

No. 625,592.

Patented May 23, 1899.

F. F. NEFF.

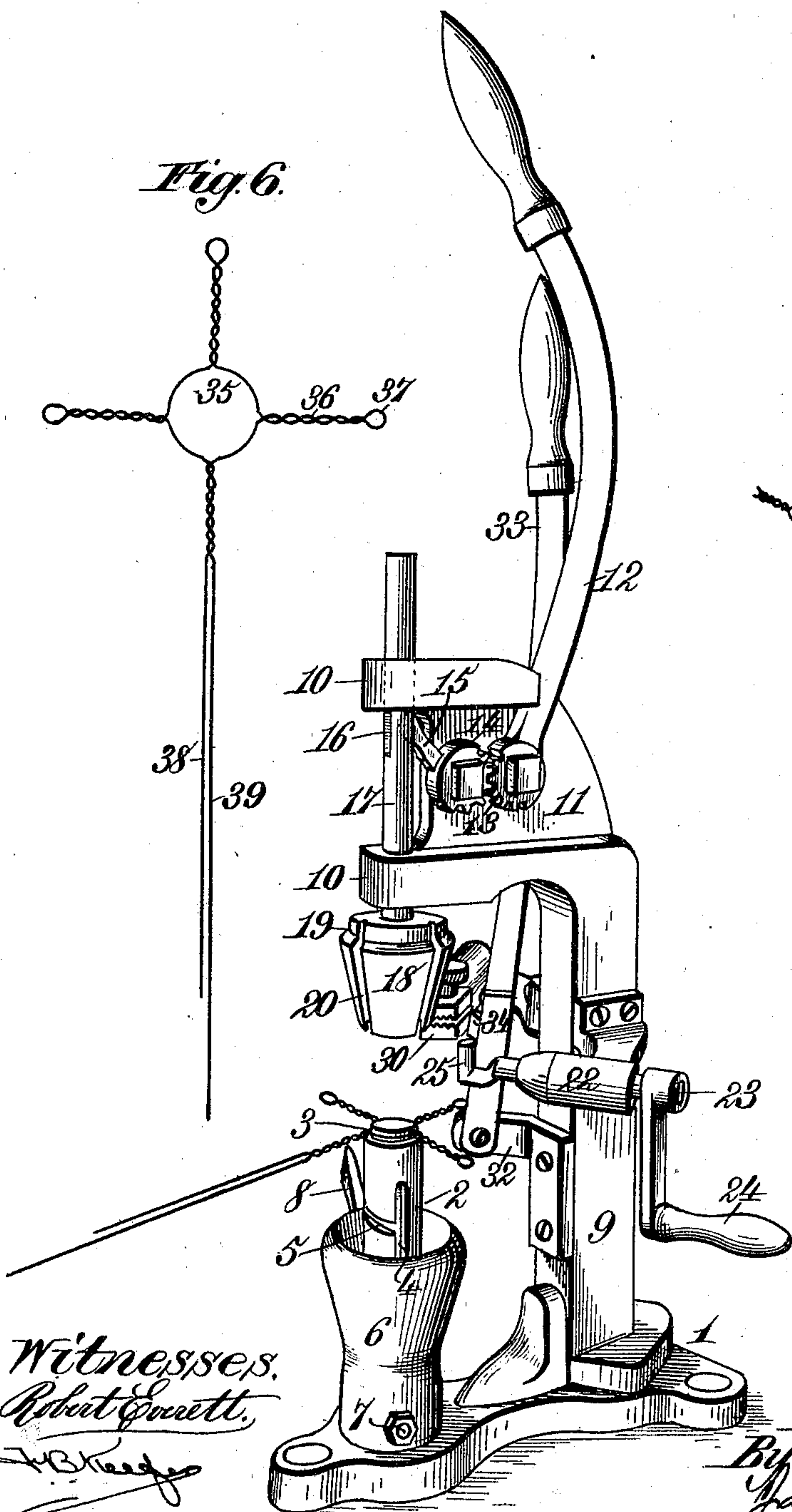
MACHINE FOR MAKING WIRE CAPS OR CORK RETAINERS.

(Application filed Sept. 17, 1898.)

