(No Model.)

J. WALKER.

TENSION REGISTERING WRENCH.

No. 414,615. Patented Nov. 5, 1889.

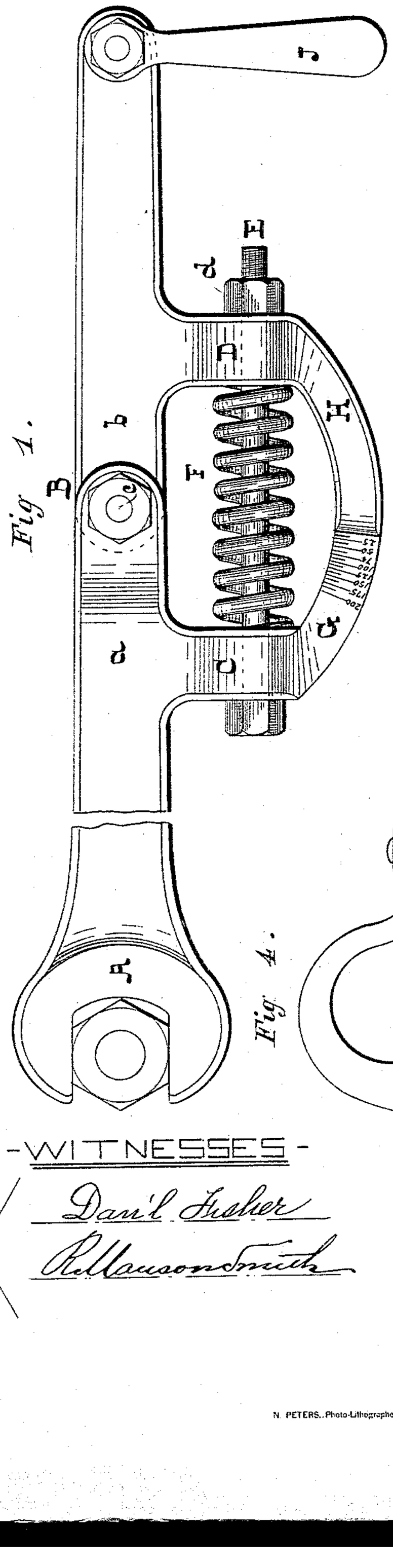

Fig 1.

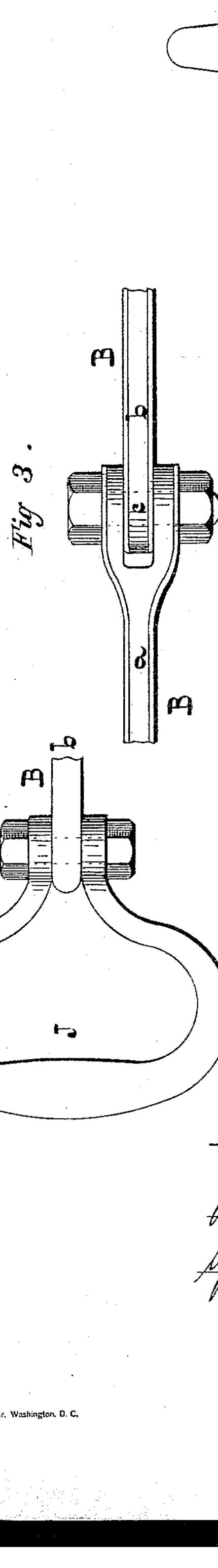

Fig 3.

