Sept. 1, 1959 D. W. DUNHAM 2,901,934

COMBINED WRENCH AND MARKING DEVICE

Filed Jan. 24, 1958

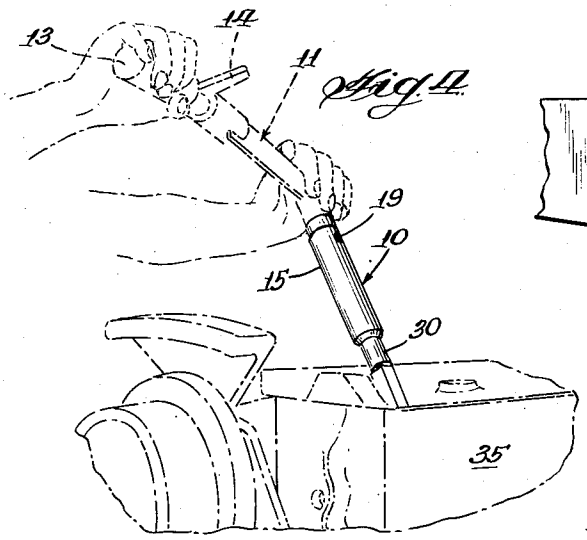


Fig. 4.

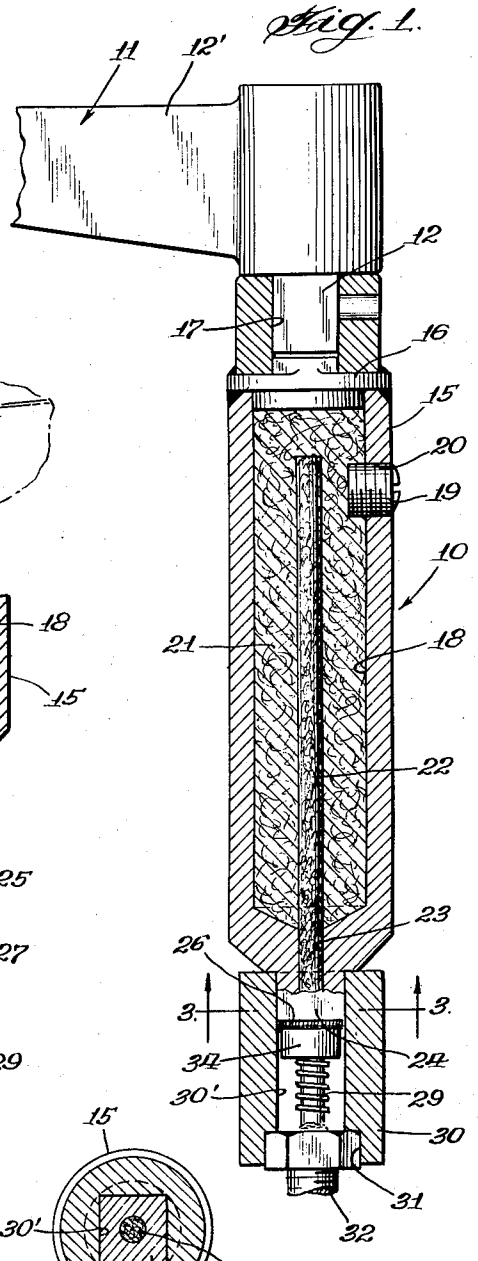


Fig. 1.

