

(No Model.)

J. W. CARVER.  
CARRIAGE WRENCH.

No. 548,696.

Patented Oct. 29, 1895.

Fig. 2.

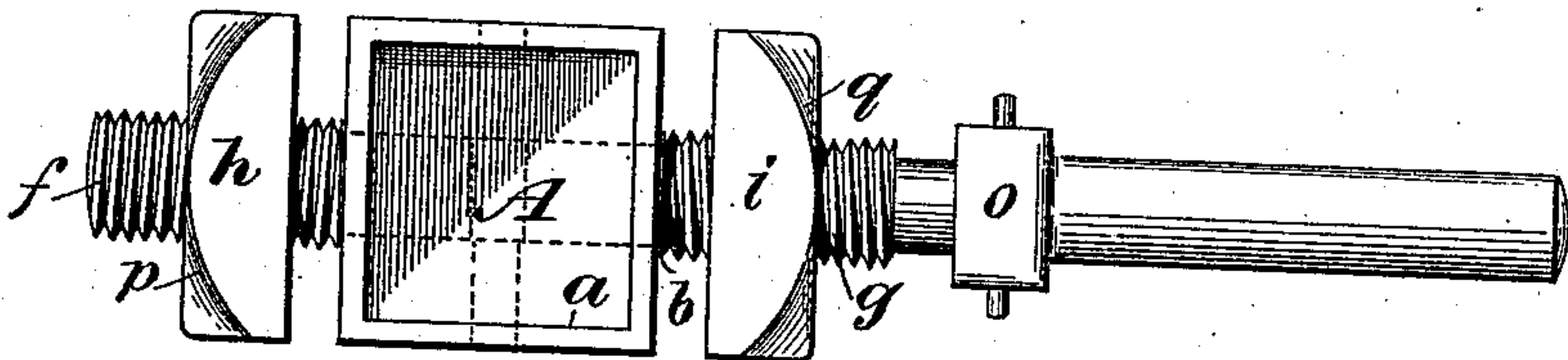


Fig. 1.

