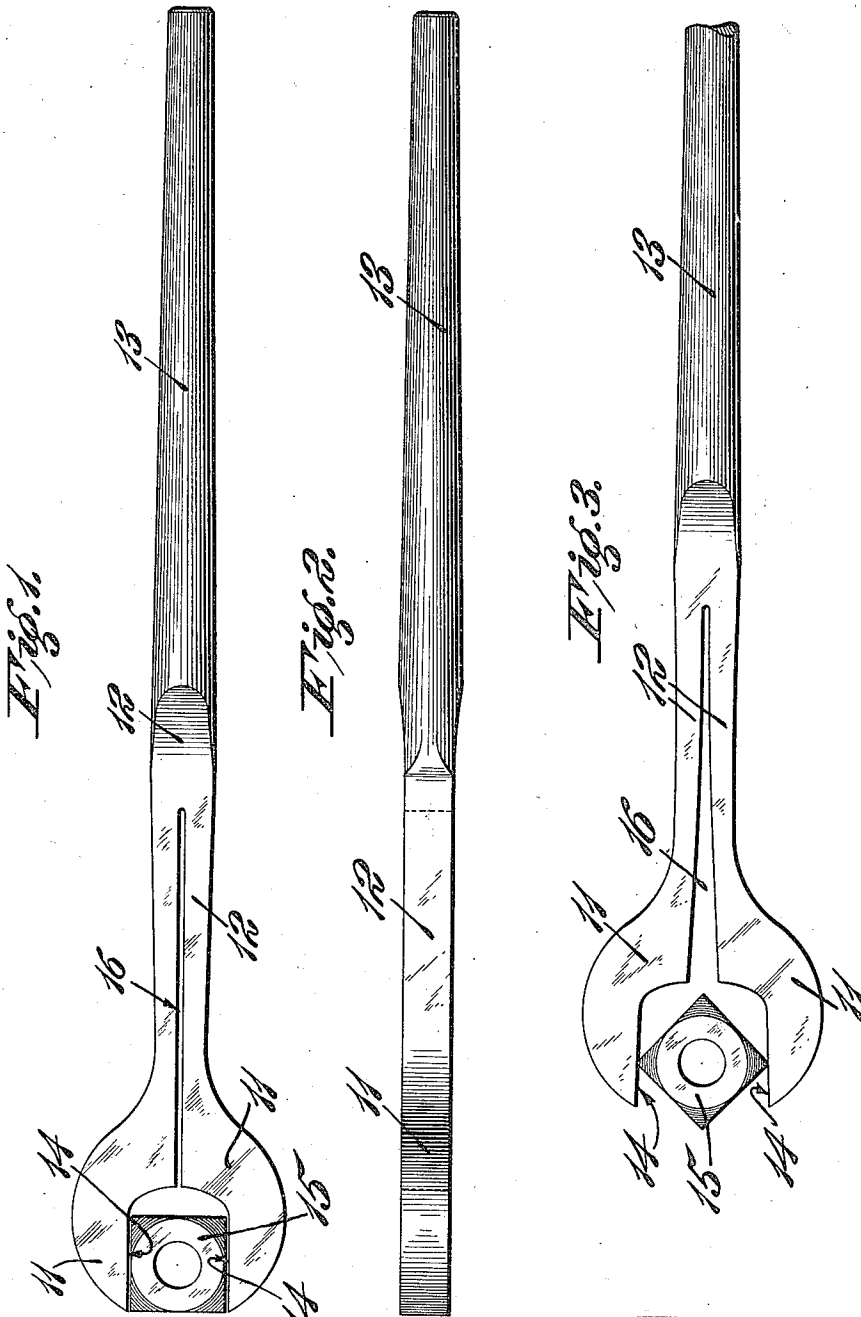


A. O. CUNNINGHAM.
 SPRING JAW WRENCH.
 APPLICATION FILED OCT. 12, 1914.

1,164,073.

Patented Dec. 14, 1915.



Witnesses:
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Inventor:
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 his Atty.

UNITED STATES PATENT OFFICE.