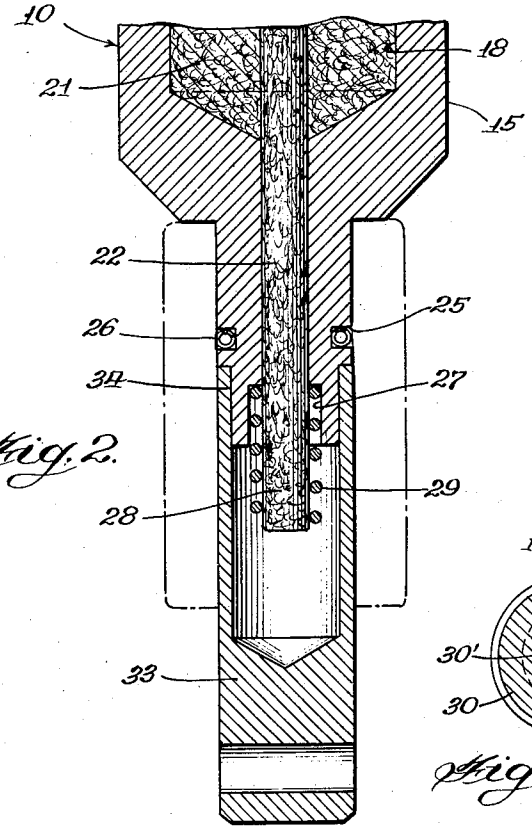


Fig. 2.

Fig. 3.

INVENTOR.
David W. Dunham
BY Paul O. Pippel
Atty

United States Patent Office 2,901,934 Patented Sept. 1, 1959

2,901,934

COMBINED WRENCH AND MARKING DEVICE

David W. Dunham, Indianapolis, Ind.

Application January 24, 1958, Serial No. 711,059

10 Claims. (Cl. 81—53)

This invention relates to a wrench and marking device and more particularly it relates to a marking device attachment particularly applicable to torque wrenches.

In the assembly operation of various components such as engines, the torque wrench plays an important part. When securing the various components of an engine, it is necessary that the securing bolts be tightened to a predetermined tension. For this purpose a torque wrench is utilized. In order to avoid duplication of effort it is desirable that some means be provided to indicate that the secured bolts have been tightened to the proper tension by a torque wrench so that the completed engine will pass inspection without the need of again applying a torque wrench to check each particular bolt. It is a prime object of this invention therefore to provide an improved wrench and marking device particularly adaptable for torque wrenches.

A still further object is the provision of a marking attachment and combined wrench which will, during the operation of the wrench, mark each bolt with a suitable ink or dye, therefore indicating that a torque wrench has been used on the bolt to assure that the bolt has been tightened to a proper tension.

These and other objects will become more readily apparent from a reading of the specification when examined in connection with the accompanying sheet of drawing.

In the drawing:

Figure 1 is a cross sectional view through a combined wrench and marking device attachment particularly adapted for use with a torque wrench;

Figure 2 is an enlarged cross sectional view through the lower portion of a combined wrench and marking device;

Figure 3 is a cross sectional view taken along the line 3—3 of Figure 1; and

Figure 4 is a perspective view of a portion of an engine showing the manner in which a combined wrench and marking device attachment is utilized in operation.

Referring now particularly to Figure 1, a combined wrench and marking device or attachment is generally indicated by the reference character **10**. The wrench and marking device attachment **10** is particularly adapted for use with a torque wrench generally indicated at **11**. The torque wrench **11** comprises essentially a square wrench portion **12** connected by means of a connecting portion **12'** to a handle **13**. The torque wrench **11** may be conventional, including a torque scale **14** which by suitable indicating means registers the amount of tension exerted during use or operation of the wrench.

The combined wrench and marking device attachment **10** comprises essentially a tubular body or barrel **15** provided with a cap **16** at one end. The cap **16** is connected to the body **15** and a socket **17** is integrally connected to the cap **16**. The barrel **15** is provided with a chamber **18** having a closure plug **19** secured in a filler opening **20**. The chamber **18** is adapted to contain a suitable material such as cotton, cellulose, or other porous material **21**. A suitable marking compound in the form

of ink or liquid dye is contained within the chamber **18**. The ink may be ordinary layout ink mixed with alcohol as a thinner. A wick **22** extends substantially the length of the chamber **18** and the body **15** is provided at one end with a coaxial bore **23** in communication with the chamber **18**. The body **18** also is provided at its lower end with a square wrench extension **24** through which the bore **23** also extends. The square wrench extension **24** is also provided with a peripherally extending recess **25** in which a coil spring **26** is positioned.