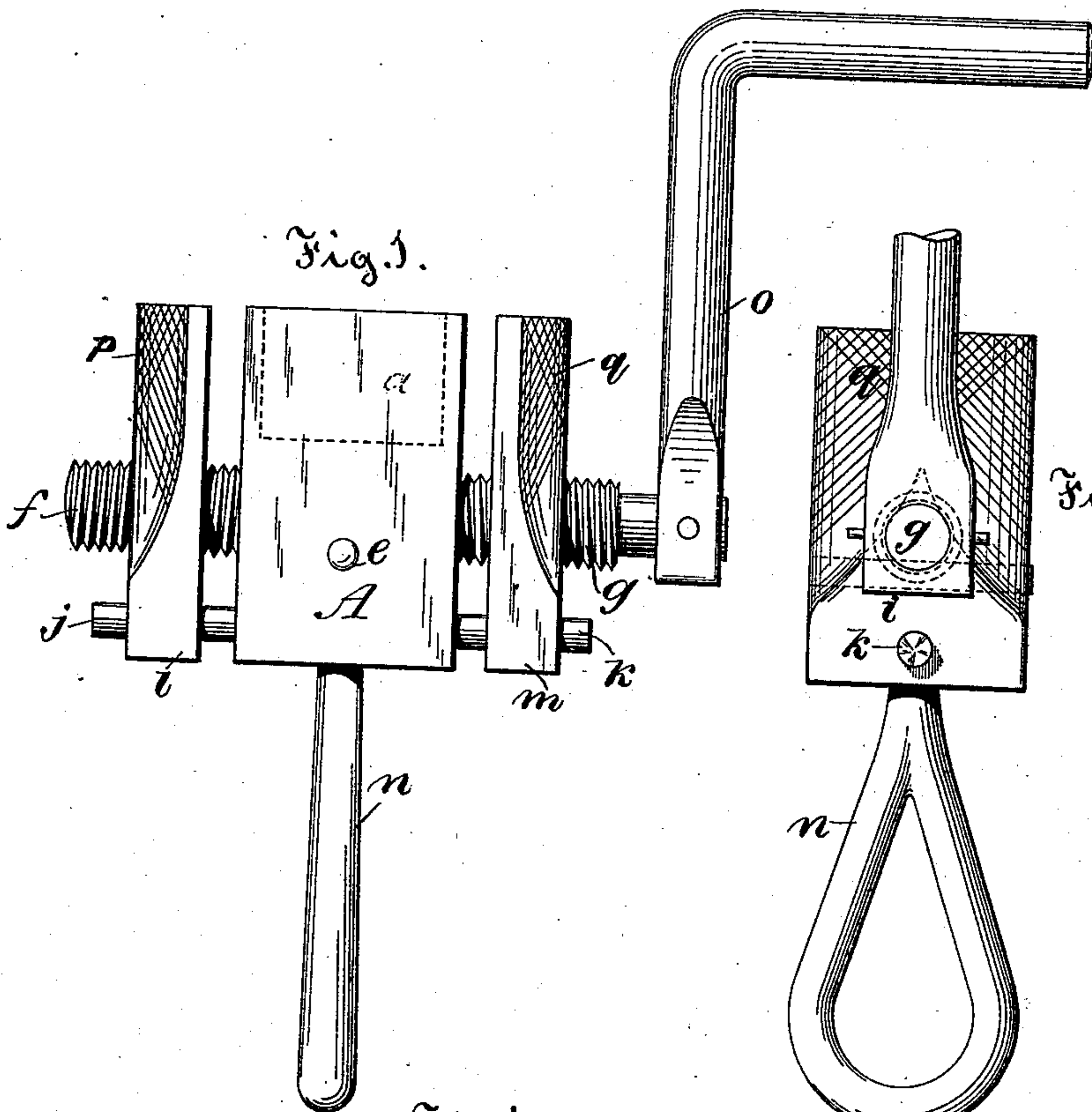


Fig. 3.

