

(No Model.)

J. DU SHANE.

WRENCH.

No. 296,942.

Patented Apr. 15, 1884.

Fig. 1.

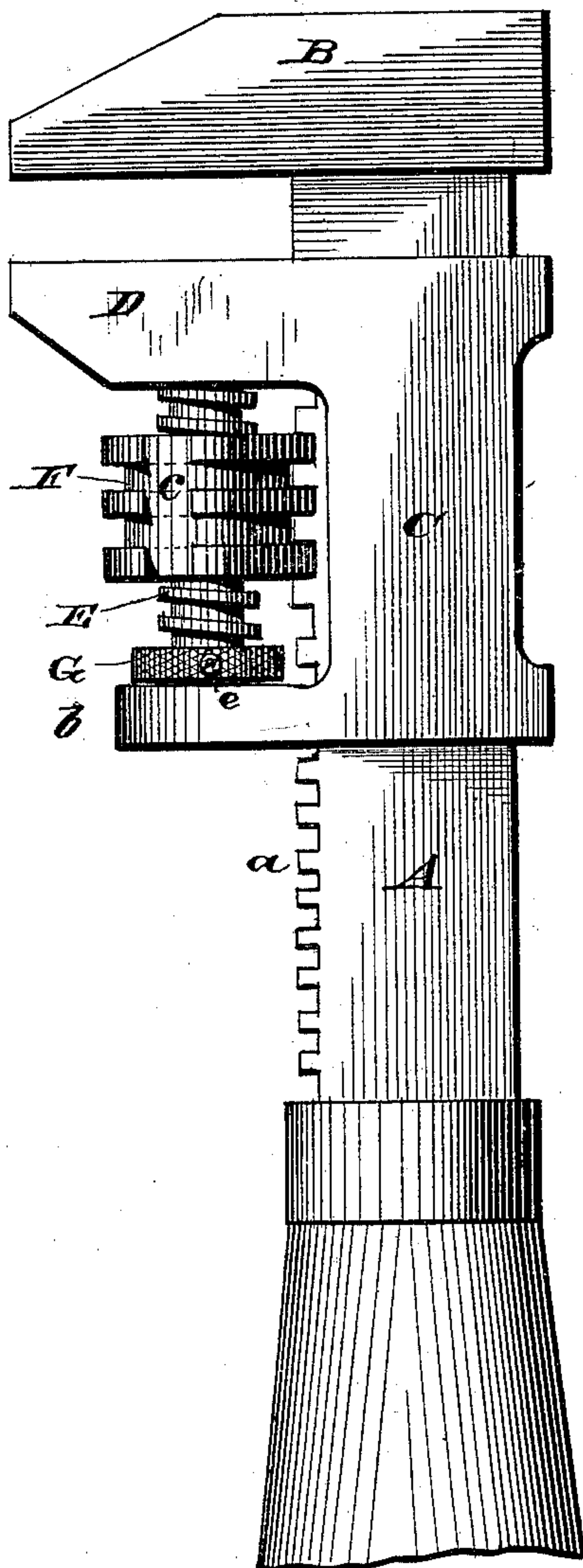


Fig. 2.

