

No. 795,434.

PATENTED JULY 25, 1905.

A. GAGNON.  
WRENCH.

APPLICATION FILED APR. 17, 1905.

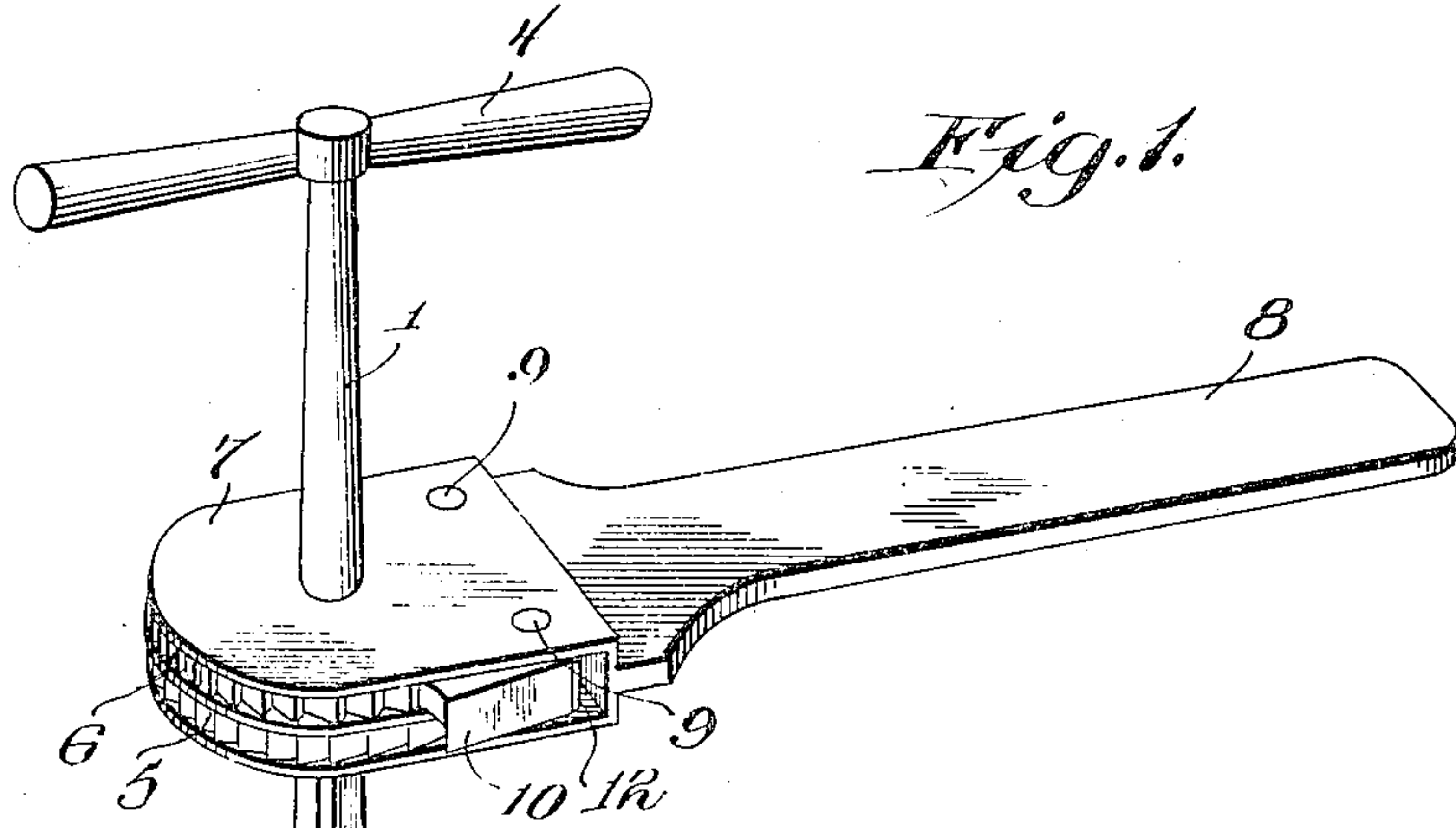


Fig. 1.