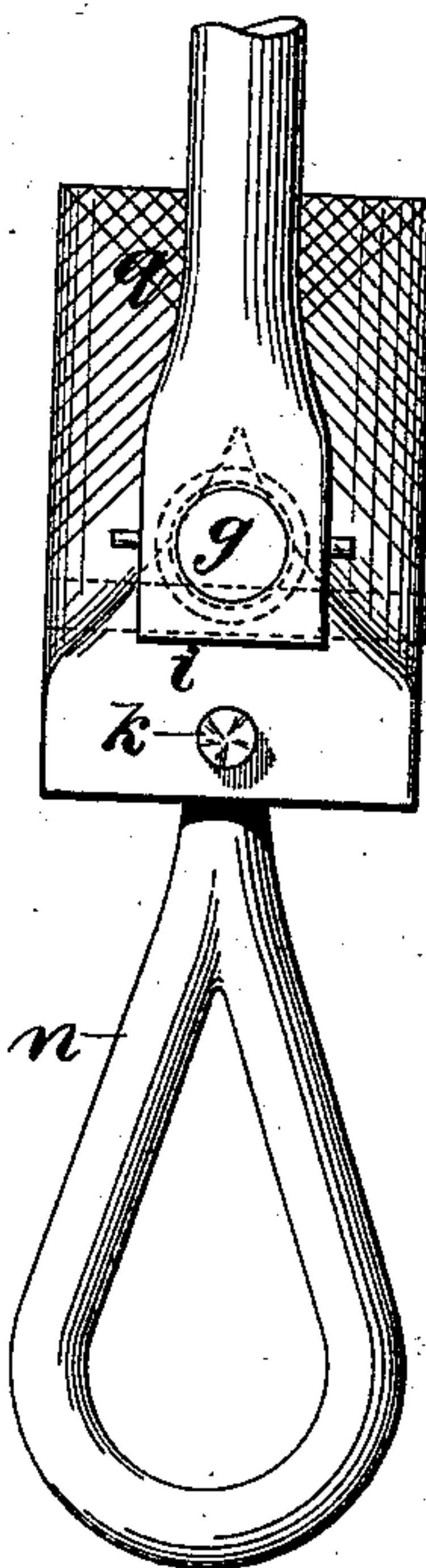
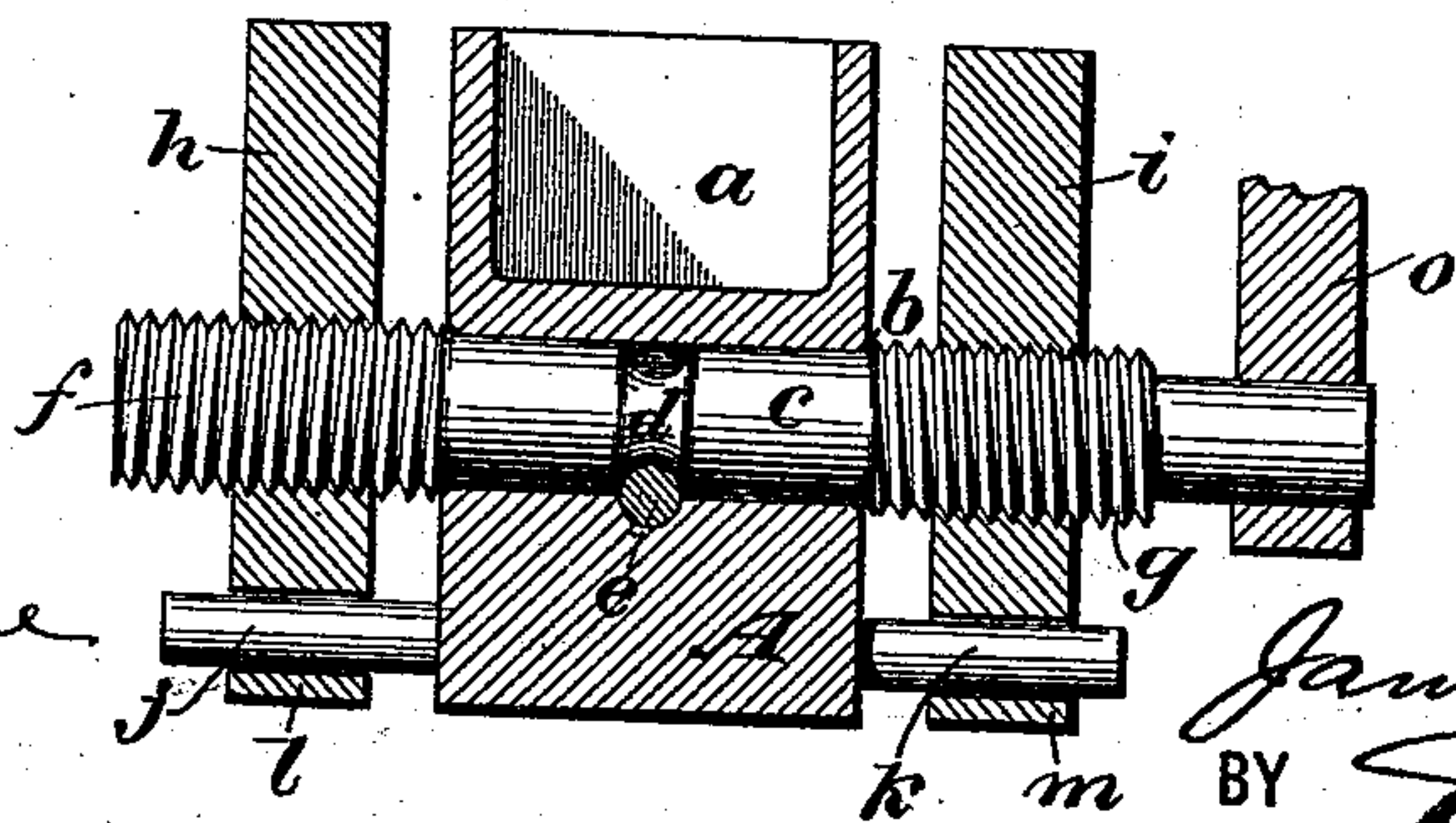


Fig. 4.