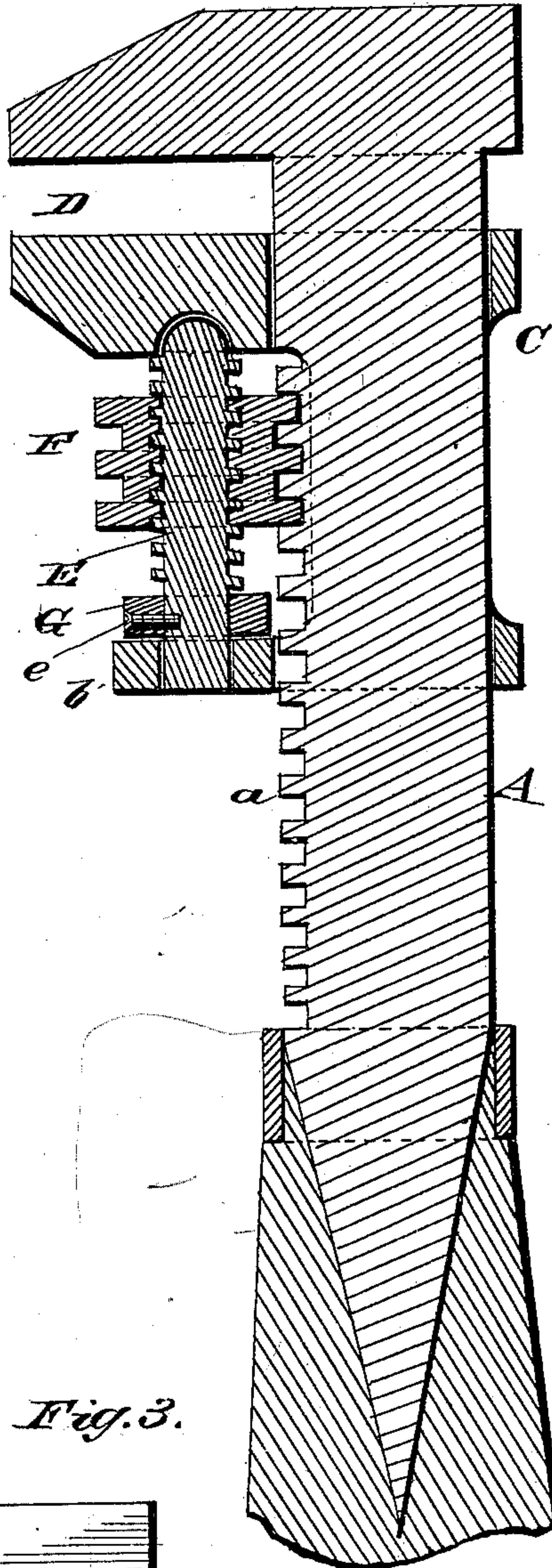
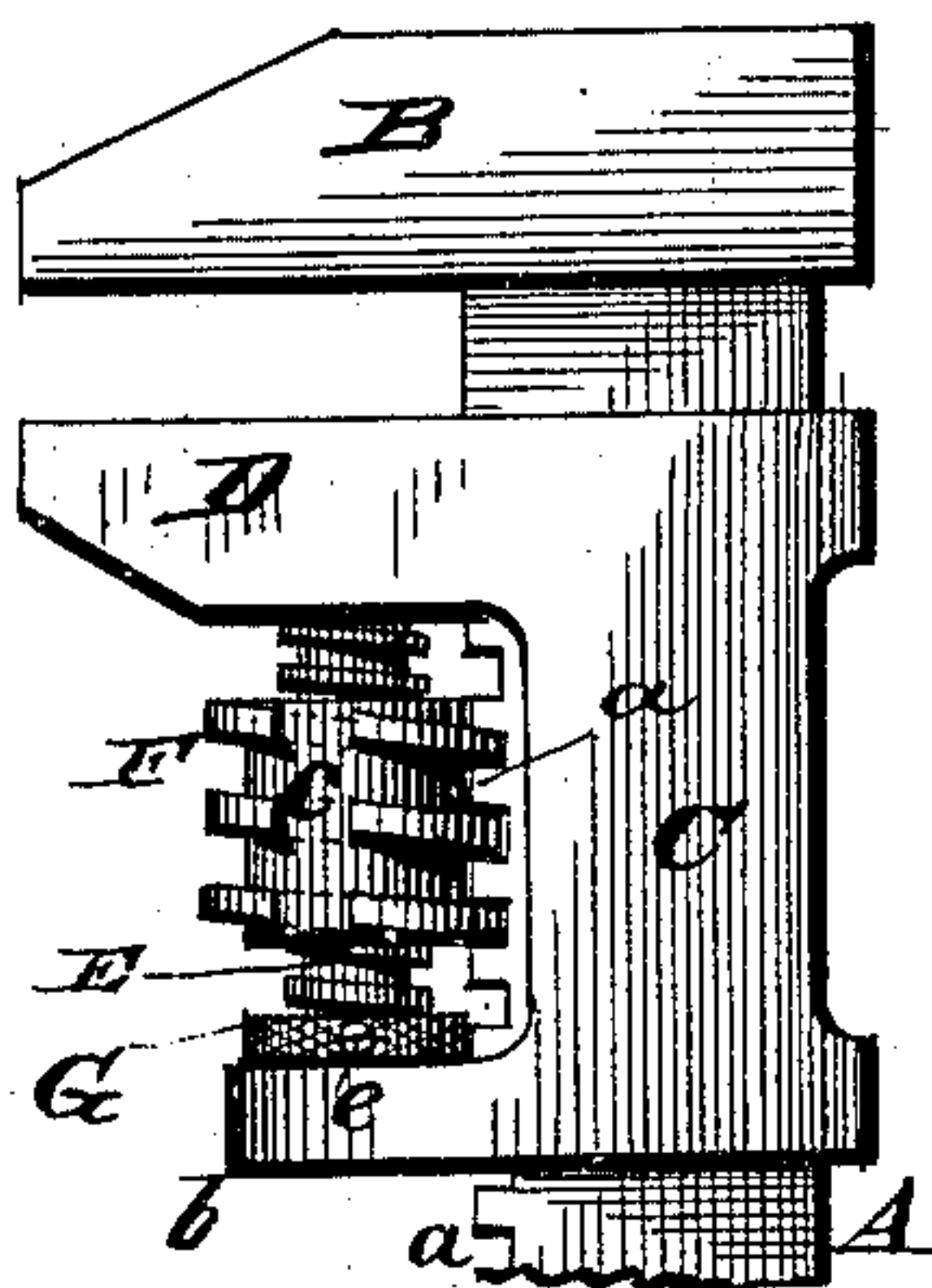


Fig. 3.



