

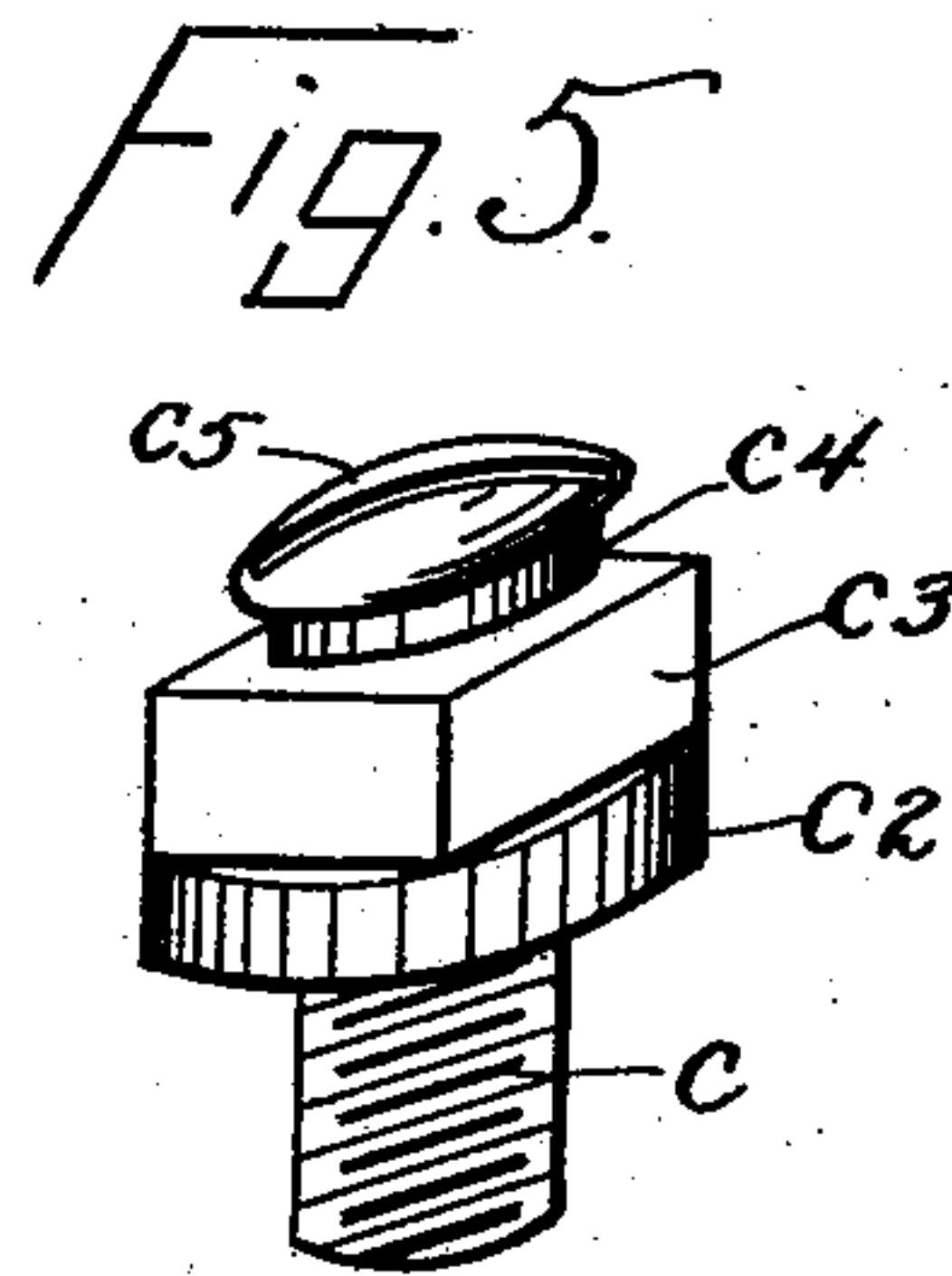
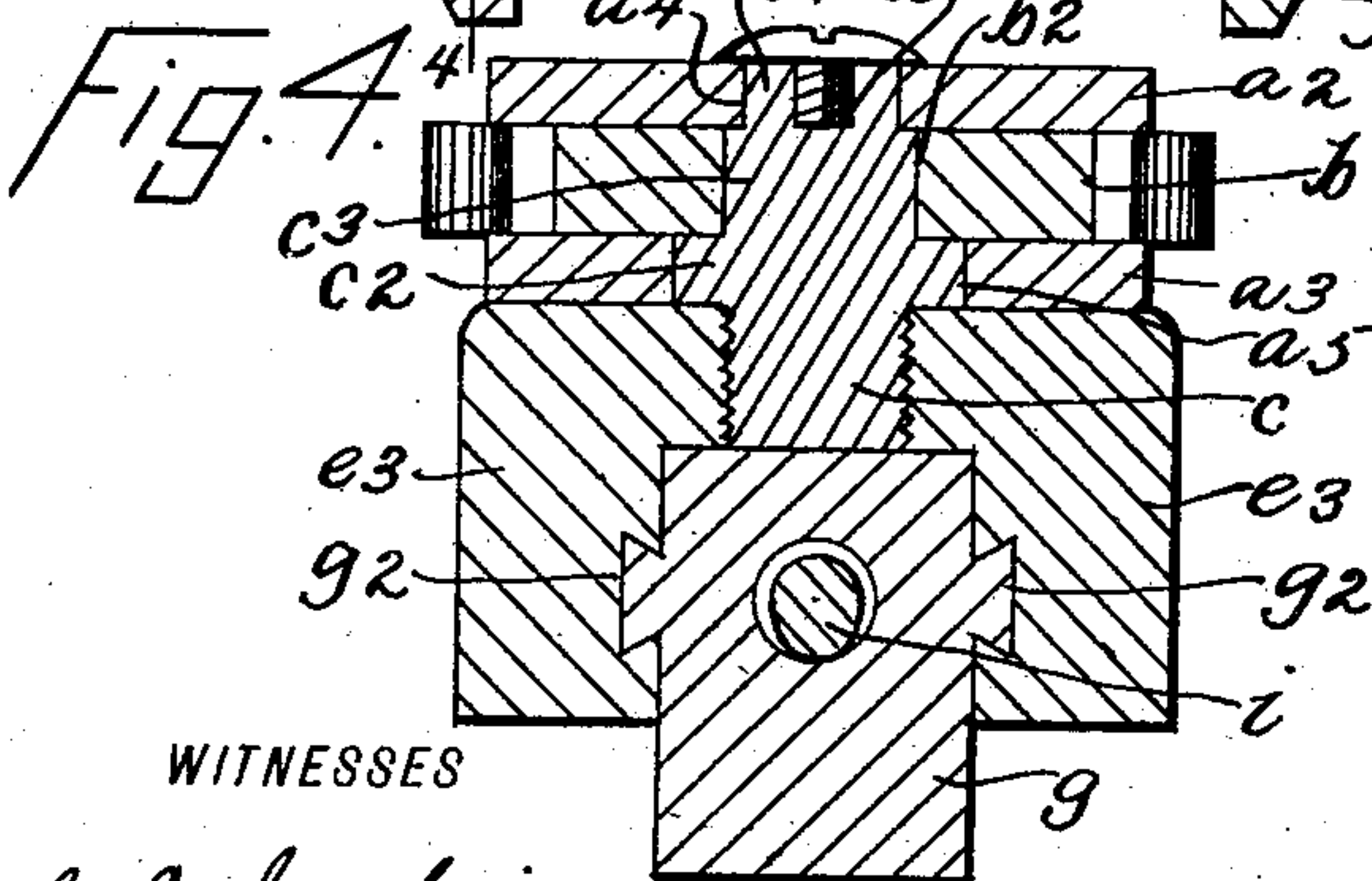
