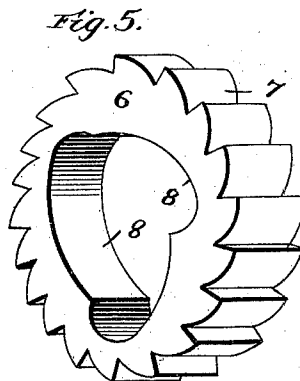
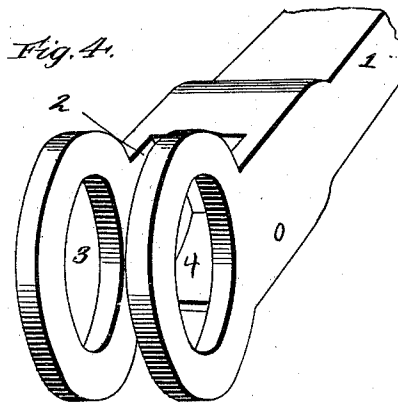
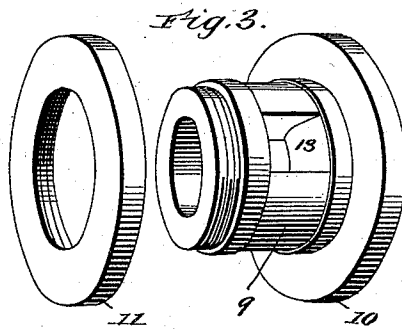
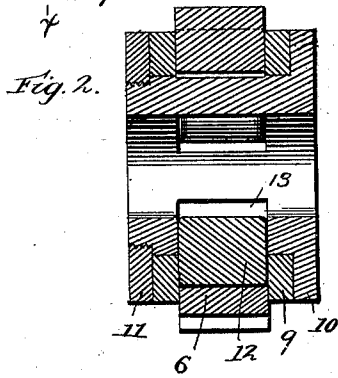
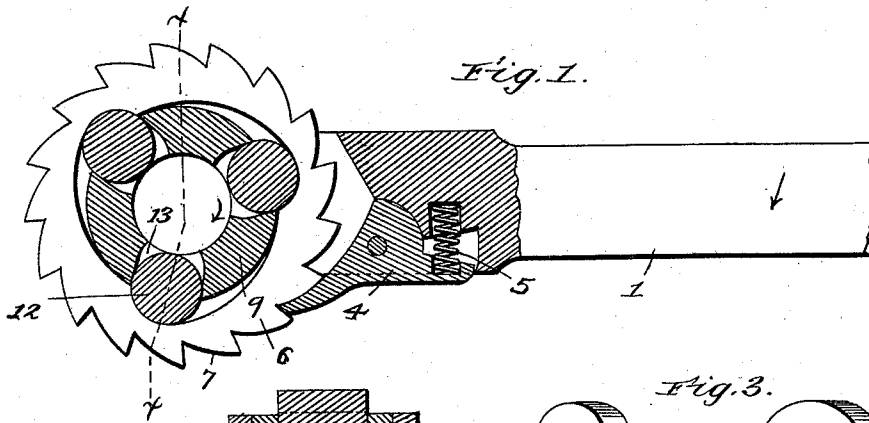


(No Model.)

M. FISK.
RATCHET WRENCH.

No. 567,766.

Patented Sept. 15, 1896.



Witnesses:

C. H. Roesler
W. A. James.

Fig. 6.



Inventor

Marston Fisk

By James J. Sheehy

Attorney

UNITED STATES PATENT OFFICE.

MARSTON FISK, OF HOUSTON, TEXAS, ASSIGNOR OF TWO-THIRDS TO S. R. TUGGLE AND C. H. BURNS, OF SAME PLACE.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 567,766, dated September 15, 1896.

Application filed July 20, 1896. Serial No. 599,923. (No model.)

To all whom it may concern:

Be it known that I, MARSTON FISK, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Ratchet-Wrenches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of wrenches which embody friction-rollers for engaging the work to be turned; and its novelty and many advantages will be fully understood from the following description and claims when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a sectional view, partly in elevation and partly broken away, of a wrench constructed in accordance with my invention. Fig. 2 is a section taken in the plane indicated by the line *xx* of Fig. 1. Fig. 3 is a detail perspective view of the roller guiding and adjusting device. Fig. 4 is a detail perspective view of the forward end of the handle. Fig. 5 is a detail perspective view of the cam device, and Fig. 6 is a perspective view of one of the rollers removed.

