

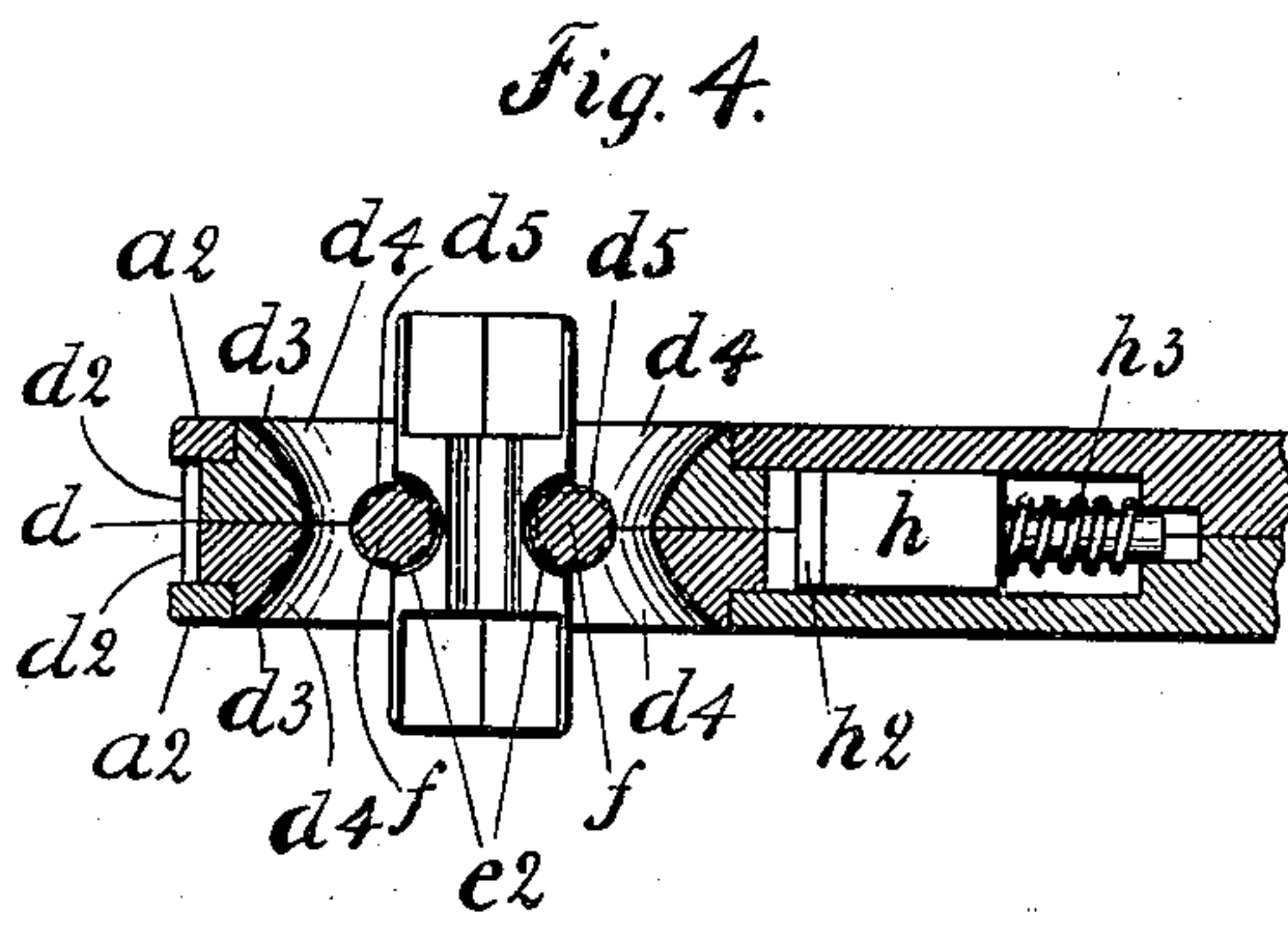