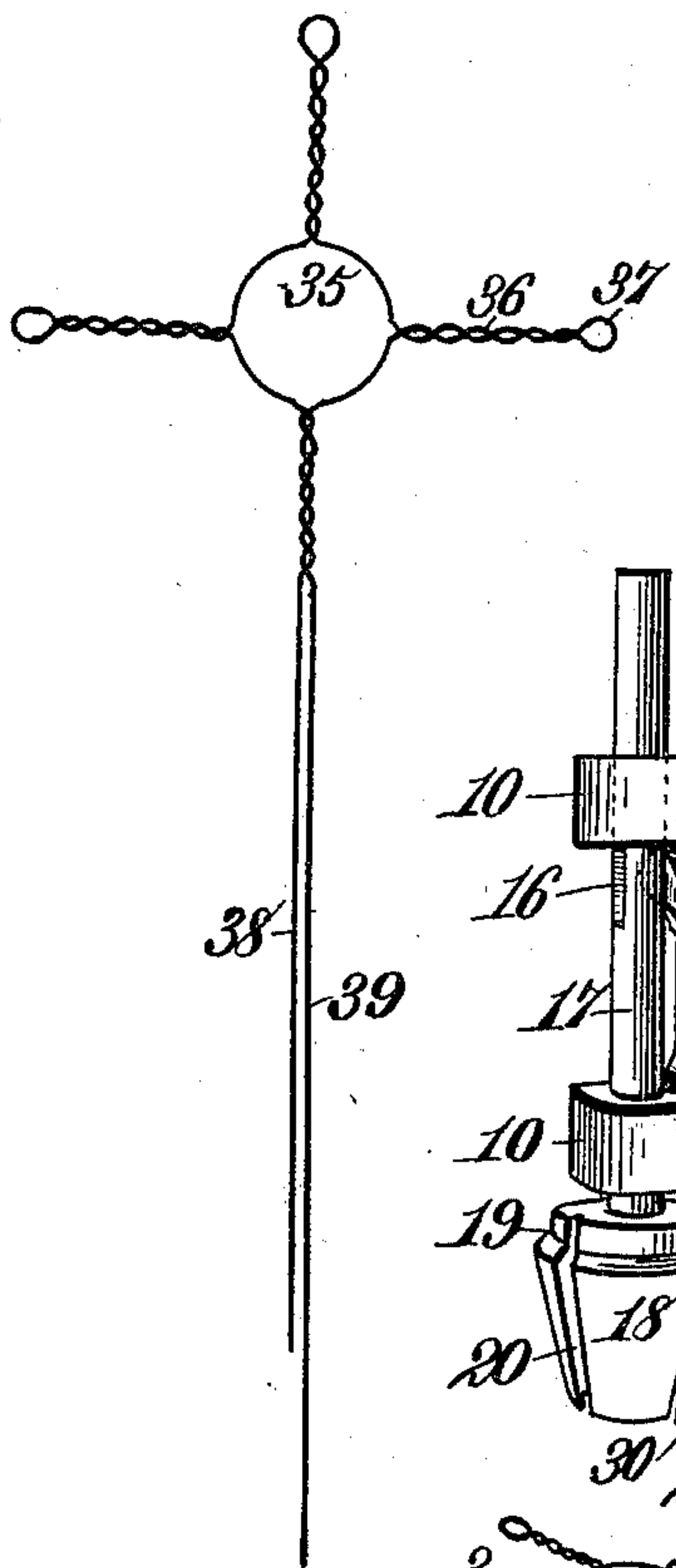
(No Model.)