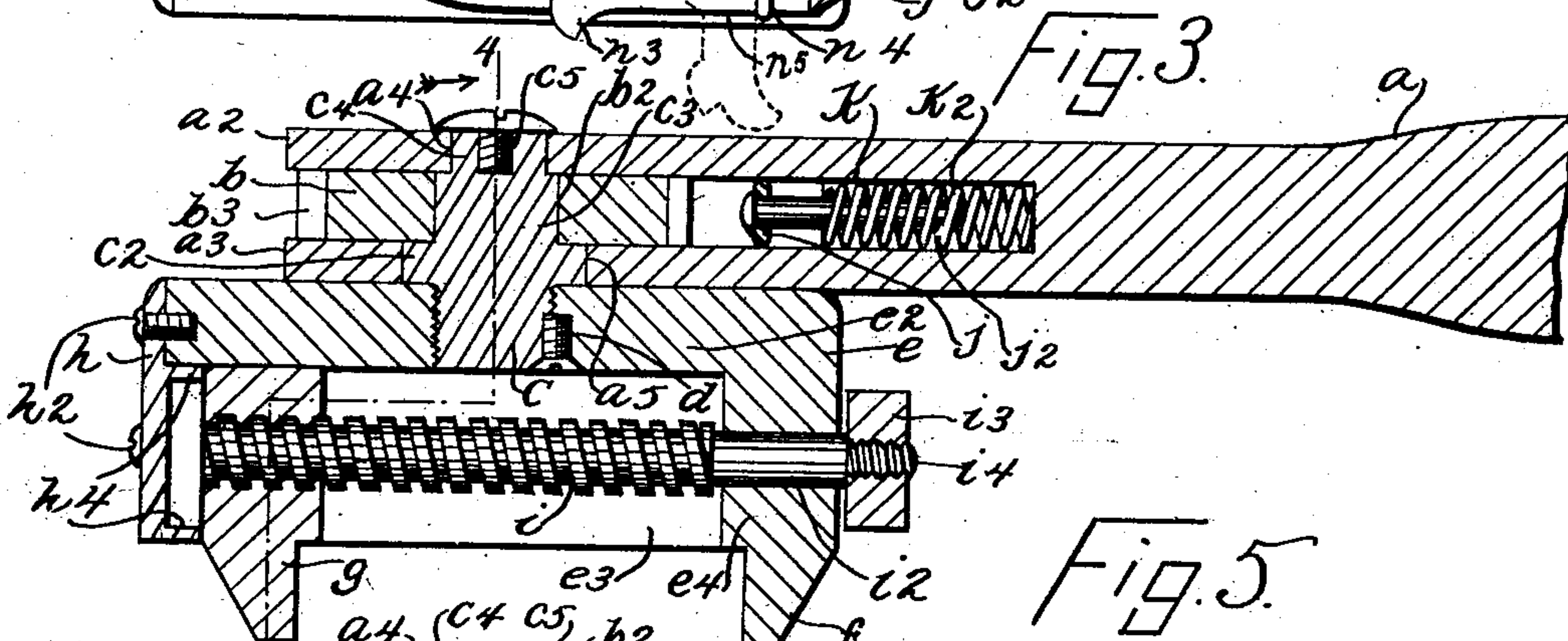
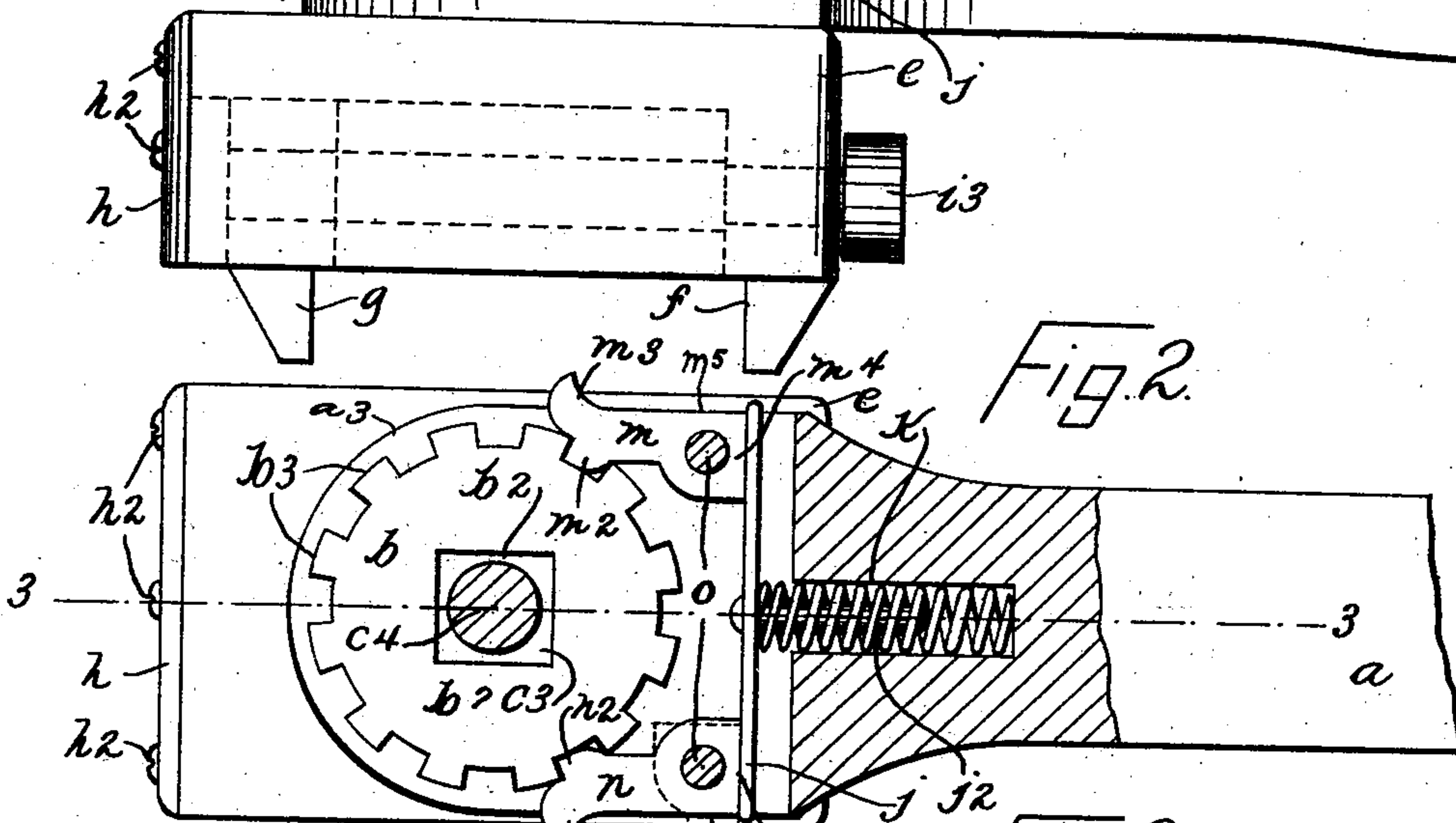
