

No. 815,084.

PATENTED MAR. 13, 1906.

J. S. FLETCHER.
PAWL AND RATCHET.

APPLICATION FILED APR. 29, 1904. RENEWED JAN. 23, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

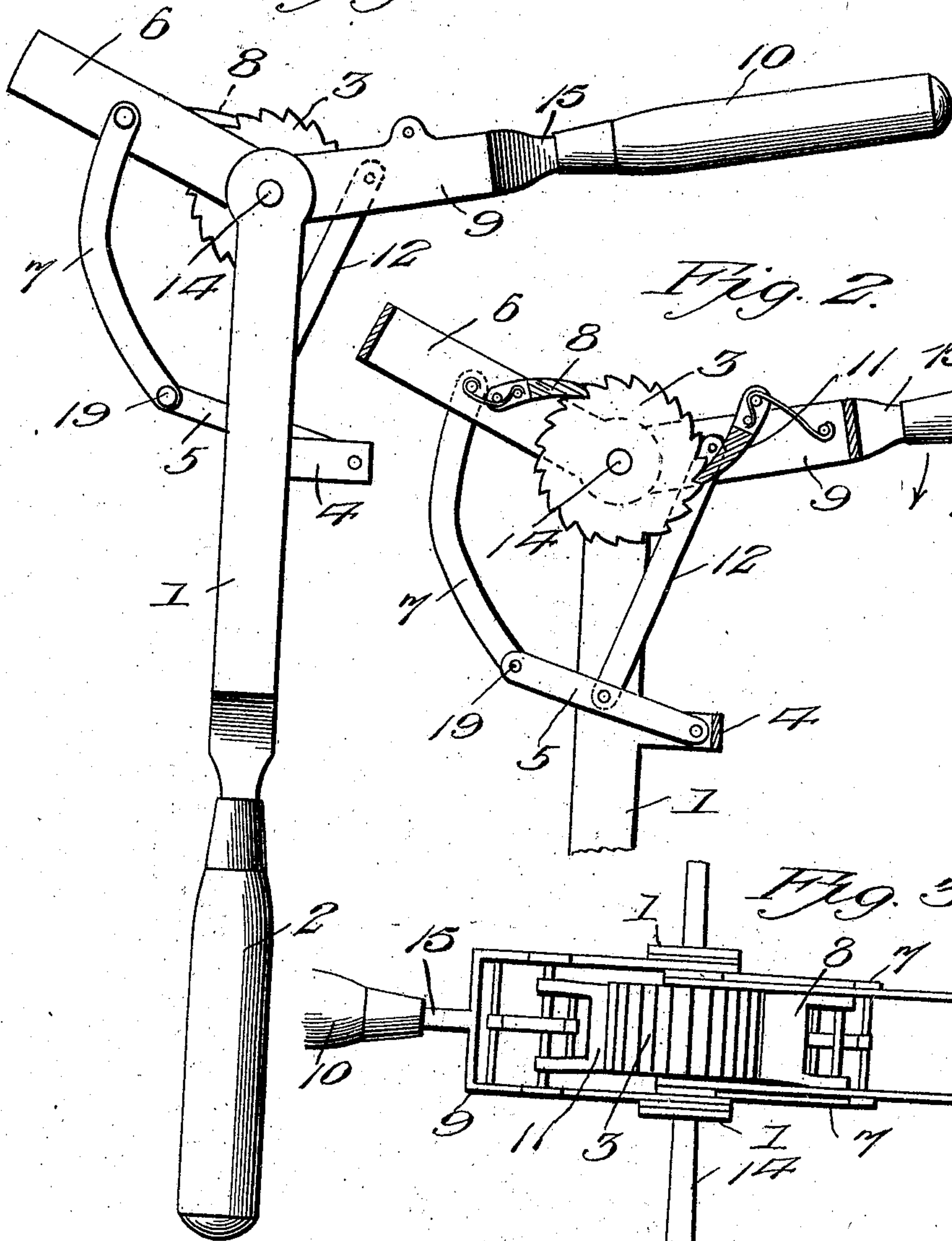


Fig. 2.