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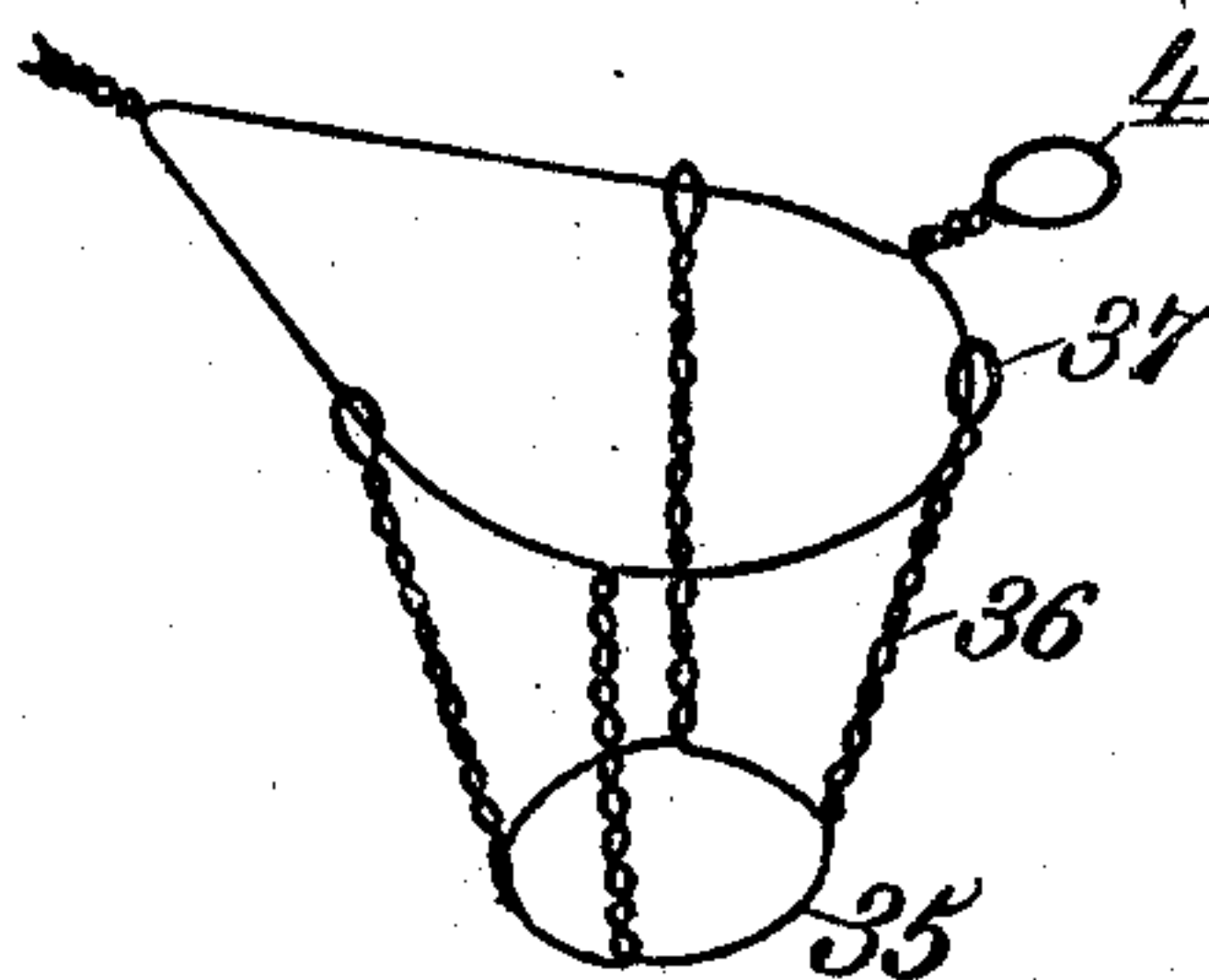
*Fig. 1.*