In the said drawings similar numerals designate corresponding parts in all of the several views, referring to which—

1 indicates the handle of the wrench, which is provided at its forward end with the bifurcation 2 and the journal-apertures 3.

4 indicates a pawl which is pivotally connected with the handle 1 at the rear of the bifurcation 2 and is backed by the coiled spring 5.

6 indicates the cam device, which is preferably in the form of an annulus and has the ratchet-teeth 7 at its outer side and the three (more or less) cam-surfaces 8 at its inner side.

9 indicates the tubular roller guiding and adjusting device, which is journaled in the apertures 3 of the handle 1, and is provided at one end with the preferably milled flange 10, and is screw-tapped at its opposite end for the engagement of the preferably milled and interiorly-threaded securing-ring 11, and

12 indicates the rollers, of which three are preferably employed.

The cam device 6 is arranged in the bifurcation 2 of the handle 1, so as to enable the pawl 4 to engage its teeth 7, and the roller adjusting and guiding device 9 is arranged within said cam device, as shown. The said roller guiding and adjusting device 9 is provided with the radially-disposed apertures 13, and these apertures, which are designed to receive the rollers 12, are reduced in width at their inner ends, that is to say, they have such inner ends of a less width than the diameter of the rollers 12, as shown, so as to permit said rollers to move freely within them and yet prevent the rollers from dropping out of the device 9 when the wrench is not in use.

In using my improved wrench it is simply necessary, in order to enable the rollers 12 to recede from the center of the device 9, to turn the said device 9 with the hand in the direction of arrow in Fig. 1. This will permit the screw, stud, or other device to be turned to readily enter the device 9, and to further facilitate such entry of the stud or device to be turned I prefer to bevel or round the ends of the rollers 12, as illustrated. When the stud or device to be turned is in position within the device 9, said device 9 is turned with the hand in the direction opposite to that indicated by the arrow, when the rollers 12 will be tightly forced by the cam-surfaces 8 of the device 6 against the stud or device to be turned. The handle 1 is then turned in the direction indicated by arrow, when the cam device 6, turning with the handle, will force the rollers 12 against the stud or device to be turned, so as to cause it to also turn with the handle.

In open places the wrench may be continuously turned, so as to turn an article into or out of a socket without releasing the rollers 12 from such article. In more confined quarters the back motion of the ratchet-lever will release the rollers from the article that is being turned, and when said lever is again moved forward the rollers will tighten upon the article in a new position.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a wrench, the combination of a handle, an annular cam device carried by the

- handle and having the cam-surfaces at its inner side, the tubular roller guiding and adjusting device arranged within the cam device and journaled in the handle and having 5 radially-disposed apertures reduced at their inner ends, and rollers arranged in said apertures and adapted to engage an article to be turned and be engaged by the cam-surfaces of the cam device, substantially as specified.
- 10 2. In a wrench, the combination of a handle, a rotary annular cam device carried by the handle and having the cam-surfaces at its inner side and teeth at its outer side, a pawl carried by the handle and engaging the 15 teeth of the cam device, the tubular roller guiding and adjusting device arranged within the cam device and journaled in the handle and having radial apertures reduced at their inner ends, and rollers arranged in said apertures and adapted to engage an article and 20 be engaged by the cam-surfaces of the cam device, substantially as specified.
3. In the wrench described, the handle hav-

ing the bifurcation and the journal-apertures at one end, the rotary annular cam device 25 arranged in the bifurcation of the handle and having the cam-surfaces at its inner side and teeth at its outer side, a pawl carried by the handle and engaging the teeth of the cam device, the tubular roller guiding and adjust- 30 ing device arranged within the cam device and journaled in the apertures of the handle and having radial apertures reduced at their inner ends and also having a flange at one end and threads at its opposite end and a 35 threaded ring thereon, and rollers arranged in said apertures and adapted to engage an article to be turned and be engaged by the cam-surfaces of the cam device, substantially as and for the purpose specified. 40

In testimony whereof I affix my signature in presence of two witnesses.

MARSTON FISK.

Witnesses:

O. J. CONKLIN,
T. F. LOFTUS.