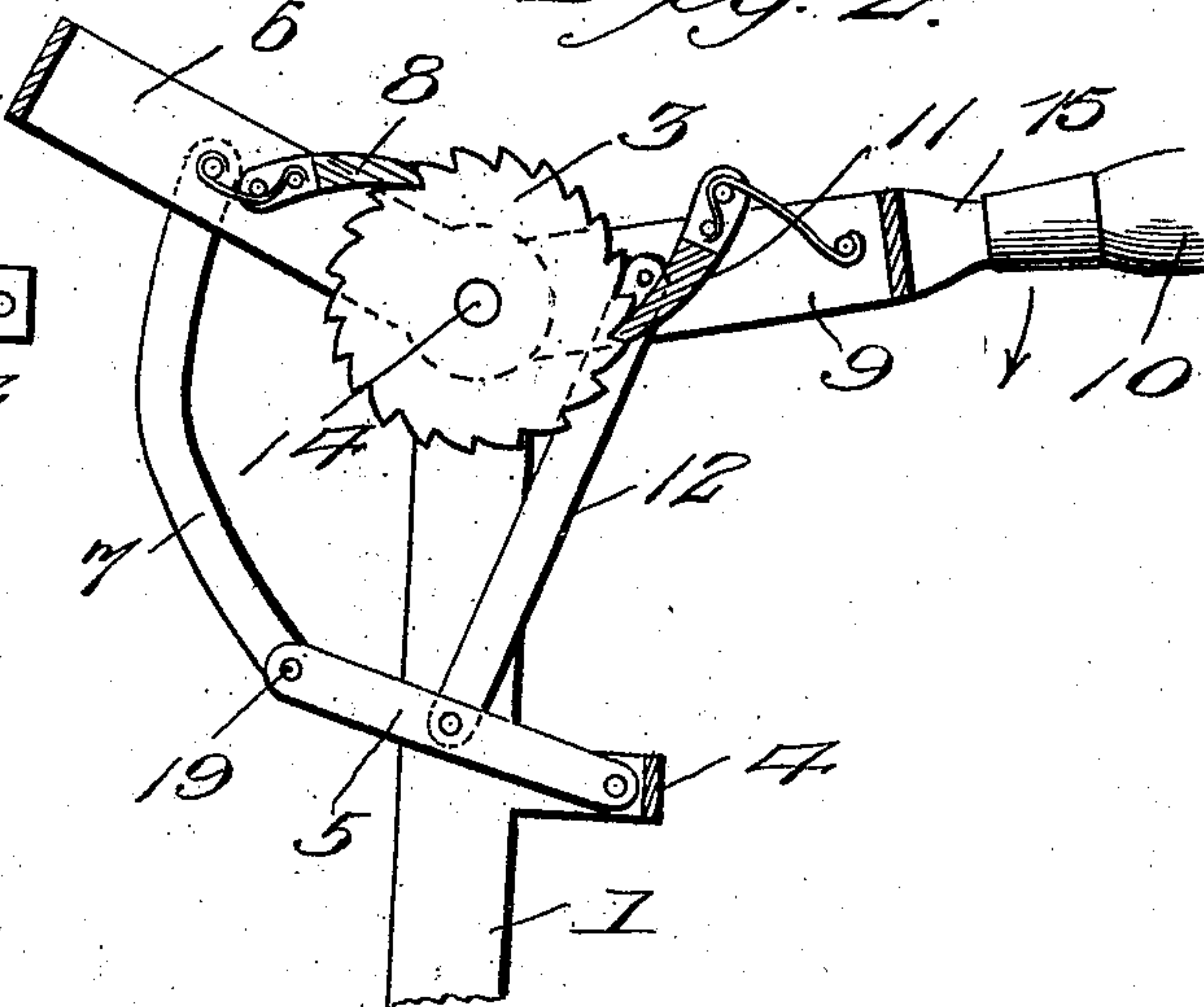