*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



Witnesses.  
*Robert Emmett.*  
*J. B. Keefe*

Inventor.  
*Frank F. Neff.*  
By *James L. Norris.*  
*Atty.*

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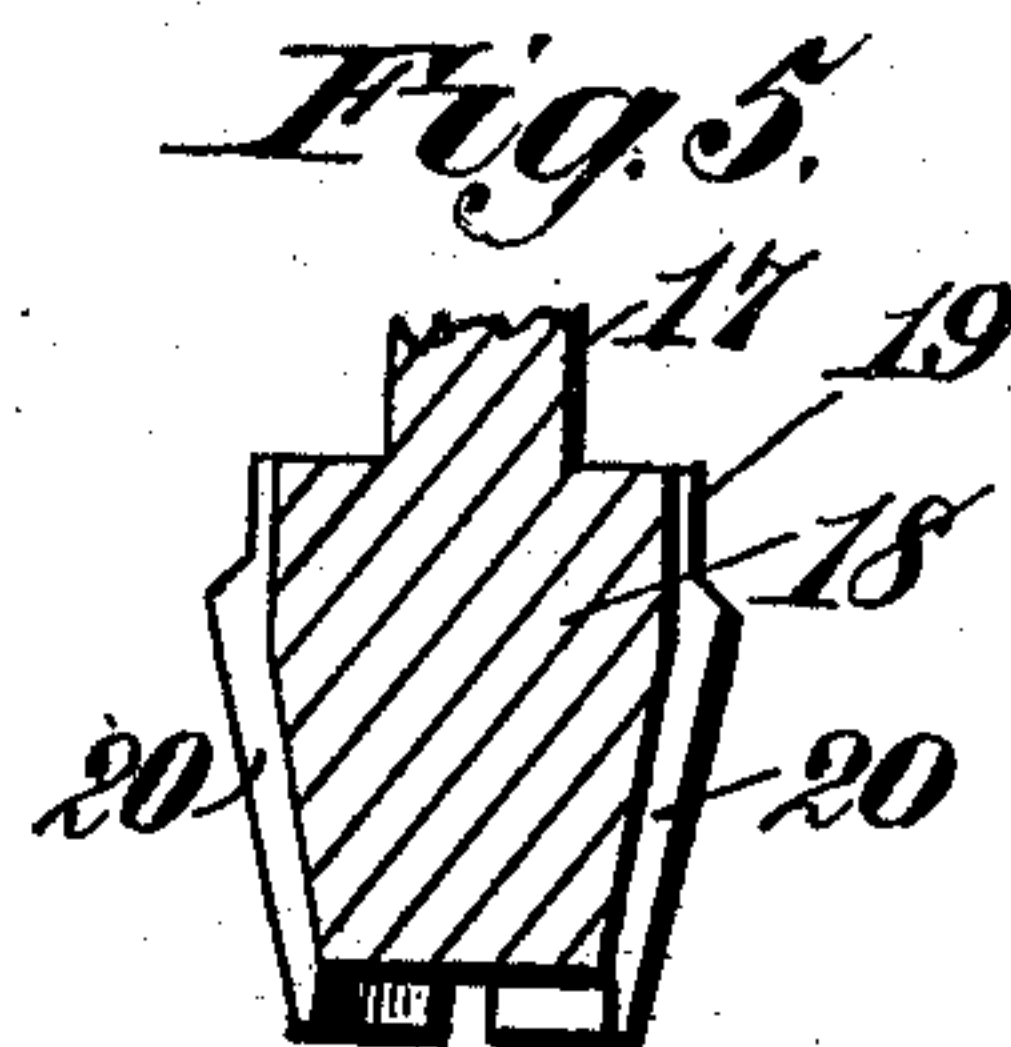