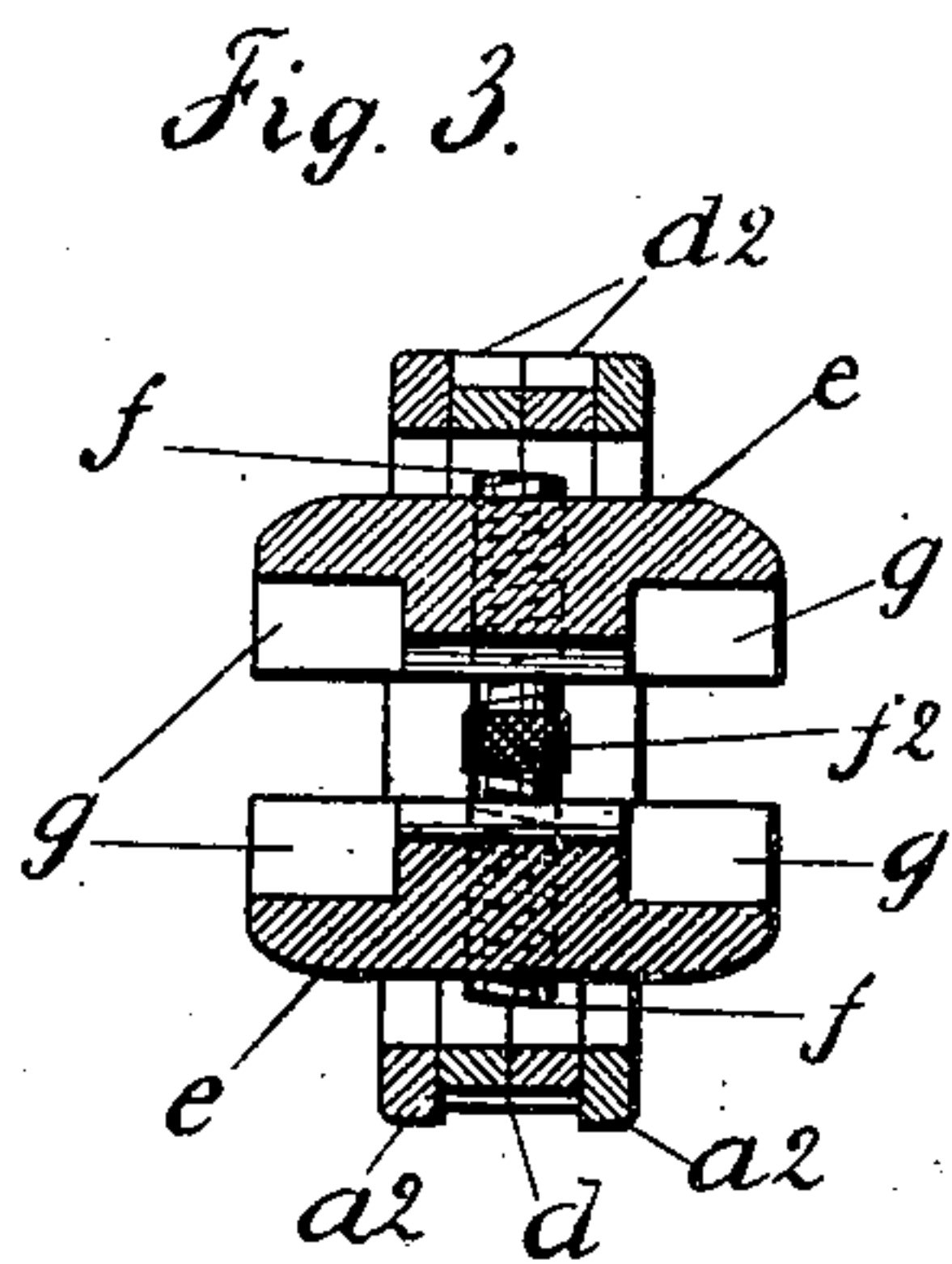
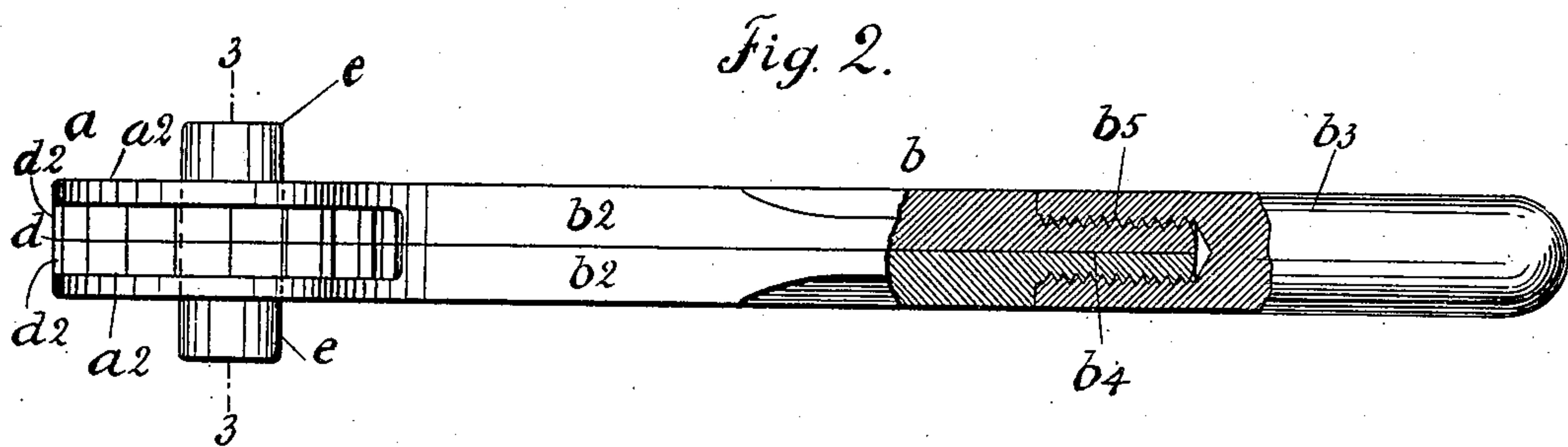