The wrench extension **24** is provided with an enlarged bore **27** in coaxial alignment with the bore **23** and the wick **22** includes a wick projection **28** extending outwardly from the wrench extension **24**. A coil spring **29** is suitably fastened within the the bore **27**, the said spring also projecting outwardly from the said bore **27** and encircling a portion of the wick projection **28**. A wrench socket member or tubular wrench element **30** is provided with a square bore **30'** which receives the wrench extension **24** so that the socket member **30** and the tubular body **15** are locked against relative rotational movement. The socket member **30** is also provided with a hexagonally shaped receiving portion **31** which, as indicated in Figure 1, may receive a bolt head of a bolt **32** in mating relation.

As shown in Figure 2, a tubular cap **33** may be suitably inserted over a narrow annular portion **34** of the wrench extension **24**. The tubular cap **33** is positioned in this relation when the wrench and marking device **10** is not in operative use.

As indicated in Figure 1, the wrench and marking device **10** and torque wrench **11** are shown in operative relation with respect to a bolt **32**. The torque wrench may be of conventional construction, as above indicated, and upon the insertion of the square wrench portion **12** into the socket **17**, the combined wrench and marking device becomes operative with the torque wrench. The socket member **30** for the particular type of bolt **32** is inserted over the the wrench extension **24** and the resilient spring **26** maintains the said socket member **30** in snug connected relation with respect to the said wrench extension **24**. The spring **29** maintains the wick portion **28** in vertical alignment and, as shown in Figures 1 and 4, in the operative position, the end of the wick portion **28** engages the head of the bolt **32** when the said head is placed into operative engagement with respect to the hexagonal head receiving portion **31**. Thus as the wrench is utilized to secure the bolt in position with the proper tension, the wick portion **28** is in contact with the head of the bolt and suitably marks the same to identify that the said bolt has been secured by means of a torque wrench. The marking, or course, does not guarantee the proper tightening of the bolt to a proper torque, which is the responsibility of the operator. It merely denotes the application of a torque wrench.

Thus it is obvious that every bolt which may be tightened by means of the torque wrench will become properly marked so that it definitely indicates, upon inspection, that a torque wrench has been applied. In the practice of the invention only torque type wrenches are supplied with the marking devices during assembly of the engine. Thus the inspection department of any assembly plant immediately recognizes the application of the torque wrench and the engine passes inspection. Duplication of effort is thus avoided. Thus the objects of the invention have been fully achieved and it must now be realized that an improved wrench and marking attachment has been disclosed. Changes and modifications, in the invention, of course, may be made without departing from the spirit of the invention as disclosed or from the scope of the appended claims.

What is claimed is:

1. A combined wrench and marking device adapted for use with a wrench having a male projecting portion, comprising an elongated tubular body having a chamber, a socket connected to a first end of said body, said socket being adapted to receive the male portion of a wrench, a wrench extension on a second end of said body, said extension having a longitudinally extending coaxial bore communicating with said chamber, a wick disposed in said chamber and projecting outwardly from said bore and said extension, an enlarged bore in said extension, a spring having one end disposed in said extension and projecting outwardly ad encircling a portion of said projecting wick, said extension having a peripherally extending recess, a resilient member disposed in said recess, and a tubular wrench element having a bolt head receiving portion at one end and a bore conforming to and adapted to receive said wrench extension in non-rotating relation, said resilient member being adapted to resiliently secure said wrench element on said extension, said chamber being adapted to contain a marking compound, whereby during use of said device, said projecting portion of said wick is in contact with a bolt head to mark the same.

2. A combined wrench and marking device adapted for use with a wrench having a male projecting portion, comprising an elongated tubular body having a chamber, a socket connected to a first end of said body, said socket being adapted to receive the male portion of a wrench, a wrench extension on a second end of said body, said extension having a bore communicating with said chamber, a wick disposed in said chamber and projecting outwardly from said bore and said extension, a spring having one end connected to said extension, and projecting outwardly and encircling a portion of said projecting wick, said extension having a peripherally extending recess, a resilient member disposed in said recess, and a tubular wrench element having a bolt head receiving portion at one end and a bore conforming to and adapted to receive said wrench extension in non-rotating relation, said resilient member being adapted to resiliently secure said wrench element on said extension, said chamber being adapted to contain a marking compound whereby during use of said device, said projecting portion of said wick is in contact with a bolt head to mark the same.