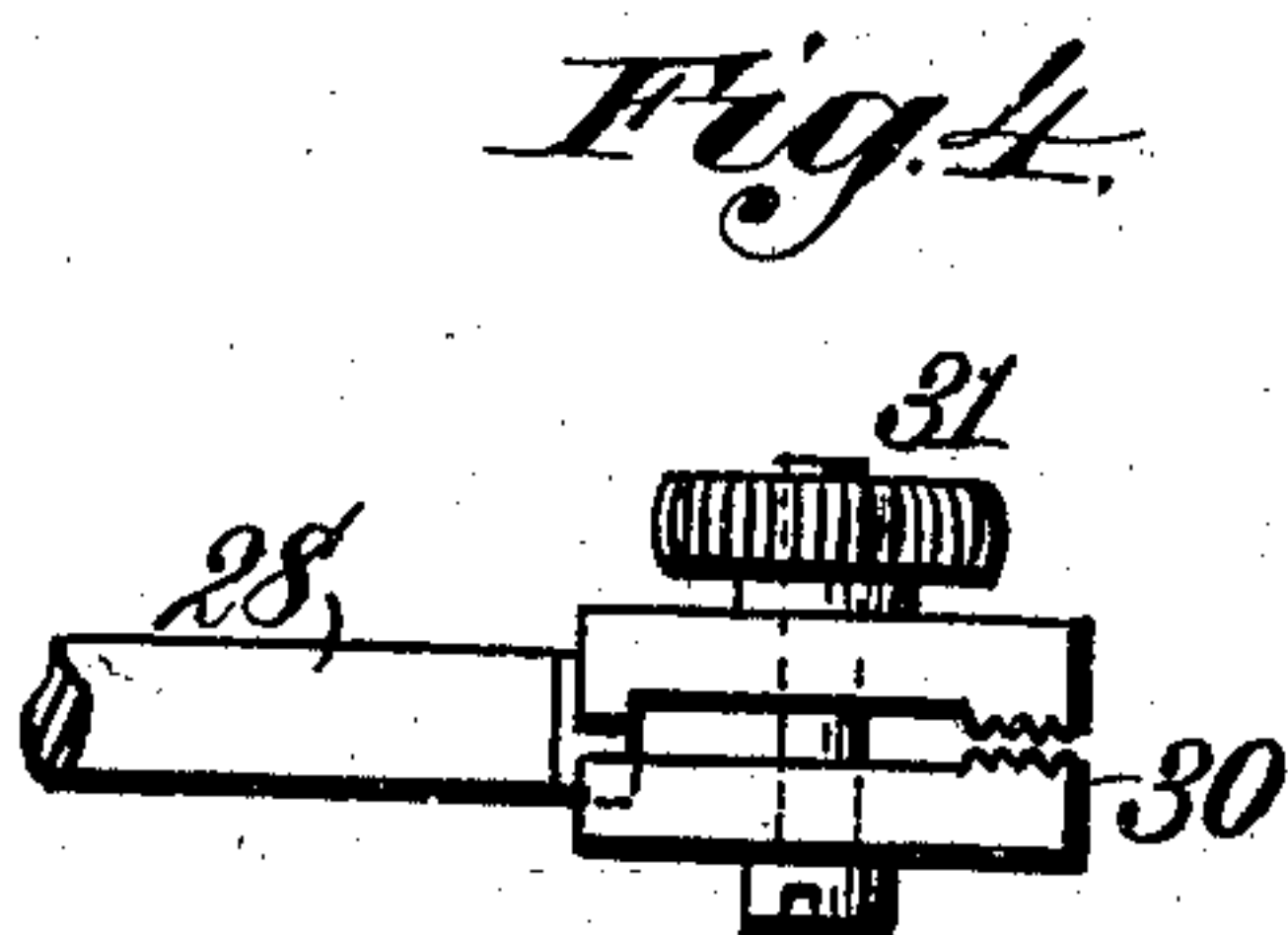
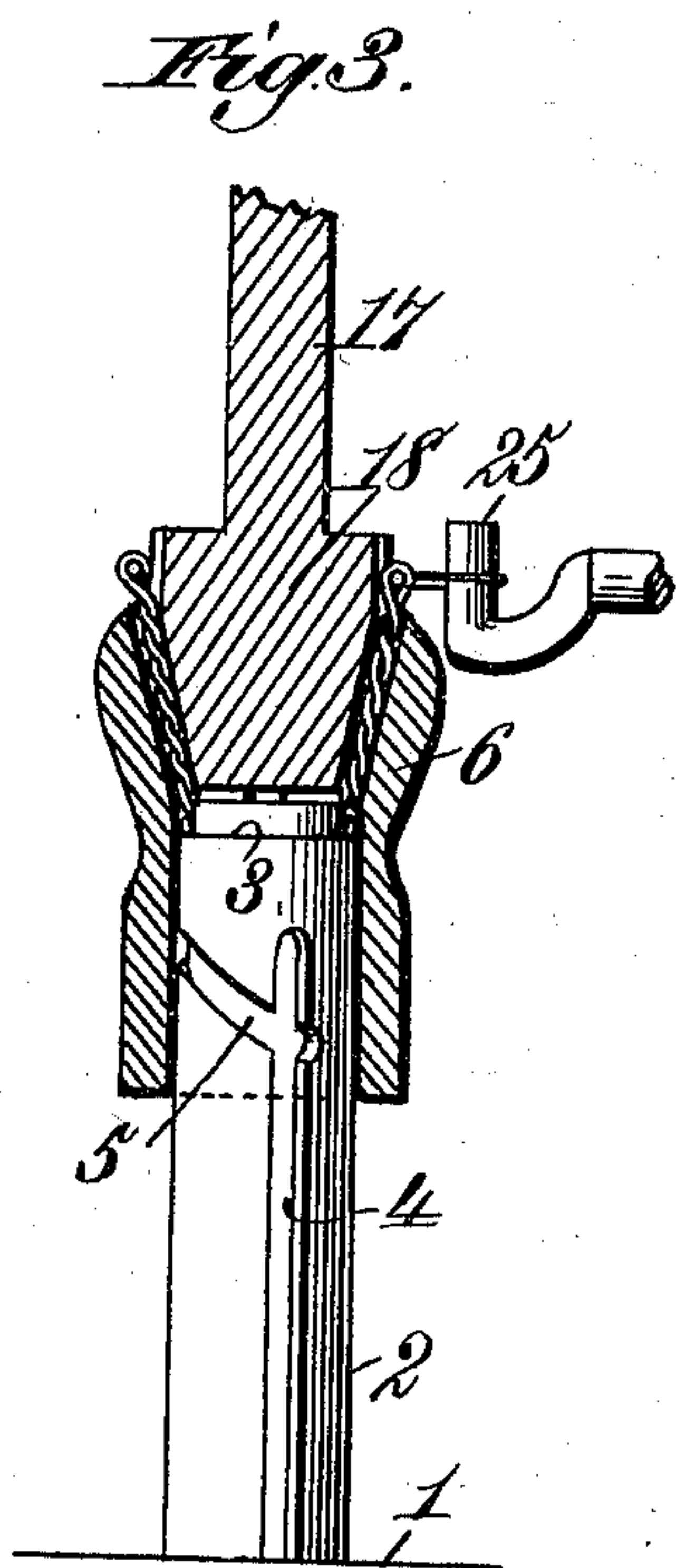
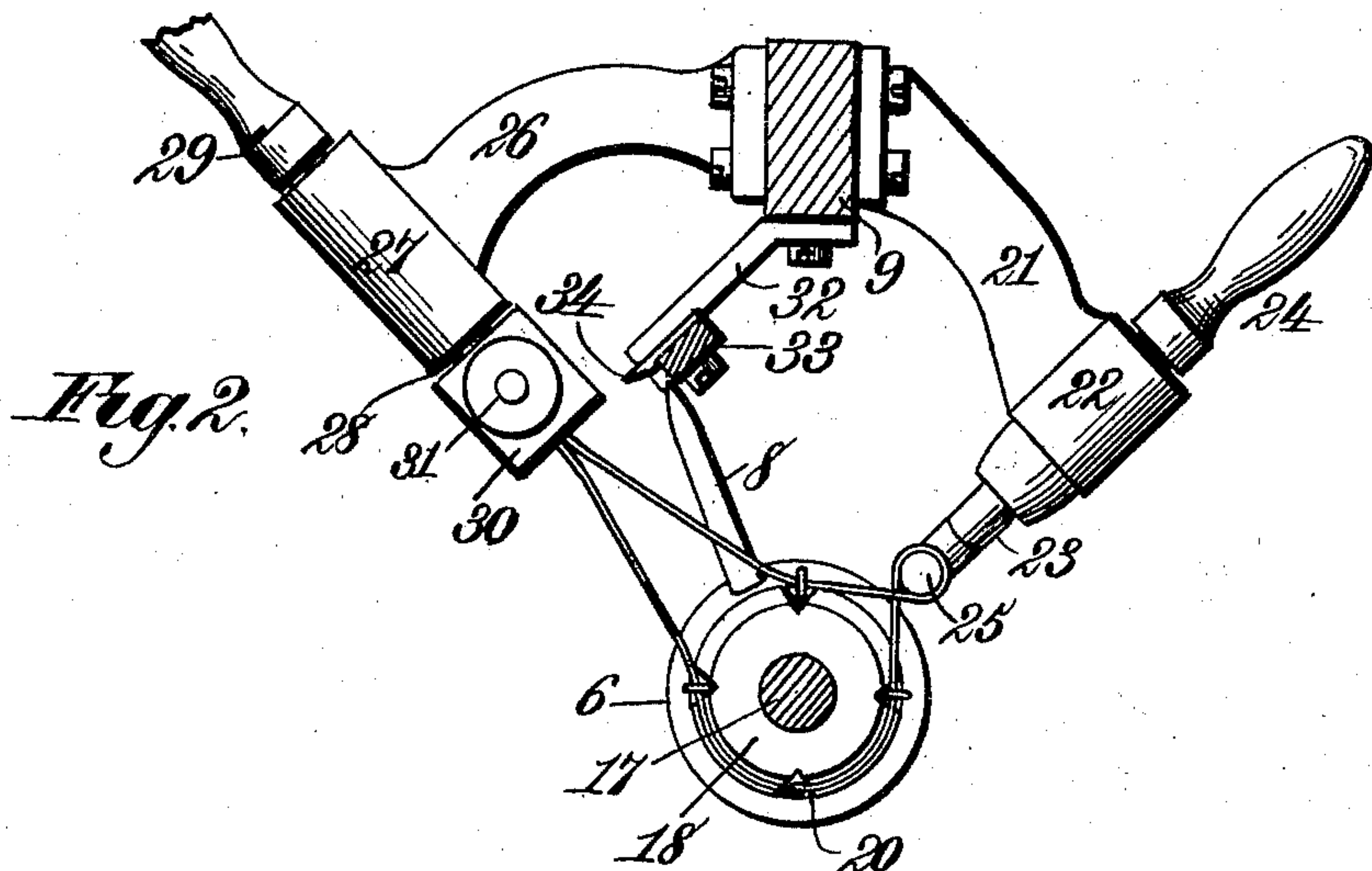
F. F. NEFF.

