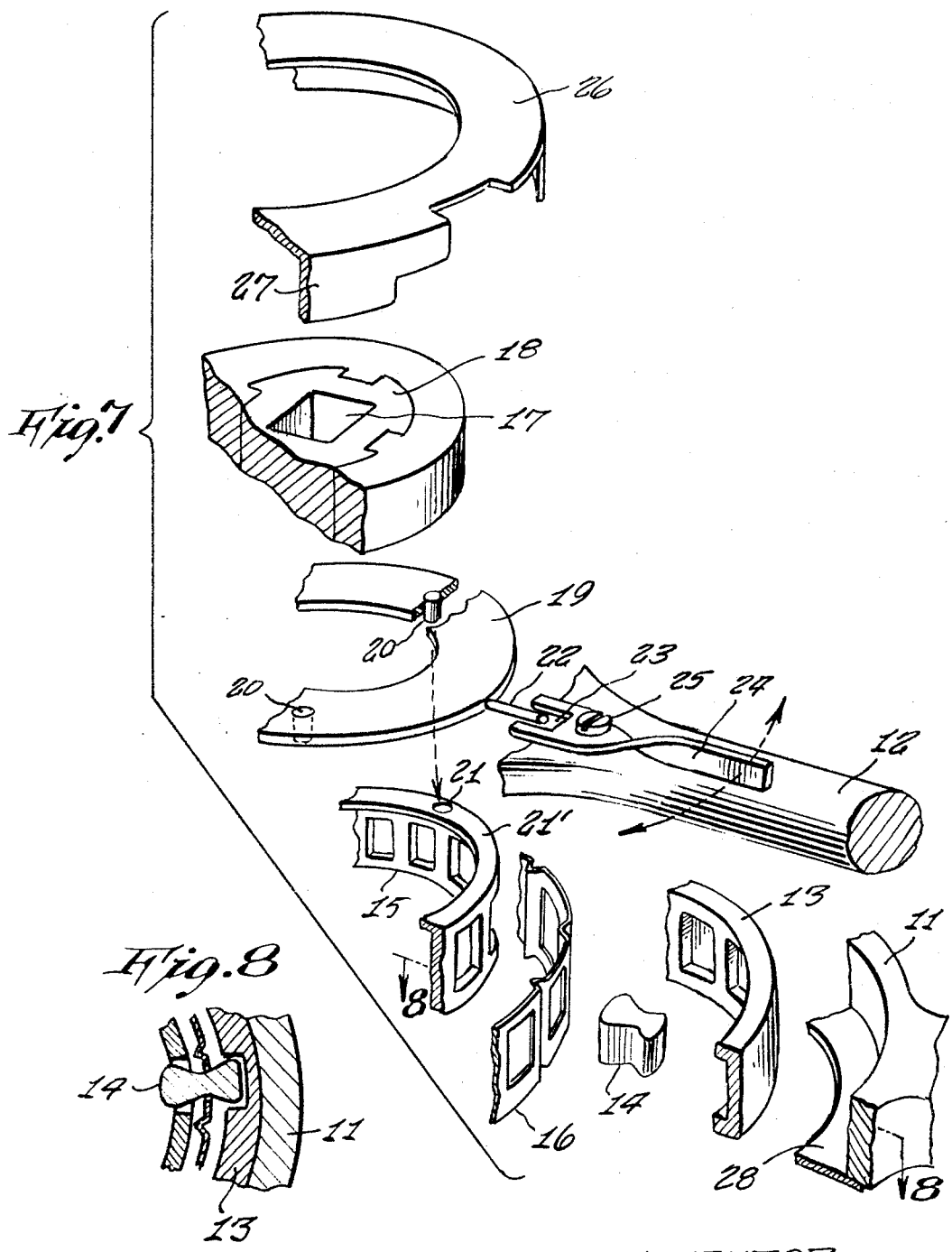
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Sheet 2 of 2



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FRICITION WRENCH

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3 Claims

ABSTRACT OF THE DISCLOSURE

A friction wrench including a core, a circular sprag, a sprag release ring, a bronze alloy circular ring and lever release means for the sprag.

The main purpose of this invention is to provide a friction wrench which will have head means that will function to hold parts within the wrench and will prevent the parts from falling out of the wrench, if it is turned over.

Another object of this invention is to provide a friction wrench that will have a plurality of spaced apart sprags and a sprag ring which will serve to provide friction gripping of the central head member.

Another object of this invention is to provide a friction wrench which will have a circular and perforated sprag spring which will function by means of a control ring having a tongue which will be received within a frontal opening of a pivotable lever upon the handle of the ring.

Still another object of this invention is to provide a friction wrench which will be trouble free and efficient in operation.