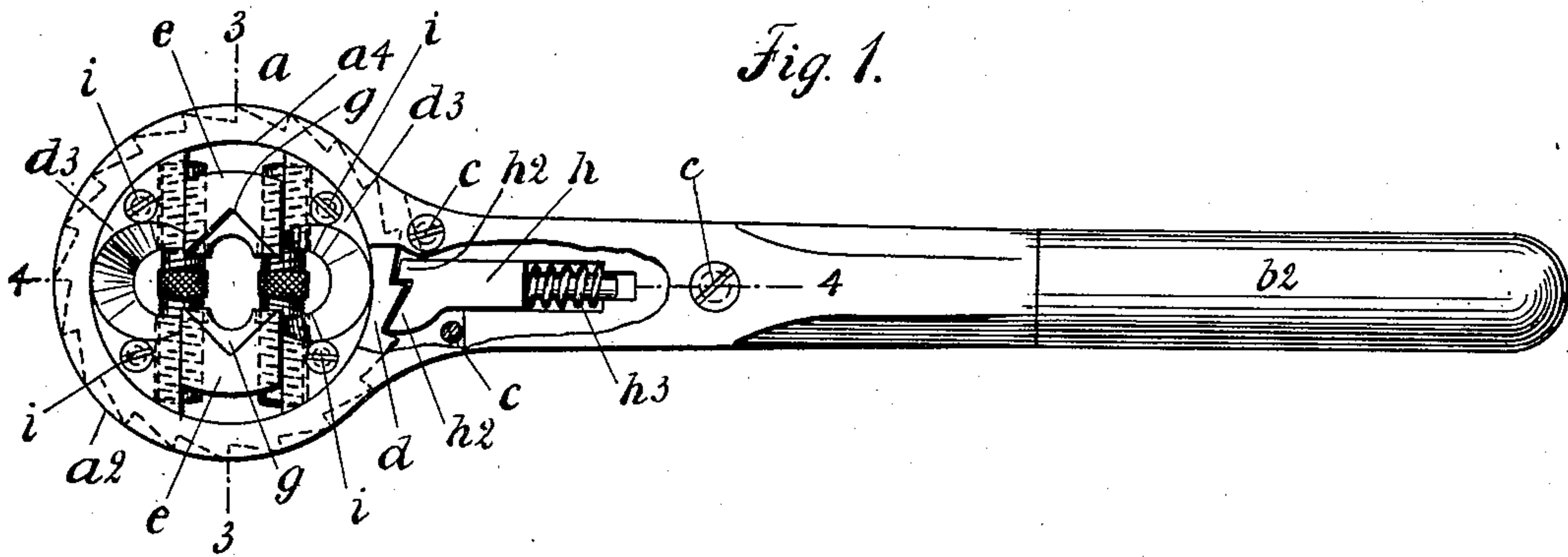
No. 742,638.