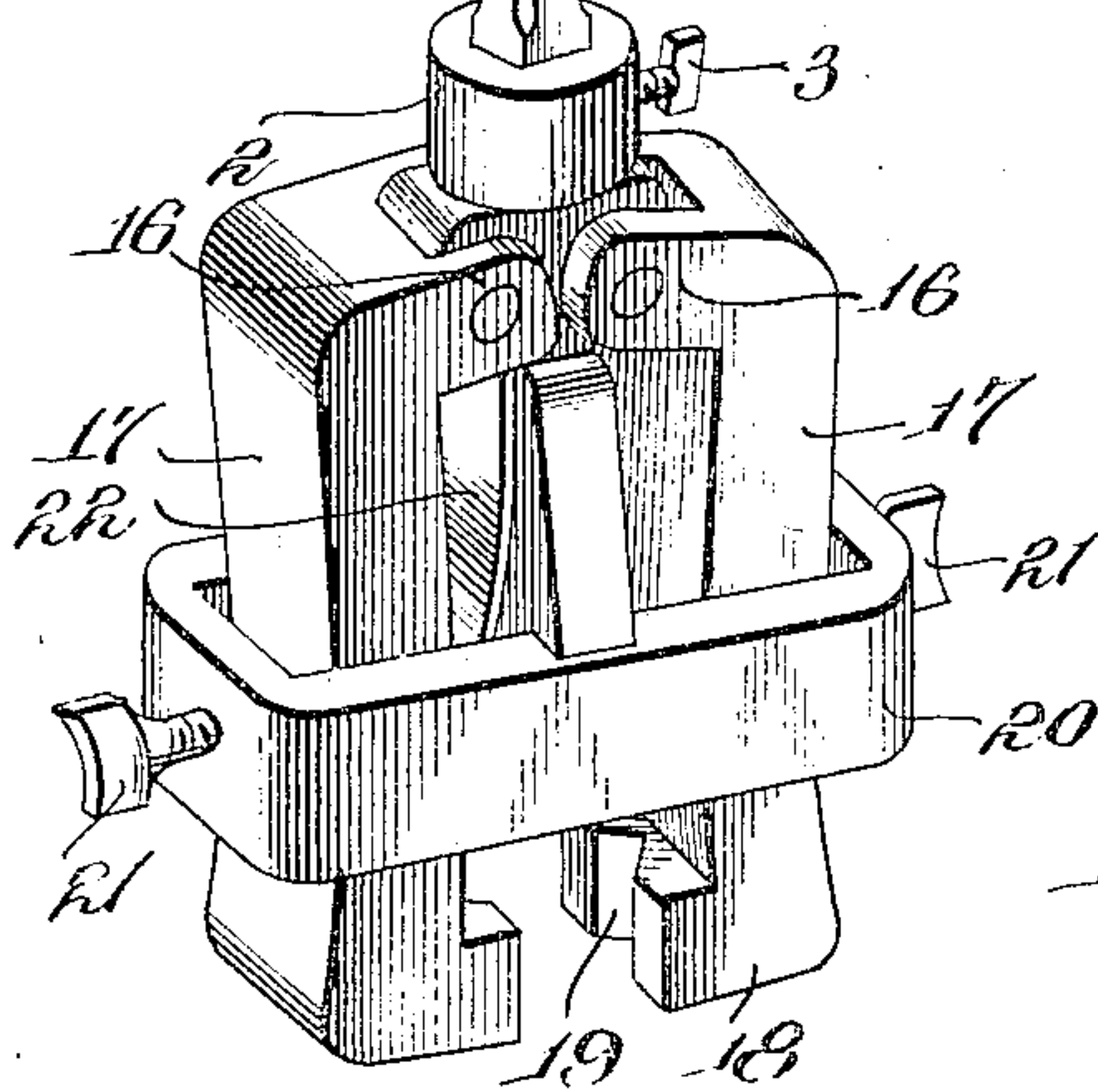


Fig. 2.