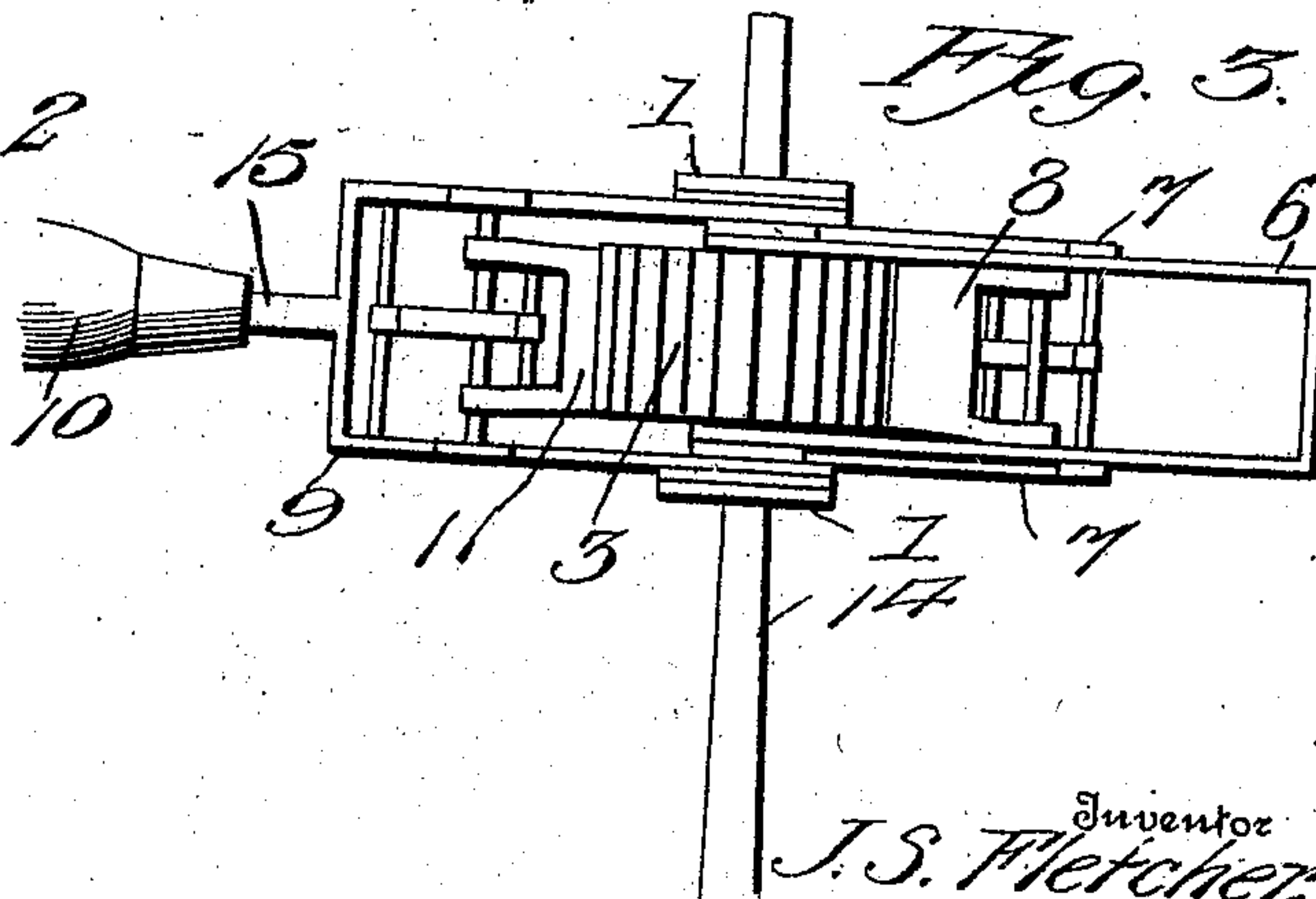