MACHINE FOR MAKING WIRE CAPS OR CORK RETAINERS.

(Application filed Sept. 17, 1898.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses.  
*Robert G. Watt.*  
*A. B. Keifer*

Inventor.  
*Frank F. Neff.*  
By *James L. Norris.*  
*Atty.*



# UNITED STATES PATENT OFFICE.

FRANK F. NEFF, OF PRATTSBURG, NEW YORK.

## MACHINE FOR MAKING WIRE CAPS OR CORK-RETAINERS.

SPECIFICATION forming part of Letters Patent No. 625,592, dated May 23, 1899.

Application filed September 17, 1898. Serial No. 691,212. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK F. NEFF, a citizen of the United States, residing at Prattsburg, in the county of Steuben and State of New York, have invented new and useful Improvements in Machines for Making or Shaping Wire Caps or Cork-Retainers, of which the following is a specification.

This invention relates to machines for making or shaping wire caps or cork-retainers, and has for its special object to provide an improved, simple, and easily-operated machine for shaping cork-retaining caps from twisted wire frames, that comprise each a circular body portion or ring having twisted radial arms and which may be prepared or formed in a machine of the character described in a separate application of even date herewith.

The wire caps, hoods, or retainers are intended for securing corks in bottles filled with effervescent liquids.

My invention consists in features of construction and novel combinations of parts in wire-cap-shaping machines, as hereinafter described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a perspective of my machine for shaping wire caps or cork-retainers. Fig. 2 is a sectional plan of the same. Fig. 3 is an enlarged detail view of anvil, vertically-movable shaper-head, rotary hook, and anvil-sleeve in part sectional elevation. Fig. 4 is a detail view of rotary clamping-jaws. Fig. 5 is a vertical section of the shaper-head. Fig. 6 is a view of a twisted wire frame from which a cork-retaining cap is to be made. Fig. 7 is a view of the wire cap that is made or shaped in this machine. Fig. 8 is a view of a notched cap to be placed over the cork before the wire cap is attached to the neck of the bottle.

The reference-numeral 1 designates a base or pedestal that is adapted to be screwed or bolted to a work-bench. On one end of this base there is fixed a vertical and cylindrical anvil-block 2, having at its top an annular shoulder 3, upon and around which will fit the circular or ring portion of a previously-prepared wire frame from which a cork-retaining wire cap is to be formed. In one side of the cylindrical anvil-block 2 there is a vertical

keyway 4, that leads at or near its top into a lateral upward-inclined keyway 5, as shown. The anvil-block 2 is surrounded by a vertically-movable and partially-rotatable sleeve 6, having a flared upper end. In the lower part of this sleeve 6 there is a key 7, engaging the keyway 4 and adapted to enter the lateral inclined keyway 5 and support the sleeve at the top of the anvil when lifted and partly rotated. A handle 8 on the sleeve 6 will serve for manipulating it as required.

There is fixed to or cast on the base 1 a standard 9, having at its top two forward-projecting arms 10, connected by a plate or web 11, cast integral therewith. To this plate 11 there is pivoted one end of a hand-lever 12, having on its pivotal end a segment-gear 13, engaged with the segment-gear 14 of a short lever or dog 15, that is also pivoted to said plate. The lever or dog 15 is engaged in a slot 16, formed in a vertically-movable shaft 17, that has a vertical longitudinal movement in guideways formed in the standard-arms 10 above and in line with the anvil. The lower end of this vertical longitudinally-movable shaft 17 carries a conoidal shaper-head 18, having its smaller end downward and cupped or flanged to fit onto and around the annular reduced top or shouldered portion 3 of the fixed anvil-block. It will be observed that the conoidal exterior of the shaper-head 18 and the inner face of the flared upper end of the anvil-sleeve 6 are made to conform with each other, so that when the shaper-head is lowered onto the anvil-block 2 and the said sleeve 6 is raised and partially rotated its flared upper end will fit around the conoidal portion of the shaper-head. The upper and larger end of the shaper-head 18 is slightly reduced in diameter to form an annular shoulder 19 at the upward limit of movement provided for the flared upper end of the anvil-sleeve. The periphery of the shaper-head 18 is provided at suitable intervals with vertical grooves 20 to receive the twisted radial arms of a wire frame clamped between the shaper-head and the anvil-block, the lifting of the anvil-sleeve 6 being adapted to bend the radial arms of said wire frame upward into the grooves 20, as in the first step of forming a wire cap.

The standard 9 is provided with a bracket-



arm 21, having on its end a bearing 22 for a rotary shaft 23, that is provided at one end with a crank 24 and which carries on its other end a hook 25, adjacent to the annular shoulder 19 of the lowered shaper-head. On the opposite side of the standard 9 there is a bracket-arm 26, having a bearing 27 for a rotary shaft 28, one end of which is provided with a crank 29, while the other end carries a pair of clamping-jaws 30 and a set-screw 31 for tightening said jaws onto the wire ends of a cap formed by the machine. Another bracket 32 on the standard 9 has pivoted thereto a hand-lever 33, carrying a knife 34 to cut off the wire ends of the finished cap while said ends are held by the clamping-jaws.