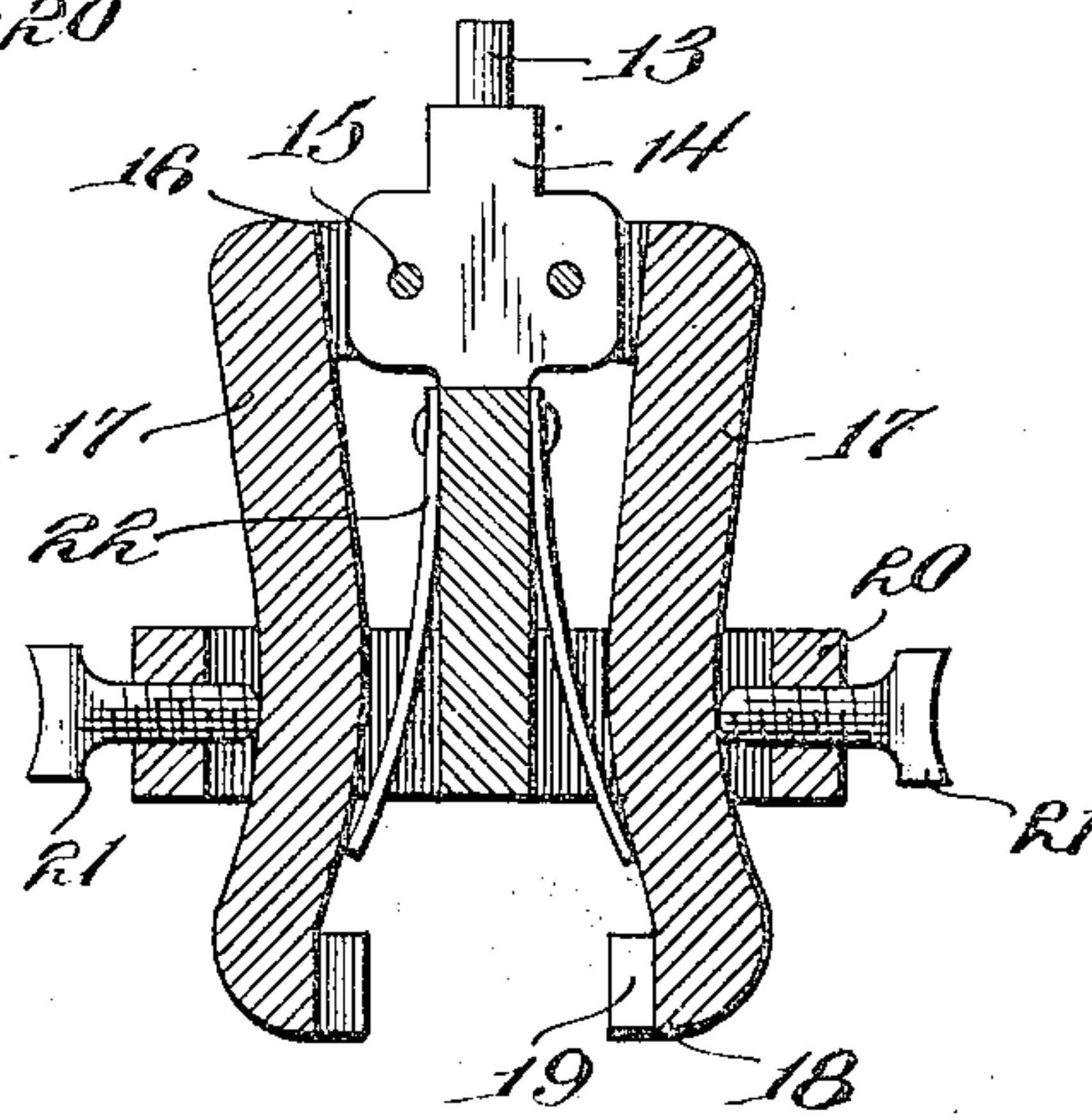
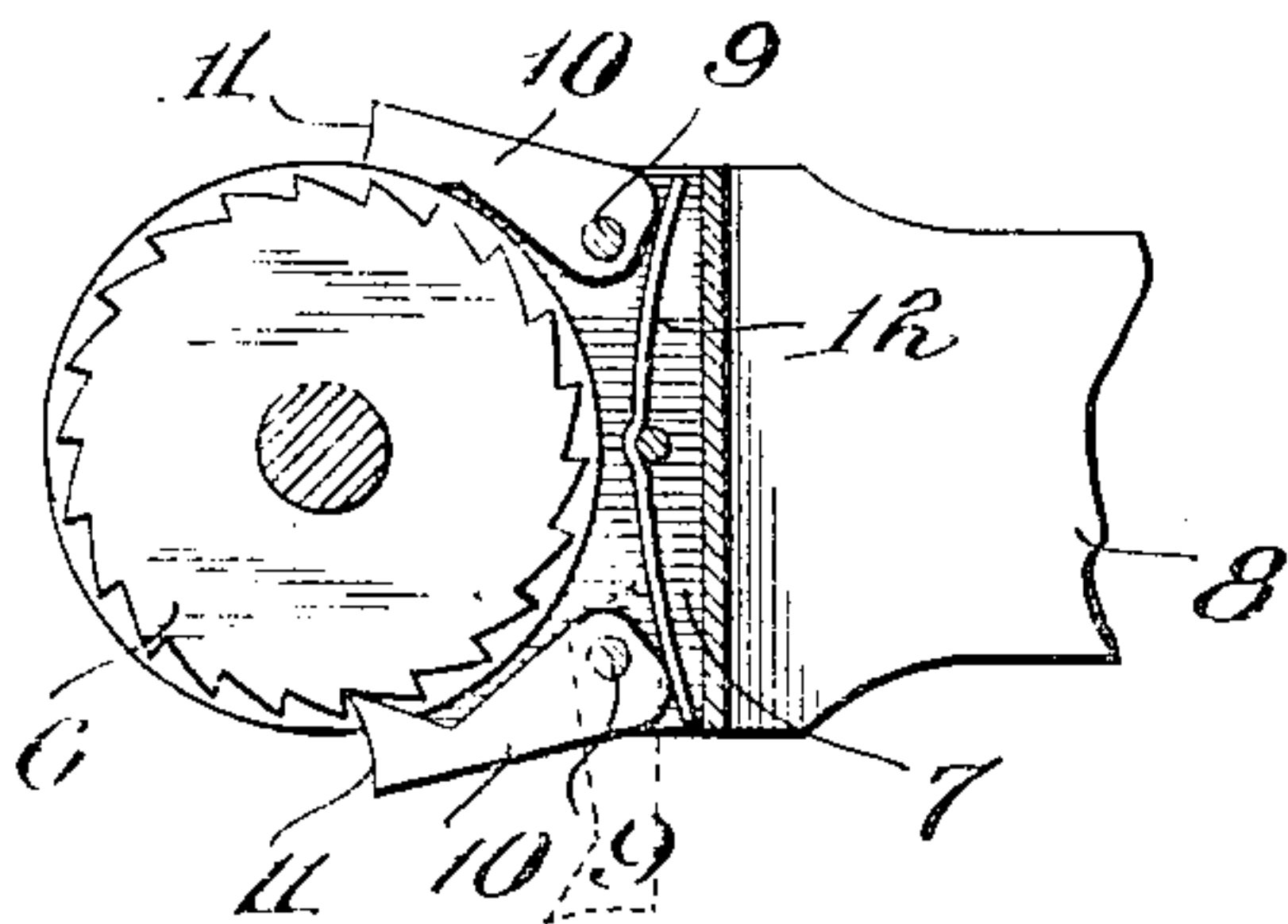