Fig. 3.



Witnesses

Wm. North.
Herbert D. Lawson.

Inventor

J. S. Fletcher,

By

Victor J. Evans

Attorney

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2 SHEETS—SHEET 2.

Fig. 4.

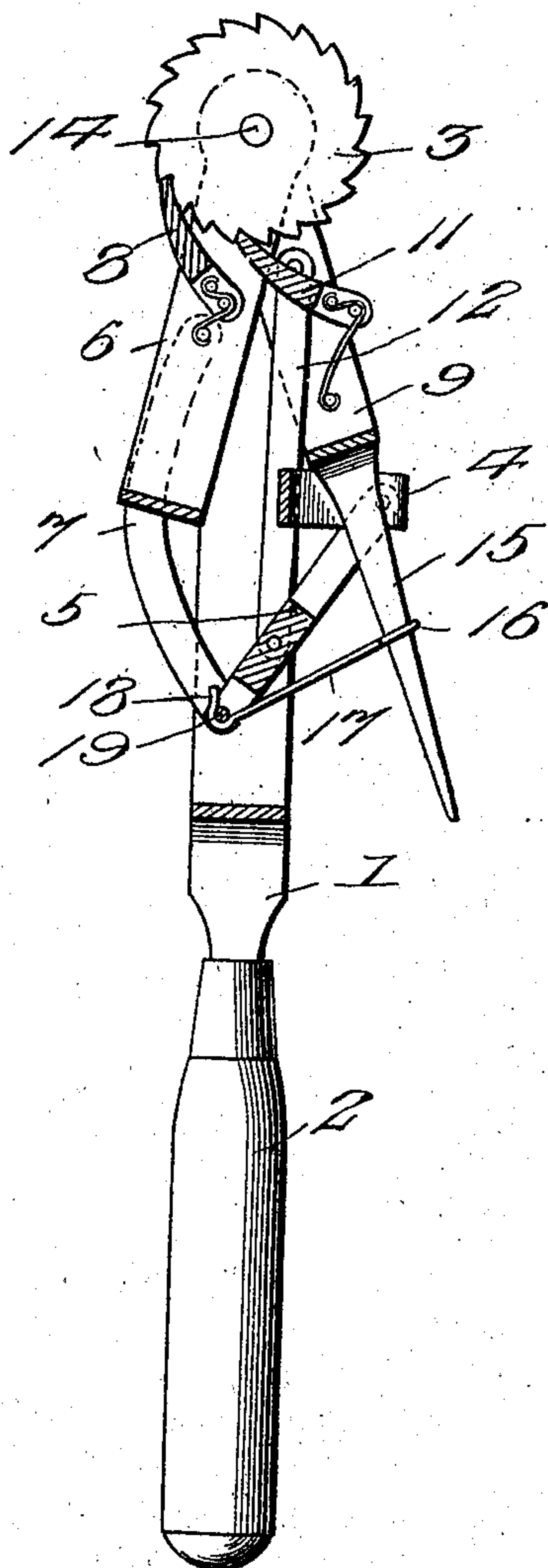
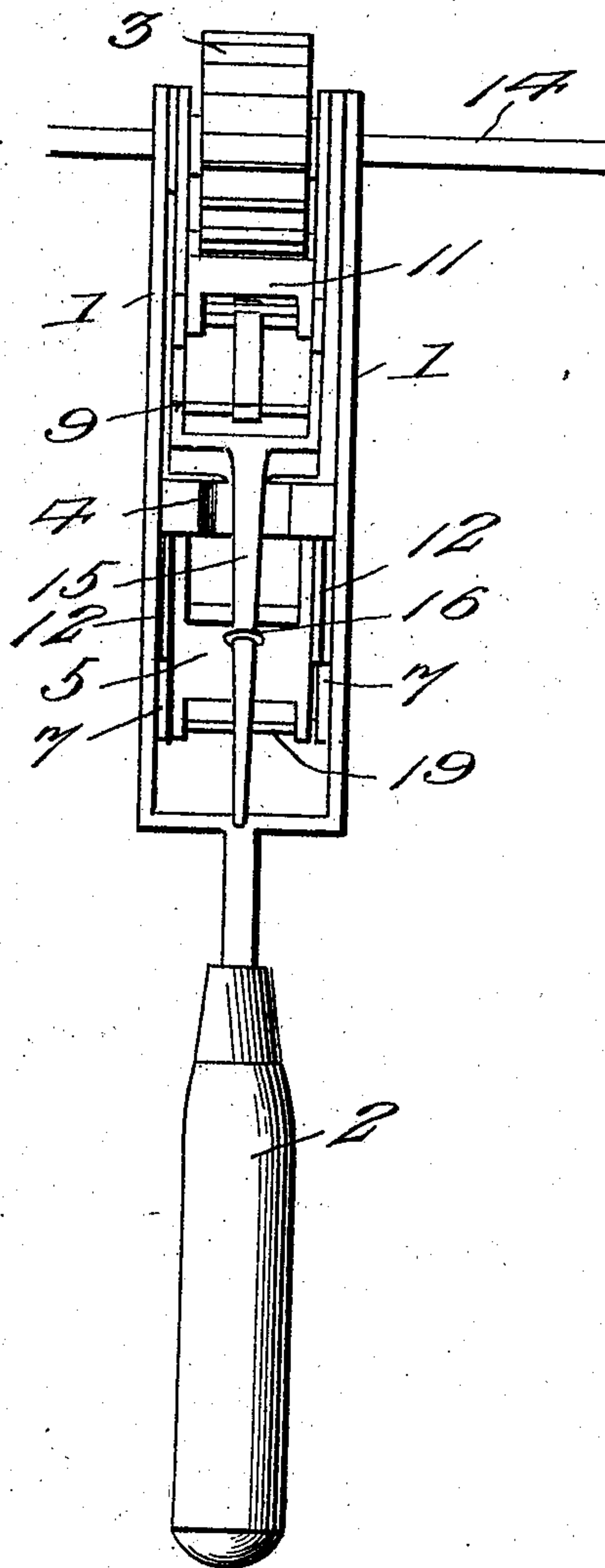


Fig. 5.