WITNESSES

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 296,942, dated April 15, 1884.

Application filed November 30, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES DU SHANE, of South Bend, in the State of Indiana, have invented certain new and useful Improvements in Wrenches; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a side view of my improved wrench. Fig. 2 is a central section through the same. Fig. 3 is a modification of the same.

This invention relates to nut and pipe wrenches; and it consists in providing the movable jaw and its frame with a grooved threaded nut and screw-pin, in combination with the rack-bar of the handle and fixed jaw, whereby a quick movement of the jaw can be effected and a very nice adjustment of the movable jaw obtained, as will be fully understood from the following description, when taken in connection with the annexed drawings.

A designates the rack-bar of the wrench, having on one end a handle, on the other the fixed jaw B, and on one edge teeth *a*.

C designates the frame of the movable jaw D, which is adapted to slide on the rack-bar A, and which is constructed with a foot-piece, *b*, parallel to the movable jaw.

E designates a screw, which is parallel to the toothed edge of the rack-bar, and which has its end bearings in the movable jaw D and foot-piece *b*. This screw has applied on it a nut, F, and a collar, G, which latter is rigidly secured to the screw and bears against the foot *b*, and is used for keeping the screw in its bearings, and also for turning it. The cylindrical nut F, through which the screw E is tapped, has threads on its circumference adapted to engage with the teeth *a* of the rack-bar A, portions of which threads are cut away, as shown at *c*, Fig. 1, to form a groove adapted to receive loosely the toothed edge of the rack-bar, and to allow the jaw D, with its frame, to slide freely on the rack-bar with a quick movement.

The operation of my wrench is as follows: The nut F is turned on its screw E until the toothed edge of the rack-bar is received in the groove *c*. The jaw D can then be quickly slid on the rack-

bar and moved up to the nut to be gripped, so as to confine it between the two jaws. The nut F is then turned and its threads caused to engage with the teeth of the rack-bar A, thus fixing the movable jaw on this bar. Now, by means of the screw E, the movable jaw is adjusted firmly and accurately against the nut. It will be observed that the movable jaw is held by the unbroken side of the threads of nut F, and the adjustment of this jaw is perfected by turning the screw E as above described. The pressure, when a nut is confined between the jaws of the wrench, passes through the upper part of the screw E to the teeth *a* of the rack-bar, no pressure being on the collar G, which latter serves the double purpose of holding screw E in its bearings with the jaw D, and serving as a means whereby said screw can be turned for accurately adjusting jaw D to a nut, and as the collar G is held by a set-screw, *e*, it can be made to take up any lost motion in the parts, due to the wearing of the screw.

Although the threads of nut F are shown in Figs. 1 and 2 as perpendicular to its axis, it is evident that they may as well be spiral, as shown in Fig. 3, and in this case, if the threads of the screw-axis run in the reverse direction—*i. e.*, if they are left-handed while those of the nut are right-handed—this screw-axis may be stationary in the jaw, for the lead of its thread will then be added to that of the nut, and it will thus make up for the lead that has been lost by cutting away part of the threads of this adjusting-nut. The movable jaw will thus become adjustable for any point along the rack-bar, or, in other words, for any sized nut.

The action and principle of the device is the same as that first described—*viz.*, the compensation of the loss of lead occasioned by cutting away part of the threads of the adjusting-nut by mounting and operating said nut on a threaded axis.

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

1. In a nut or pipe wrench, the combination, with the rack-bar, of the fixed jaw, the movable-jaw frame, the screw therein, and a threaded nut on this screw having a groove in its periphery, all constructed and adapted to op-

erate substantially in the manner and for the purposes described.

2. The combination, with the rack-bar, of the fixed jaw, the movable-jaw frame, the adjusting-screw having its bearings therein, the nut
5 on this screw, and the collar G, adjustably fixed thereon, substantially as and for the purposes described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two
witnesses.

JAMES DU SHANE.

Witnesses:

WILLIS A. BUGBEE,
WILLIAM L. KIZER.