Fig. 3.



Witnesses  
Louis Starke  
Herbert D. Lewson.

Inventor  
A. Gagnon,  
By W. J. Fitzgerald & Co.,  
Attorneys



# UNITED STATES PATENT OFFICE.

ABRAHAM GAGNON, OF HELMVILLE, MONTANA

## WRENCH.

No. 795,434.

Specification of Letters Patent.

Patented July 25, 1905.

Application filed April 17, 1905. Serial No. 255,998.

*To all whom it may concern:*

Be it known that I, ABRAHAM GAGNON, a citizen of the United States, residing at Helmville, in the county of Powell and State of Montana, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in wrenches, and more particularly to devices of this character having ratchets for facilitating the manipulation thereof.

The object of the invention is to provide a light and simple device of this character which is especially suitable for tightening or loosening burs or nuts on binders or other machines, where they are often located where they cannot be readily reached by an ordinary wrench.

Another object is to provide a socket adapted to be rotated by a ratchet and to receive a head of novel construction which may be detachably connected thereto.

With the above and other objects in view the invention consists of a stem having oppositely-disposed series of ratchet-teeth secured thereto and each series being adapted to be engaged by pawls pivoted to an operating-lever. The stem has a socket adapted to receive an extension formed at one end of the head, to which are pivoted oppositely-arranged jaws having means for pressing them normally apart. A yoke surrounds the jaws and has means for forcing them toward each other.

The invention also consists of the further novel constructions and combinations of parts hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings I have shown the preferred form of my invention.

In said drawings, Figure 1 is a perspective view of the wrench. Fig. 2 is a longitudinal section through the head and its jaws, and Fig. 3 is a horizontal section through the ratchet mechanism.