Witnesses

Wm. North
Herbert Wilson

J. S. Fletcher, Inventor

By

Victor J. Evans, Attorney

UNITED STATES PATENT OFFICE.

JOHN S. FLETCHER, OF MOUND CITY, KANSAS.

PAWL AND RATCHET.

No. 815,084.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed April 29, 1904. Renewed January 23, 1906. Serial No. 297,448.

To all whom it may concern:

Be it known that I, JOHN S. FLETCHER, a citizen of the United States, residing at Mound City, in the county of Linn and State of Kansas, have invented new and useful Improvements in Pawls and Ratchets, of which the following is a specification.

My invention relates to new and useful improvements in pawl-and-ratchet mechanism for use in connection with drills and other tools to be rotated; and its object is to provide simple and compact mechanism which can be used either as a single or double ratchet.

The invention consists of a handle having a ratchet-wheel journaled therein and operated upon by two pawls which are mounted within separate yokes. Mechanism is provided whereby the pawls are adapted to alternately engage and slip over the teeth of the ratchet when the device is used as a single ratchet, and a locking device is also employed for holding the pawls so as to permit the tool to be used as a single ratchet.

The invention also consists in the further novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a plan view of the mechanism used as a double ratchet. Fig. 2 is a horizontal section through the frame thereof and showing the pawls in section. Fig. 3 is an end elevation of the mechanism, a portion of the handle and drill being removed. Fig. 4 is a horizontal section through the pawl and showing the parts locked to form a single ratchet, and Fig. 5 is a side elevation of the pawl with the parts in the positions shown in Fig. 4.

Referring to the figures by numerals of reference, 1 is a yoke having a handle 2 at one end thereof, while in the other end is revolvably mounted a ratchet-wheel 3. Ears 4 extend from the sides of yoke 1, and to these ears is pivoted a forked end of a plate 5. A yoke 6 is loosely mounted at opposite sides of the wheel 3 and within the yoke 1 and is connected to one end of plate 5 by means of rods 7. A spring-pressed pawl 8 is pivoted within the yoke 6 and normally contacts with the ratchet-wheel 3. A yoke 9 is also arranged within the yoke 1 and extends to opposite sides of the ratchet-wheel 3, and this yoke has a detachable handle 10 at the outer end

thereof. A spring-pressed pawl 11 is also within the yoke 9 and normally bears upon the ratchet-wheel 3, and rods 12 are pivoted at opposite ends to the sides of yoke 9 and to the central portion of the plate 5.

With the mechanism herein described it will be seen that by grasping the handle 2 in one hand and oscillating the handle 10 backward and forward the pawls 8 and 11 will be caused to alternately engage and slip over the teeth of the ratchet-wheel 3. In other words, when the handle 10 is moved in the direction of the arrow in Fig. 2 the pawl 11 will engage the teeth of the ratchet-wheel, while the pawl 8 will be slipped backward thereover, such movement being imparted thereto through the rods 12, plate 5, and rods 7. When the handle 10 is moved in the opposite direction, this operation will be reversed. It will thus be seen that by placing a drill 14 within the ratchet-wheel 3 the same will be caused to rotate practically continuously in one direction by means of this mechanism.

In Figs. 4 and 5 I have shown the mechanism locked to form a single ratchet. This is done by removing the handle 10 from the yoke 9, thereby exposing the stem 15, which extends from the yoke. An eye 16, formed at the end of a rod 17, is then placed upon the stem 15, and a hook 18, formed at the other end of the rod 17, is placed in engagement with a pin 19, which extends through the plate 5 and forms the pivot of the rods 7. With this arrangement the yoke 1 can be oscillated backward and forward and the two pawls are caused to operate in unison.