Other objects and advantages of the invention will become apparent from a consideration of the following detailed description taken in connection with the accompanying drawing wherein a satisfactory embodiment of the invention is shown. However, it is to be understood that the invention is not limited to the details disclosed but includes all such variations and modifications as fall within the spirit of the invention and the scope of the appended claims.

In the drawing:

FIGURE 1 is a top plan view of this invention;

FIGURE 2 is a top plan view of the circular control ring shown removed in its entirety, from the invention;

FIGURE 3 is a plan view of the head portion of the invention showing the face plate and control ring removed therefrom;

FIGURE 4 is a cross-sectional view taken along the lines 4—4 of FIGURE 3;

FIGURE 5 is a fragmentary top plan view of the retaining members of the wrench head.

FIGURE 6 is a fragmentary plan view showing a detail of the sprags and their associated bed members.

FIGURE 7 is an exploded perspective view showing fragmentarily the parts of the device in relative position to each other.

FIGURE 8 is a cross sectional view taken on line 8—8 of FIGURE 7.

According to this invention, a friction wrench 10 is provided with a circular main head member 11 which is integral of an elongated handle 12. A sprag retaining ring

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13 is fixedly secured within main head member 11 and provided with a plurality of equally and regularly spaced apart sprags 14 which serve to frictionally grip when engaging the outer periphery of head member 15. Sprags 14 are freely received within the circular sprag spring 16. A square opening 17 is provided through the head core 18 for receiving a part (not shown). A circular control ring 19 is provided with a plurality of equally spaced apart and projecting pins 20 which are adapted to be received within openings 21 of control race ring 21'. A projecting tongue 22 extends from the exterior periphery of control ring 19 and is received in U-shaped opening 23 of control lever 24 which is pivotable of pin 25. Pin 25 is fixedly secured to handle 12 of wrench 10.

In use, control ring 19 being pivoted by lever 24 thus through the action of sprag spring 16 which changes the angular position of the sprags 14 will engage or disengage the sprags 14 from the outer periphery of the circular head member 15.

It shall be noted that when control ring 19 is rotated by means of lever 24, pins 20 being received within the openings 21 of control race ring 21'. The sprags 14 are thus changed in their position with respect to head member 15.

In the above construction, it is to be noted that the function of the sprag release ring is to release the inner sprag case so the handle of the wrench may be moved freely in either direction toward the right or left. It shall be further noted that the function of the sprag is to lock by friction when moved in one direction and moved freely when moved in the opposite direction. It locks by impinging the sprags on the inner cone. It shall be further noted that the function of the sprag release lever is to move the sprag release ring so as to release the inner sprag cage, releasing the sprag friction units from the inner cone and outer race, thereby allowing the handle of the wrench to move freely without friction in either direction toward the right or left.

It shall further be noted that face plate 26 having a skirt 27 may be retained to wrench 10 and various of the common retaining devices such as springs (not shown) and the base of main head member 11 is provided with a flange 28 which extends inwardly, thus providing a well constructed head for retaining all of the aforementioned head members.

What I now claim is:

1. A friction wrench comprising, in combination, a circular main head member being integral with an elongated handle, a plurality of circumferentially spaced apart sprag members providing frictional engagement against a central head member having a core for receiving parts, a circular sprag spring providing tension for controlling friction supplying elements of the head of said wrench, a control race ring providing engagement with a flat control ring having lever means for controlling friction against said head member, said sprag members being received within openings of said sprag retaining ring and are further received within openings of said sprag spring and said control race ring, thus allowing for an angle change of said sprags when operating said wrench, said flat control ring being provided with a plurality of equally spaced apart projecting pins from one surface and said pins being received within openings of one side of said control race

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ring and tongue means extending from the periphery of said control ring being received within a U-shaped opening of said control lever, and thus when said control lever is placed upon a fixed pivot pin of said handle, said control ring partly rotates said control race ring to effectively change the angle of said sprags within the head of said friction wrench.

2. The combination according to claim 1, wherein said sprag retaining ring receiving said sprags is secured within the head portion of said wrench in order that it remain stationary whereupon the angle of said sprag may be changed by said control race ring when said lever is pivoted.

3. The combination according to claim 2, wherein a face plate having a partial skirt is received over the head of said wrench and covers said control ring which frictionally engages the interior face of said face ring.

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References Cited

UNITED STATES PATENTS

2,973,072	2/1961	Ferris	192—45.1
2,707,540	5/1955	Morris	192—45.1
2,113,722	4/1938	Dodge	192—43
3,164,234	1/1965	Tamarin	192—47 X
3,200,916	8/1965	Rasmussen	192—47 X
2,428,968	10/1947	Gruenberg	192—45.1

FOREIGN PATENTS

947,495 1/1949 France.

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U.S. Cl. X.R.