WITNESSES:

L. N. Legendre  
Gertrude Jones

INVENTOR

James W. Carver

BY

F. W. Barker

ATTORNEY



# UNITED STATES PATENT OFFICE.

JAMES W. CARVER, OF GRANVILLE, NEW YORK.

## CARRIAGE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 548,696, dated October 29, 1895.

Application filed November 6, 1894. Serial No. 528,009. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. CARVER, a citizen of the United States, residing at Granville, in the county of Washington and State of New York, have invented certain new and useful Improvements in Carriage-Wrenches, of which the following is a full, clear, and exact specification.

This invention relates to carriage-wrenches; and it comprises a clamp which is operated by a compound screw, being specially adapted for tightening and loosening the nuts, which secure carriage-wheels in place.

In order that my invention may be fully described and explained in detail, I have annexed hereto a sheet of drawings, in which—

Figure 1 is a side elevation of the carriage-wrench complete. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a right end view of Fig. 1. Fig. 4 is a central vertical section of Fig. 1.

In the drawings, A indicates the central main portion of the wrench, the said portion A having the nut-receiving mouth *a*. Below said mouth *a* and through the body portion A is a transverse aperture *b*. The central plain or pivotal portion *c* of the compound screw is placed within this aperture *b* and is held from lateral movement therein by means of a groove *d* and a pin *e*, engaging in said groove. The right and left hand screws *f g*, which are connected with the central portion *c*, forming a compound screw, are passed, respectively, through side pieces *h i*, the threads of said screws engaging with like threads within the said pieces *h i*. Laterally-extending pins *j k* are secured at either side of the portion A, the said pins passing loosely through pivotal bearings *l m* in the side pieces *h i*. A handle *n* is secured to the portion A, preferably as shown in the drawings, and a crank-handle *o* is fastened at the free end of one of the screws *f g*, preferably as shown in the drawings, for the purpose of operating the wrench.

It will be readily seen from the above de-

scription, taken in connection with the annexed drawings, that the movement of the handle *o* will cause the side pieces *h i* to travel toward or from the central main portion A, the said pieces being guided in their movement by the pins *j k*. It will thus be understood that upon inserting the mouth portion *a* over the nut in a wheel-hub and then causing the side pieces *h i* to travel outwardly the roughened surfaces *p q* of said side pieces will come in contact with the inside of the hub-flange and may obtain a firm hold thereupon. Then by continuing to turn the crank *o* (the wheel-shaft being held against rotation) the nut, which is within the mouth *a*, will be released or tightened, as may be desired.

Having now described my invention, I declare that what I claim is—

The central portion or body, provided with the nut mouth or recess in its inner end, a handle *n* upon its outer end, and guiding pins *j k* upon its opposite sides; and having an opening *b* through its center, combined with the right and left hand screw, having a groove *d*, at or near its center; the pin *e*, which extends transversely through the body and holds the screw in position, the two jaws *h, i*, placed upon the threaded portions of the screw and made to move in opposite directions, and having their inner and outer ends rounded away and roughened; and the handle upon one end of the screw, whereby the wrench is supported in position by the handle *n*, while the handle *o* is revolved to cause the jaws to move outward against the sides of the hub, substantially as shown.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of July, 1894.

JAMES W. CARVER.

Witnesses:

SAMUEL G. AYRES,  
JURDEN E. SEELEY.