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 any of 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 the invention, what is claimed as new is—

1. In mechanism of the character described, the combination with a yoke having a ratchet-wheel journaled therein; of oppositely-disposed yokes extending to opposite sides of the ratchet-wheel and pivoted within the first-mentioned yoke, pawls within the oppositely-arranged yokes and normally contacting with the ratchet-wheel, a plate pivoted within the first-mentioned yoke, rods connecting one end of the plate with one of the yokes, and

rods connecting the central portion of said plate with the other yoke.

2. In mechanism of the character described, the combination with a yoke having a ratchet-wheel journaled therein; of oppositely-arranged yokes, pawls therein normally engaging the ratchet-wheel, a plate pivoted to the first-mentioned yoke, and rods connecting the plate with the yokes, whereby the pawls are adapted to be moved alternately into engagement with the ratchet-wheel.

3. In mechanism of the character described, the combination with a yoke having a ratchet-wheel journaled therein; of oppositely-disposed yokes pivoted within the first-mentioned yoke and adapted to be folded thereupon, pawls therein normally engaging the ratchet-wheel, a plate pivoted to the first-mentioned yoke, rods connecting the plate with the yokes, whereby the pawls are adapted to be moved alternately into engagement with the ratchet-wheel, and means for locking the yokes in folded position.

4. In mechanism of the character described, the combination with a yoke having a handle at one end and a ratchet-wheel journaled in the other end; of a second yoke pivoted adjacent the ratchet-wheel and having a detachable handle, a pawl pivoted therein and normally engaging the ratchet-wheel, rods extending from the yoke, a plate pivoted in the first-mentioned yoke and connected between its ends to the rods, another yoke pivoted adjacent the ratchet-wheel, a pawl therein normally engaging the ratchet-wheel, and rods pivoted to said yoke and to one end of the plate.

5. In a mechanism of the character described, a supporting-yoke, a ratchet-wheel journaled therein, operating-yokes connected with the supporting-yoke, pawls carried by the operating-yokes and arranged to oppositely engage the ratchet-wheel, and a lever mechanism connecting the operating-yokes whereby when one of the operating-yokes is reciprocated the other will be reciprocated therewith and cause the pawls to continuously revolve the ratchet-wheel.

6. In a mechanism of the character described, a supporting-yoke, a ratchet-wheel journaled therein, operating-yokes connected with the supporting-yoke, means carried by said operating-yokes to continuously revolve the ratchet-wheel when said yokes are reciprocated, and means whereby to vary the arrangement of said operating-yokes to adapt said means to intermittently revolve the ratchet-wheel.

7. In a mechanism of the character described, a supporting member, a ratchet-

wheel journaled therein, reciprocating operating means engaging the ratchet-wheel on opposite sides, mechanism connecting said respective operating means whereby to continuously revolve the ratchet in the reciprocation of said means, said operating means being variable as to position to effect intermittent driving of the ratchet during reciprocation of the means.

8. In a mechanism of the character described, a supporting member, a ratchet-wheel journaled therein, reciprocating operating means engaging the ratchet-wheel on opposite sides, mechanism connecting said respective operating means whereby to continuously revolve the ratchet in the reciprocation of said means, said operating means being changeable as to position to permit intermittent driving of the ratchet during reciprocation of the means, and means for locking the operating means in its changed position.

9. In a mechanism of the character described, a supporting member, a ratchet-wheel journaled therein, reciprocating operating devices for alternately engaging and imparting continuous motion to the ratchet-wheel, and means adapting said devices to simultaneously engage the ratchet-wheel and impart intermittent motion thereto.

10. In a mechanism of the character described, a rotary member, operating means to alternately engage and continuously rotate said rotary member, and means to vary the action of said operating means to simultaneously engage and effect an intermittent rotation of said rotary member.

11. In a mechanism of the character described, a ratchet-wheel, reciprocating operating devices provided with pawls to engage said ratchet-wheel, means for connecting and disposing said devices to adapt the pawls to alternately engage and continuously rotate the wheel, said means being adapted to permit said devices to fold or approach and cause said pawls to simultaneously engage and intermittently rotate the ratchet-wheel, and means for retaining said devices in folded position.

12. A ratchet-wheel, two pawls, and means to cause the pawls to alternately engage and continuously rotate the ratchet-wheels, or to simultaneously engage and intermittently rotate said ratchet-wheel.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN S. FLETCHER.

Witnesses:

W. C. FLETCHER,
A. J. C. LOWE.