In the operation of the machine to form a wire cap for retaining the cork of a bottle the sleeve 6 is first lowered on the anvil-block 2 and the hand-lever 12 is thrown forward to lift the shaper-head 18 away from the anvil. The ring or circular body 35 of a previously-prepared wire frame is then placed on the annular shoulder 3 of the anvil with the twisted radial frame-arms 36 in horizontal position. Several of these twisted arms have loops or eyes 37 formed in their ends. One of the twisted arms 36 has no loop, but terminates in untwisted wire lengths 38 and 39 of unequal length. The wire frame is placed on the anvil with these untwisted wire lengths 38 and 39 projecting forward, and the hand-lever 12 is then thrown backward, so as to lower the shaper-head 18 onto the ring 35 of the wire frame and secure it firmly, with the radial frame-arms 36 in line with the several grooves 20 of the shaper-head. Now while the shaper-head is held down onto the anvil, thereby securely clamping the wire frame, the anvil-sleeve 6 should be lifted on the anvil-block, so as to bend the radial twisted arms 36 upward and into the grooves 20 of the shaper-head, after which the sleeve 6 is partly rotated to carry its key 7 into the lateral keyway 5, and thus support said sleeve in an elevated position on the anvil-block. The shorter projecting length of wire 38 is now to be threaded by hand through the loop 37 of one of the wire-frame arms and is carried thence to the clamping-jaws 30, while the longer wire length 39 is threaded through the loops 37 of the other wire-frame arms and is placed around the rotary hook 25, and both these lengths of wire are then clamped between the jaws 30 by a proper manipulation of the clamping set-screw. The hook 25 and jaws 30 are next rotated by means of their respective cranks, so as to form a loop 40 in the wire length 39 by action of said hook and to twist together the ends of both wire lengths 38 39 by action of the rotary jaws 30, in which they are meantime securely held. The hand-lever 33 is now drawn forward, thereby causing the knife 34 to sever the wire lengths 38 and 39 just beyond where they are twisted together or close to the clamping-jaws. The sleeve 6 is now rotated backward and lowered

on the anvil-block and the hand-lever 12 is brought forward to lift the shaper-head 18 and release the finished wire cap, the disengagement of which from the hook 25 can be then easily effected.

The finished wire cap is generally used in conjunction with a peripherally-notched metal cap 41, that is first placed over the cork after its insertion into the neck of a bottle. The wire cap is then placed in position, with its ring 35 uppermost and with the twisted arms 36 extended downward. By means of a pair of pincers or other suitable instrument the wire portions 38 and 39 are now further twisted together around the neck of the bottle closely under the rim, thereby holding the cork securely until its removal is required, and this can be accomplished by first untwisting the loop 40, thus permitting disengagement of the outer wire cap and under metal cap, so that the cork can be withdrawn.

What I claim as my invention is—

1. In machines for shaping wire caps, the combination of a cylindrical anvil, a vertically-movable shaper-head adapted to fit onto said anvil and provided with an annular shoulder and a plurality of vertical grooves, a vertically-movable anvil-sleeve adapted to be held in an elevated position with its upper end around the shaper-head, a rotary hook, and rotary clamping-jaws, substantially as described.

2. In machines for shaping wire caps, the combination of a cylindrical anvil having an annular shoulder at its top, a vertically-movable shaper-head adapted to fit onto said anvil-shoulder and provided with a plurality of vertical grooves and with an upper shouldered end, a vertically-movable anvil-sleeve adapted to be held in an elevated position with its upper end around the shaper-head, a rotary hook and rotary clamping-jaws, substantially as described.

3. In machines for shaping wire caps, the combination of a cylindrical anvil having keyways in its side, a vertically-movable shaper-head adapted to fit onto the anvil and provided with a plurality of vertical grooves and an annular shoulder at the upper ends of said grooves, a vertically-movable anvil-sleeve adapted to be partly rotated on the upper portion of the anvil and provided with a key engaging the anvil-keyways to hold the sleeve in an elevated position with its upper end around the shaper-head, a rotary hook, and rotary clamping-jaws, substantially as described.

4. In machines for shaping wire caps, the combination of a cylindrical anvil, a conoidal vertically-movable shaper-head provided with a plurality of vertical grooves and an upper annular shoulder, a vertically-movable anvil-sleeve adapted to be held in an elevated position and having an upper flared end to fit around the conoidal shaper-head, a rotary hook, and rotary clamping-jaws, substantially as described.



5. In machines for shaping wire caps, the combination of a cylindrical anvil, a vertically-movable shaper-head provided with a plurality of vertical grooves and an upper annular shoulder, a vertically-movable shaft carrying said shaper and provided with a slot, a standard having arms provided with bearings for said shaft, a pivotal dog engaged in the slot of said shaft, a hand-lever geared with said dog, a vertically-movable anvil-sleeve, a rotary hook, rotary clamping-jaws,

and a lever provided with a knife arranged to operate adjacent to said clamping-jaws, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK F. NEFF.

Witnesses:

RICHARD E. DEIGHTON,  
H. E. RANDALL.