PATENTED OCT. 27, 1903.

P. HARDING.
RATCHET WRENCH.

APPLICATION FILED JUNE 2, 1903.

NO MODEL.



WITNESSES

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RATCHET-WRENCH.

SPECIFICATION forming part of Letters Patent No. 742,638, dated October 27, 1903.

Application filed June 2, 1903. Serial No. 159,738. (No model.)

To all whom it may concern:

Be it known that I, PAUL HARDING, a citizen of the United States, residing at Long Island City, in the county of Queens 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, strong and durable, and both jaws of which may be quickly and easily adjusted, so as to adapt the wrench to nuts of various classes and sizes and which may be used in two different positions; and with this and other objects in view the invention consists in a ratchet-wrench 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 plan view of my improved wrench; Fig. 2, a side view thereof, part of the construction being shown in section; Fig. 3, a transverse section on the line 3 3 of Figs. 1 and 2, and Fig. 4 a longitudinal section on the line 4 4 of Fig. 1.

In the practice of my invention I provide a wrench of the class specified comprising a head portion a , composed of two separate circular jaws a^2 , and a handle portion b , composed of two separate parts b^2 , formed integrally with the separate jaws a^2 of the head portion a , and the third part b^3 , which is connected with the parts b^2 . The parts b^2 of the handle b are provided with a screw-threaded extension b^4 and the part b^3 with a screw-threaded socket b^5 , into which the extension b^4 is screwed, and by means of this construction the part b^3 of the handle holds the parts b^2 together and aids in holding the jaws a^2 of the head portion a together, and the said parts b^2 of the handle and jaws a^2 of the head portion a are also secured together by means of screws or rivets c .

Between the jaws a^2 of the head a is placed an annular ratchet d , composed of two separate similar parts d^2 , and the separate parts

d^2 of the annular ratchet d are provided at their opposite sides with thickened members or projections d^3 , the outer sides of which are segmental in form and the inner faces straight, and the members or projections d^3 fit in the circular openings a^4 in the circular jaws a^2 of the head portion a . The members or projections d^3 of the separate parts of the ratchet d^2 are provided in their inner faces and at the opposite sides with beveled recesses d^4 and with threaded grooves d^5 , which are segmental in cross-section, and mounted between these members or projections d^3 are radially-movable jaws e , which project above and below the head a and which are provided in their opposite side faces with threaded grooves e^2 , which are segmental in cross-section and which correspond with the grooves d^5 and form in connection therewith threaded sockets into which are placed screws f . The threads on the opposite ends of the screws f are reverse threads, and the threads in the sockets in which the screws f are placed are similar in form, and the screws f are provided centrally with annular, raised, and milled portions f^2 , and by inserting the thumb or finger into the recesses d^4 in the members or projections d^2 the screws f may be turned and the jaws e adjusted radially, as will be readily understood, and the jaws e are provided in their opposite ends with recesses g , adapted to receive nuts.

Mounted in the handle portion b , adjacent to the head a , is a spring-operated pawl or dog h , having two noses h^2 in the form of construction shown, and which are adapted to operate in connection with two of the teeth of the ratchet d , and this pawl is operated by a spring h^3 , which forces the noses thereof into connection with said teeth. It will be apparent that the pawl h will operate with only one nose; but I prefer to provide two, so as to add to the strength thereof.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings. It will be apparent that either end of the jaws e may be applied to a nut and the nut may be turned by swinging the handle b in opposite directions, the dog h operating to turn the ratchet d when the handle is moved in one direction and the noses thereof

passing backwardly over the teeth of the ratchet when the handle is moved in the opposite direction.

It will be observed that the members or projections d^3 , between which the jaws e are placed, are flush with the top and bottom of the head a and the members d^2 of the ratchet are secured together by screws or bolts i , and in order to place the screws f in position and assemble the separate parts of the device it is necessary that the ratchet d be made of two parts, as will be readily understood.

My improved wrench is simple in construction and operation and may be conveniently used wherever devices of this class are required, and either the top or bottom portion of the head a may be employed, and various changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

25 A ratchet - wrench comprising a circular head composed of two circular jaws, a ratchet-

wheel mounted between the jaws and provided at its opposite sides with projections or members which extend through and are flush with the top and bottom of the head, radially-adjustable jaws mounted between said projections or members, screws placed between said jaws and said projections or members, said screws being placed in sockets formed partially in said jaws and partially in said projections or members, the threads on the opposite ends of the screws and in the opposite ends of the sockets being reversed threads, means for turning said screws, and a spring-operated pawl mounted in the handle of the wrench adjacent to the head and operating in connection with the ratchet, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 1st day of June, 1903.

PAUL HARDING.

Witnesses:

F. A. STEWART,
L. THIEDE.