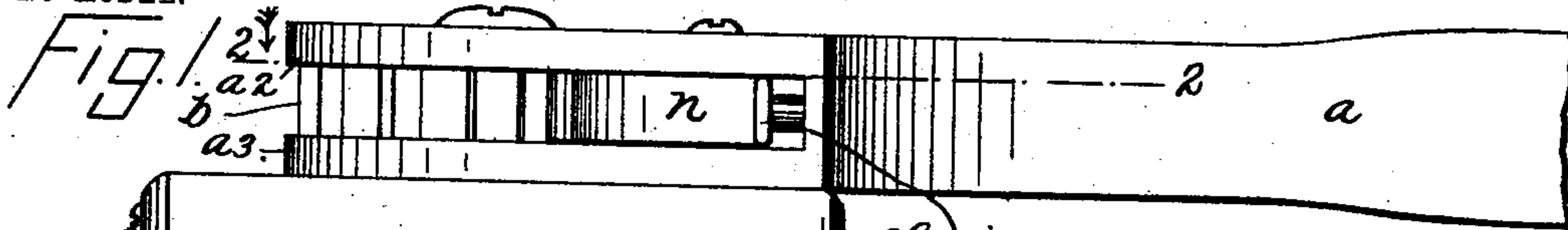
No. 747,419.