Referring to the figures by numerals of reference, 1 is a stem of any desired length, having a socket 2 at one end provided with a set-screw 3. A handle 4 is located at the other end of the stem and may be utilized for rotating said stem. Secured to the stem at a point between its ends are toothed disks 5 and 6, the teeth of which are oppositely dis-

posed; and these disks are located within a yoke 7, formed at one end of an operating-lever 8. Pivot-pins 9 extend through the yoke near opposite edges and mounted thereon are pawls 10, one of which is provided for each toothed disk. The free ends of these pawls are concave, as shown at 11, and project beyond the yoke so as to form projections which may be conveniently engaged by the finger of the operator. A bow-spring 12 is arranged within the yoke and bears at its end upon the pawls 10 in such a manner as to hold them normally in engagement with their respective disks. When, however, the pawls are swung backward from engagement with the disks, they are held by the spring.

The socket 2 is adapted to receive a projection 13, formed at one end of a head 14, and this projection can be locked in the socket by means of set-screw 3. Pivot-pins 15 extend transversely through opposite portions of the head and form bearings for ears 16, which extend inwardly from oppositely-arranged similar jaws 17. These jaws may be of any desired length, and their free ends have inward extensions 18, which are recessed, as shown at 19, to receive the corners of burs or nuts. The head 14 projects downward between the jaws 17 and has oppositely-extending yokes 20, formed integral therewith and through which the jaws 17 extend. Each of these yokes contains a set-screw 21, which bears on the jaw thereon and by means of which the movement of the jaw can be regulated. Springs 22 are interposed between the head and jaws for the purpose of holding said jaws normally in contact with the set-screws 21.

When it is desired to use this wrench, the jaws 17 are opened by screwing the set-screws 21 therefrom. They are then placed with their recesses 19 upon opposite corners of the bur or nut to be turned and are clamped thereon by means of the set-screws 21. When both of the pawls 10 simultaneously engage their disks 5 and 6, it is impossible to rotate the jaws except by swinging lever 8 in a circle. To utilize the ratchet mechanism, it is necessary to disengage one of the pawls from its disk. Lever 8 can then be swung in one direction, so as to draw its operating-pawl over the teeth thereunder, and when the lever is swung in the other direction said pawl will engage its teeth and cause the rotation of stem 1 and head 13. It will of course be understood one pawl must engage its disk when it



is desired to screw the bur or nut, while the other pawl must only be used when it is desired to unscrew the same. By disengaging both pawls from their disks stem 1 and disks 5 and 6 can be rotated independently of lever 8 by means of handle 4.

It will be seen that this tool is very simple, durable, and inexpensive and can be used for conveniently screwing or unscrewing nuts, &c., which are located at points where they cannot be conveniently reached by wrenches of ordinary constructions. As the head 14 is detachably mounted in socket 2, it can be removed and a larger or smaller head substituted, and, if desired, other tools—such as a screw-driver, bit, &c.—can be secured in the socket.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

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

1. The combination with a stem having a socket at one end, toothed disks upon the stem and a ratchet-lever adapted to rotate the disks in either direction; of a head detachably secured in the socket, oppositely-disposed similar jaws pivoted to the head, alining yokes integral with the head and surrounding the jaws, resilient devices interposed between the head and jaws, and means within the yokes for limiting the movement of the jaws.

2. In a device of the character described the combination with a stem having a socket at one end and a ratchet-lever for rotating the stem, of a head detachably secured within the

socket, oppositely-disposed jaws pivoted to the head and extending along opposite sides thereof, recessed extensions at the free ends of the jaws for engaging a device to be rotated, alining yokes extending in opposite directions from and integral with the head, said yokes surrounding the jaws, means within the yokes for adjusting the jaws, and means interposed between the jaws and head for holding said jaws in contact with the adjusting means.

3. In a tool of the character described the combination with a rotatable stem having a socket in one end, of a handle upon the stem, toothed disks secured to the stem and having their teeth oppositely arranged, a yoke rotatably mounted on the stem and embracing the disks, oppositely-disposed pawls pivoted within the yoke and engaging the respective disks, resilient means for holding the pawls simultaneously or separately in or out of engagement with their disks, an operating-lever extending from the yoke, a head detachably secured within the socket, oppositely-disposed jaws pivoted to the head and extending along opposite sides thereof, recessed extensions at the free ends of the jaws for engaging a device to be rotated, alining yokes extending in opposite directions from and integral with the head, said yokes surrounding the jaws, means within the yokes for adjusting the jaws, and means interposed between the jaws and head for holding said jaws in contact with the adjusting means.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ABRAHAM GAGNON.

Witnesses:

DANIEL J. GEARY,  
JOHN LANEHAN.