ANDREW O. CUNNINGHAM, OF ST. LOUIS COUNTY, MISSOURI.

SPRING-JAW WRENCH.

1,164,073.

Specification of Letters Patent.

Patented Dec. 14, 1915.

Application filed October 12, 1914. Serial No. 866,378.

To all whom it may concern:

Be it known that I, ANDREW O. CUNNINGHAM, a citizen of the United States, and a resident of St. Louis county, Missouri, have invented a new and useful Improvement in Spring-Jaw Wrenches, of which the following is a specification.

This invention relates to jaw wrenches of the type having non-adjustable jaws, and consists in a wrench having jaws which are normally at a fixed distance apart but which can spring farther apart under excessive pressure and relax their grip upon the nut.

The object of the invention is a wrench which will not overtighten a nut or bolt.

In tightening up track bolts and structural bolts, especially in construction work where cheap labor is employed, it not infrequently happens that too much force is applied to the wrench and the threads of the nut or bolt are stripped or the bolt is broken. This invention safeguards nuts and bolts from excessive stresses caused by overtightening them.

The invention also consists in the wrench construction shown in the accompanying drawings and hereinafter described.

In the drawings, in which like characters designate like parts of the wrench in the several views, Figure 1 is a side view of a wrench embodying the invention showing the jaws in normal position and engaging a nut; Fig. 2 is an edge view of the same; and Fig. 3 is a side view of the wrench showing the jaws sprung apart by a nut held cornerwise between them.

The wrench comprises a forged steel head 11 and shank 12. The head and shank are made in one piece, the shank being prolonged for a suitable distance to constitute a handle 13. The head is formed with two parallel jaw faces 14 at a suitable distance apart to loosely engage the opposite flat sides of a nut 15 of any desired size. The head and shank are cut or split lengthwise in a plane midway between the jaw faces for a considerable distance from the opening between them in toward the handle, the cut or split 16 dividing the shank and head into two symmetrically arranged parts or jaws, each of which has one of the jaw faces 14 at its extremity.

The head is hardened, and the shank is tempered to a spring temper. The length of the cut or split 16 and the dimensions of the shank are so chosen with respect to the resistance to bending of the steel of the shank as to make the force required to spring the jaws apart greater than that required to screw the nut up to the desired degree of tightness, but less than that required to strip the threads of the nut or break the bolt. Also, the length of the handle is made such that the full strength of the average workman exerted thereupon will hardly be sufficient to spring the jaws apart in case the nut or bolt head engaged thereby does not turn readily.

The invention is not restricted to the method of manufacturing the wrench above described nor to the particular materials above described; and modifications may be made in the shapes and dimensions of the various parts of the device without departing from the invention.

What I claim as my invention is as follows:

1. A wrench consisting of a head having parallel jaw faces and a shank made of spring metal in line with said jaw faces, the shank being split lengthwise from the head between the jaw faces inwardly toward the handle end, thereby forming spring jaws which are unobstructed and free to spread apart under the excessive twisting pressure of overtightening a nut held between them.

2. A wrench having a handle and two separate jaws, said jaws having spring metal shanks in substantial alinement with their faces connecting them with said handle, said shanks being unobstructed in their movement and free to flex and permitting resilient movement of said jaw faces, whereby twisting pressure upon a nut between the jaws tends to spread them apart.

3. A wrench consisting of a bar of steel constituting a handle and having a head at one end formed with parallel jaw faces and split in from said head end in an axial plane to a point short of its handle to form resilient jaws having unobstructed outward movement, whereby excessive tightening of a nut by the jaws tends to spread them apart.

4. A wrench having parallel jaws, each of

said jaws being connected to a handle by means of a flexible shank, said shanks being in lengthwise alinement with the faces of said jaws, said jaws and shanks being unobstructed from outward movement and having sufficient rigidity to hold them in fixed relationship under normal conditions of use.

Signed at St. Louis, Missouri this 7th day of October, 1914.

ANDREW O. CUNNINGHAM.

Witnesses:

JESSIE PALMER,

ANDREW P. KESSLING.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."