PATENTED DEC. 22, 1903.

G. HANSEN.
RATCHET WRENCH.

APPLICATION FILED MAR. 25, 1903.

NO MODEL.



WITNESSES

S. L. Gottheimer.
J. C. Larsen

INVENTOR
George Hansen
BY
Edgar Tate & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE HANSEN, OF NEW YORK, N. Y.

RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 747,419, dated December 22, 1903.

Application filed March 25, 1903. Serial No. 149,422. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HANSEN, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Ratchet-Wrenches, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved ratchet-wrench which is simple in construction and operation and which may be used either as a ratchet-wrench or as an ordinary wrench; and with these and other objects in view the invention consists in a wrench of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side view of my improved wrench; Fig. 2, a section on the line 2-2 of Fig. 1; Fig. 3, a section on the line 3-3 of Fig. 2; Fig. 4, a section on the line 4-4 of Fig. 3, and Fig. 5 a perspective view of the detail of the construction.

In the practice of my invention I provide a handle-piece *a*, which is provided at one end with two parallel plates or jaws *a*² and *a*³, and in the following description the plate or jaw *a*³ for convenience will be called the "bottom plate or jaw," while the plate or jaw *a*² will be called the "top plate or jaw," and between said plates or jaws is placed a ratchet-wheel *b*, provided with a central angular opening *b*² and with the usual ratchet-teeth *b*³. The top plate or jaw *a*² is provided with a circular opening *a*⁴ and the bottom plate or jaw *a*³ with a larger circular opening *a*⁵. I also provide a screw *c*, having a large circular journal member *c*², which is adapted to fit in the opening *a*⁵ in the bottom plate or jaw and above which is an angular member *c*³, adapted to fit in the angular opening *b*² in the ratchet-wheel *b*, and above this is a smaller circular journal member *c*⁴, which is adapted to fit in the circular opening *a*⁴ in the top plate or jaw *a*², and a screw *c*⁵ is screwed into the journal member *c*⁴.