3. A combined wrench and marking device adapted for use with a wrench having a male projecting portion, comprising an elongated tubular body having a chamber, a socket connected to a first end of said body, said socket being adapted to receive the male portion of a wrench, a wrench extension on a second end of said body, said extension having a bore communicating with said chamber, a wick disposed in said chamber and projecting outwardly from said bore and said extension, a spring having one end connected to said extension and projecting outwardly and encircling a portion of said projecting wick, and a tubular wrench element having a bolt head receiving portion at one end and a bore conforming to and adapted to receive said wrench extension in non-rotating relation, said chamber being adapted to contain a marking compound, whereby during use of said device, said projecting portion of said wick is in contact with a bolt head to mark the same.

4. A combined wrench and marking device comprising a tubular body having a chamber, a wrench extension on said body, said extension having a longitudinally extending coaxial bore communicating with said chamber, a wick disposed in said chamber and projecting outwardly from said bore and said extension, a spring having one end connected to said extension and projecting outwardly and encircling a portion of said projecting wick, and a tubular wrench element having a bolt head receiving portion at one end and a bore conforming to and adapted to receive said wrench extension in non-rotating relation, said chamber being adapted to contain a marking compound whereby during use of said device, said projecting portion of said wick is in contact with a bolt head to mark the same.

5. A combined wrench and marking device comprising a tubular body having a chamber, a wrench extension on said body, said extension having a longitudinally extending coaxial bore communicating with said chamber, a wick disposed in said chamber and projecting outwardly from said bore and said extension, and a tubular wrench element having a bolt head receiving portion at one end and a bore conforming to and adapted to receive said wrench extension in non-rotating relation, said chamber being adapted to contain a marking compound whereby during use of said device, said projecting portion of said wick is in contact with a bolt head to mark the same.

6. A combined wrench and marking device comprising a barrel adapted to contain a marking compound, a wick disposed in said barrel and having a portion projecting from one end thereof, resilient means connected to said barrel and encircling the projecting portion of said wick, and a wrench socket connected to said barrel, said wrench socket including a receiving portion for receiving a fastener element in mating relation whereby during operation of said wrench socket said projecting portion of said wick engages and marks said fastener element.

7. A combined wrench and marking device comprising a barrel adapted to contain a marking compound, a wick disposed in said barrel and having a portion projecting outwardly therefrom at one end thereof, and a wrench socket connected to said barrel, said wrench socket including a receiving portion for reeciving a fastener element in mating relation whereby during operation of said wrench socket said projecting portion of said wick engages and marks said fastener element.

8. A combined wrench and marking device comprising a tubular member having a chamber adapted to contain a marking compound, a wick disposed in said chamber, said wick having a portion projecting longitudinally outwardly from one end of said tubular member, a wrench socket connected to one end of said tubular member and encircling said projecting portion of said wick, said projecting portion being adapted to contact and mark a fastener element engaged by said socket, and handle means connected to said tubular member.

9. A combined wrench and marking device comprising a tubular member having a chamber adapted to contain a marking compound, a wick disposed in said chamber, said wick having a portion projecting longitudinally outwardly from said tubular member, a wrench socket connected to said tubular member and encircling said projecting portion of said wick, said projecting portion being adapted to contact and mark a fastener element engaged by said socket, and handle means on said tubular member for turning the same.

10. A combined wrench and marking device comprising a body, a socket connected to said body, and marking means associated with said body projecting into said socket and being adapted to engage and mark a fastener engaged by said socket during operation thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

1,404,434	Derby	Jan. 24, 1922
2,379,878	Bronander	July 10, 1945
2,489,648	Koffler	Nov. 29, 1949
2,764,769	Neuman	Oct. 2, 1956