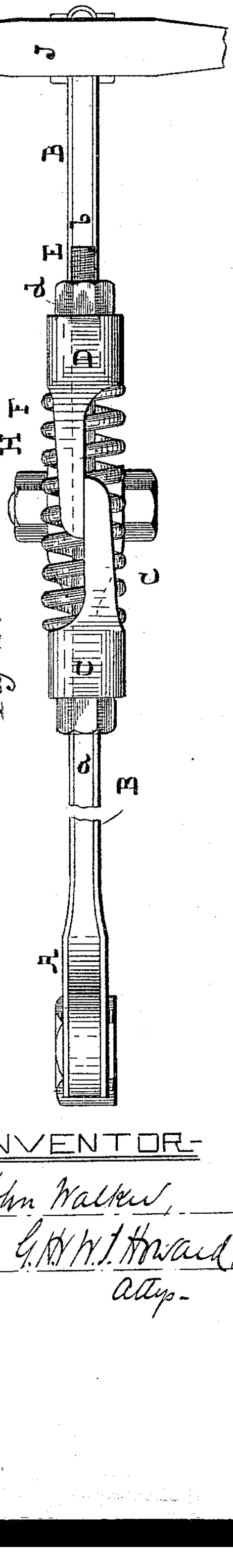

Fig 2.

Fig 4.

-WITNESSES-

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UNITED STATES PATENT OFFICE.

JOHN WALKER, OF CLEVELAND, OHIO.

TENSION-REGISTERING WRENCH.

SPECIFICATION forming part of Letters Patent No. 414,615, dated November 5, 1889.

Application filed February 2, 1889. Serial No. 298,511. (No model.)

To all whom it may concern:

Be it known that I, JOHN WALKER, of the city of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain Improvements in Tension-Registering Wrenches, of which the following is a specification.

It is of great importance in the direction of machinery and bridge-work that all bolts or rods of a common size should be subjected to the same tensile strain; but with wrenches as ordinarily constructed there is nothing to indicate when a desired tension of the bolt or rod is obtained, and the workman is required to depend on his judgment alone or resort to the expedient of sounding the rods with a hammer to ascertain when they are of like tension or under the same strain.

The object of the present invention is to construct a wrench adapted to register or record the strain placed on the bolt as the nut is set up; and to this end my invention consists in combining with a wrench having its shank in two parts hinged or pivoted together a spring which as the shank of the wrench is bent or deflected from its normal shape is compressed, and devices whereby the deflection of the shank or the compression of the spring is registered, as will hereinafter fully appear.

In the further description of the said invention which follows reference is made to the accompanying drawings, forming a part hereof, and in which—

Figures 1 and 2 are respectively a side and an edge view of the invention, and Fig. 3 a reverse edge view of a part of the same. Fig. 4 is a detail of the invention.

Similar letters of reference indicate similar parts in all the figures.

Referring to the drawings, A represents the jaw of the wrench, and B the shank, which is in two parts *a* and *b*, hinged together at *c*.

C and D are lugs on the two parts of the shank, tied together by the bolt E and the nut *d*.

F is a spring coiled about the bolt E and confined endwise between the lugs C and D.

G and H are plates extending, respectively, from the lugs C and D, with their ends lapped, as shown in Fig. 2. The face of the plate G is graduated, and the indicating-marks are preferably numbered, as shown in Fig. 1, in order that the degree of deflection of the shank from a straight line may be ascertained and designated by numerals. The end of the shank is provided with a handle J, in order that the same leverage may be maintained in all cases.

To bring a series of bolts or bars to a uniform tension, it is only necessary that the nuts thereon should be turned until the shank is deflected to the same degree, which is ascertained by the end of the plate H pointing to the same numeral on the plate G.

I claim as my invention—

1. In a wrench, the shank thereof in two parts pivoted together, combined with a bolt which connects the two parts and prevents the deflection of the shank in one direction, a spring to resist deflection of the shank in the other direction, and a register to indicate the degree or extent of the deflection of the shank and the compression of the spring, substantially as and for the purpose specified.

2. In a wrench, the shank thereof in two parts pivoted together, combined with a spring to retard deflection of the shank, and a register to indicate the deflection of the same, substantially as and for the purpose specified.

3. In a wrench, the shank thereof in two parts pivoted together, each part having a lug, combined with a bolt which passes through the said lugs, a spring coiled about the said bolt and confined endwise between the said lugs, and a plate extending from each of the said lugs, the ends of which are lapped, whereby in the deflection of the shank of the wrench from a straight line the lap of the two plates is increased, substantially as and for the purpose specified.

JOHN WALKER.

Witnesses:
FRANK L. HULL,
HARRY A. WESTERFIELD.