Screwed onto the screw *c* and secured thereof by a lock-screw *d* is a box member *e*, composed of a top plate *e*², two side plates *e*³, and an end member *e*⁴, provided with a stationary jaw *f*, which is adjacent to the handle *a*, and the opposite end of the box member *e* is open and placed therein is a movable jaw *g*. The end of the box member *e* opposite the handle *a* is closed by a plate *h*, which is secured in place by screws *h*² and provided on its inner surface with inwardly-directed members *h*⁴, which limit the outward movement of the jaw *g*, and a screw *i* is also provided, one end of which passes through the movable jaw *g* and the other end of which is provided with a cylindrical member *i*², which passes through the stationary jaw *f* or the end piece *e*⁴ of the box member *e* and is provided with a nut *i*³.

In placing the screw *i* in position the plate *h* must be removed and the movable jaw *g* screwed onto said screw *i*, after which the cylindrical member *i*² of said screw is passed through the end member *e*⁴ of the box member *e*, and the plate *h* is then secured in position and the nut *i*³ is screwed onto the part *i*² of the screw *i*, and by turning the screw *i* by means of the nut *i*³, which serves as a head or handle for this purpose, the position of the jaw *g* may be regulated, or said jaw may be adjusted toward and from the jaw *f*, as will be readily understood.

Any suitable device may be substituted for the nut *i*³, and the reduced member *i*⁴ of the shaft *i*², onto which said nut is screwed, may be made in any other way or angular in cross-section, if desired, and the nut *i*³ or a similar device may be held thereon by a key-pin.

Between the plates or jaws *a*² and *a*³ adjacent to the handle member is placed a transverse plate *j*, provided with a pin *j*², which passes into a socket or recess *k* in the handle *a*, and in which is placed a spring *k*², which bears on the plate *j* and normally serves to force it in the direction of the ratchet-wheel *b*. Pivoted between the opposite ends of said plate and said ratchet-wheel, as shown at *o*, are two similar dogs *m* and *n*, which are provided, respectively, with an inwardly-directed lug or projection *m*² and *n*² and with an outwardly-curved finger *m*³ and *n*³, and the pivoted ends of said dogs are provided with two plane surfaces or sides *m*⁴ and

m^5 and n^4 and n^5 , respectively, on which in certain positions of said dogs the plate j is adapted to bear, as shown in Fig. 2, and these surfaces or faces on the respective dogs are
5 at right angles to each other.

The adjustment of the movable jaw g as hereinbefore described in the operation of this part of the wrench will be the same as with other devices of this class, and when it
10 is desired to use the wrench as an ordinary wrench the dogs m and n are held in the position shown in full lines in Fig. 2 by the plate j , and said wrench may be operated in the manner of an ordinary wrench or of an
15 ordinary monkey-wrench; but when it is desired to use the device as a ratchet-wrench one of the dogs is turned outwardly, as shown in dotted lines at the bottom of Fig. 2, while the other dog is left in operative position or
20 in the position shown in full lines in Fig. 2.

It will be observed that the movable jaw g is provided at its opposite sides with longitudinal tongues g^2 , which fit in corresponding grooves in the sides e^3 of the box member e ,
25 and the form of these tongues and grooves is such that the dog g can only move longitudinally of the box member. It will also be observed that the device consisting of the screw c and the parts c^2 , c^3 , and c^4 constitute
30 a journal which is revolvably mounted in the plates or jaws a^2 and a^3 and with which the ratchet-wheel b is connected, and the screw or projecting portion c thereof forms simply a connection for the box member e , and this
35 connection may be made of other form, if desired.

My improved wrench is simple in construction and operation and cannot easily get out of order, and it may be used whenever de-

vices of this class are required, and changes 40 in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what 45 I claim as new, and desire to secure by Letters Patent, is—

A wrench comprising a handle provided at one end with parallel jaws, a ratchet-wheel mounted between said jaws, two dogs pivoted 50 at the opposite sides of said jaws and between the ratchet-wheel and the handle and adapted to operate in connection with said wheel, means for holding said dogs in or out of engagement with said wheel, a journal 55 passing through said jaws and on which said wheel is secured, one end of said journal being projected, an oblong box member secured to the projecting end of the journal and provided at one end with a stationary jaw and 60 at the opposite end with a removable member, a movable jaw mounted in the box member adjacent to the removable end member, and a screw mounted in said box member and on which the movable jaw is mounted, and one 55 end of which is cylindrical in form and passes through the end of the box member with which the stationary jaw is connected, substantially as shown and described.

In testimony that I claim the foregoing as 70 my invention I have signed my name, in presence of the subscribing witnesses, this 23d day of March, 1903.

GEORGE HANSEN.

Witnesses:

J. C. LARSEN,
F. A. STEWART.