

(No Model.)

2 Sheets—Sheet 1.

J. F. EMMERT.
VISE.

No. 471,169.

Patented Mar. 22, 1892.

Fig. 1.

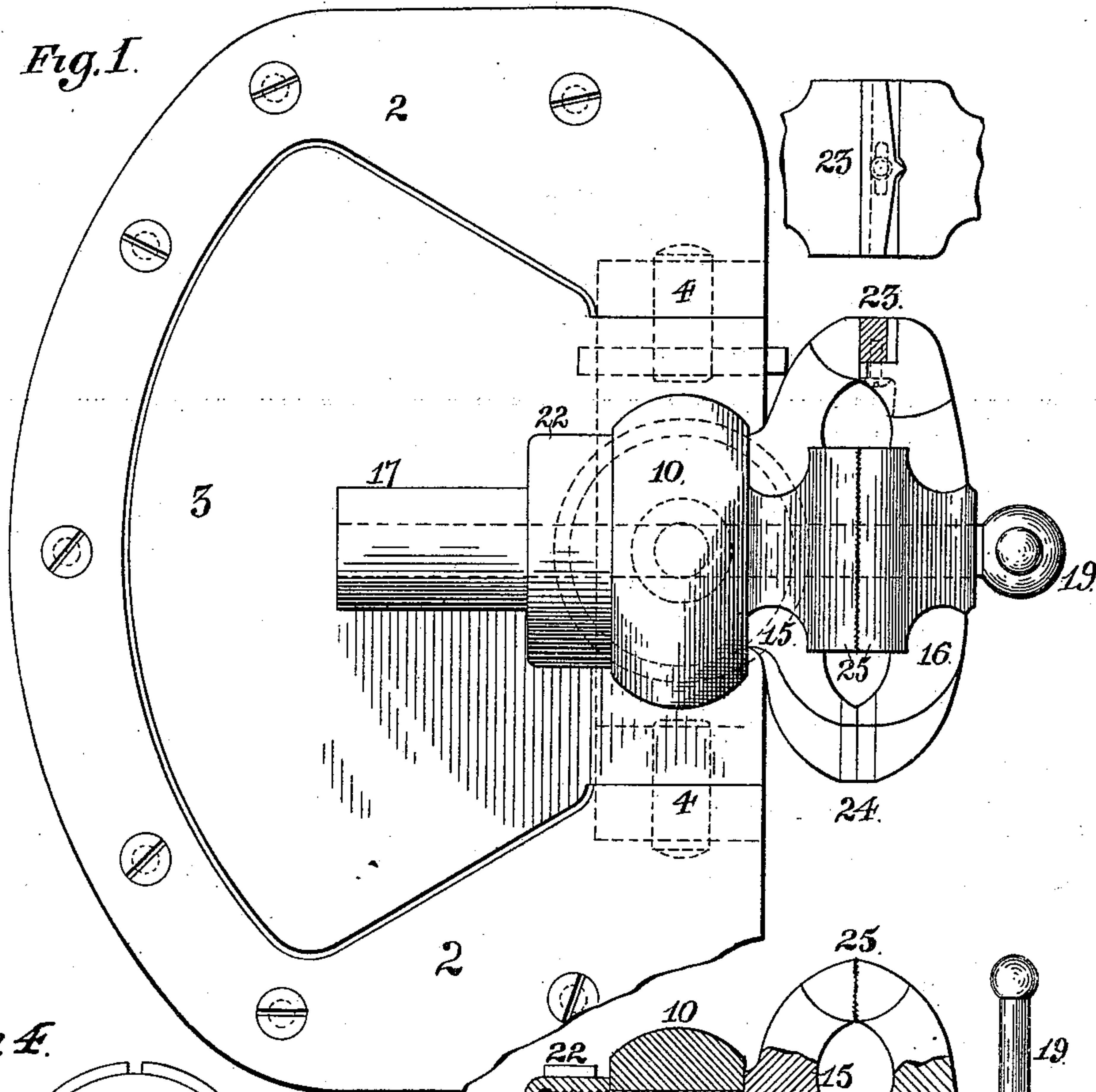
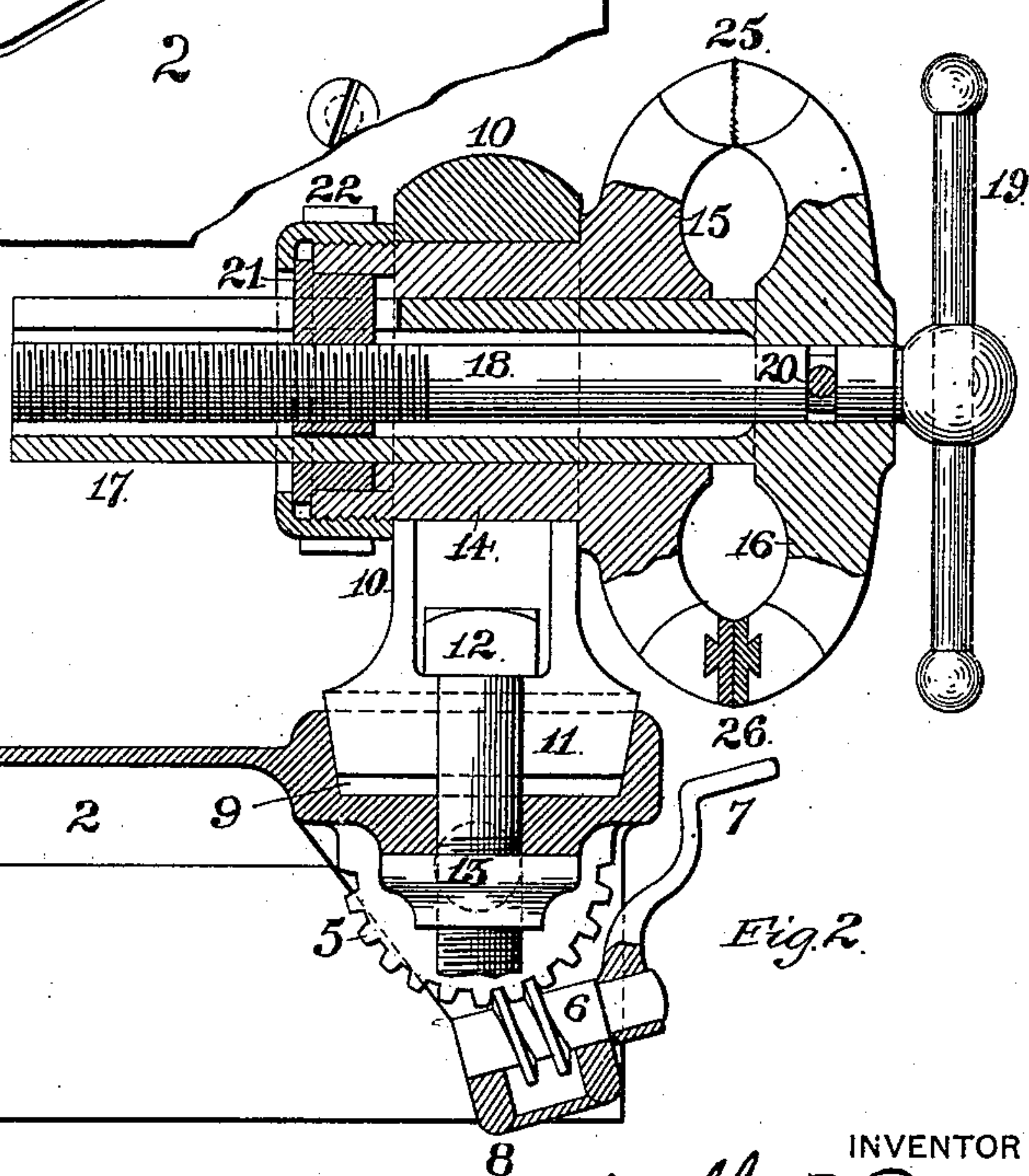
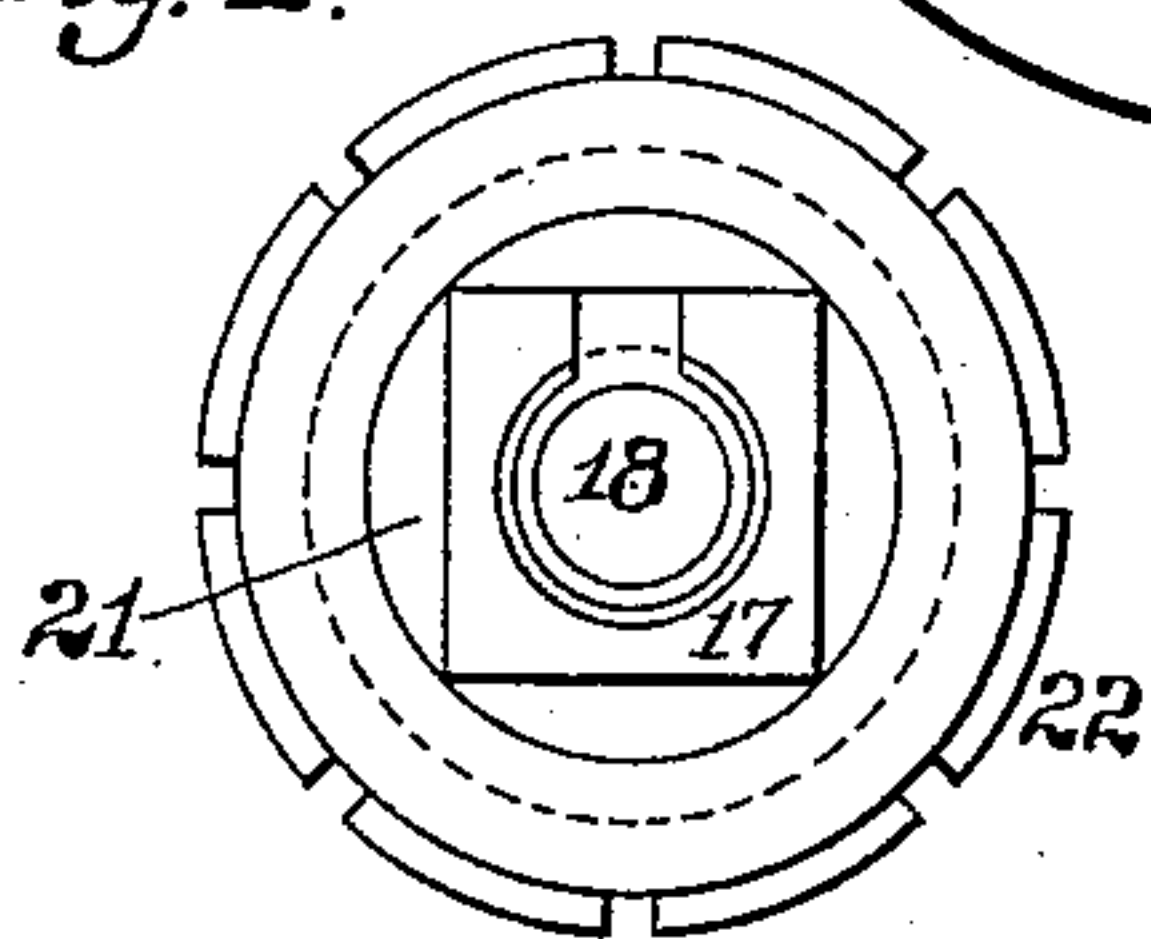


Fig. 4.



WITNESSES

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(No Model.)

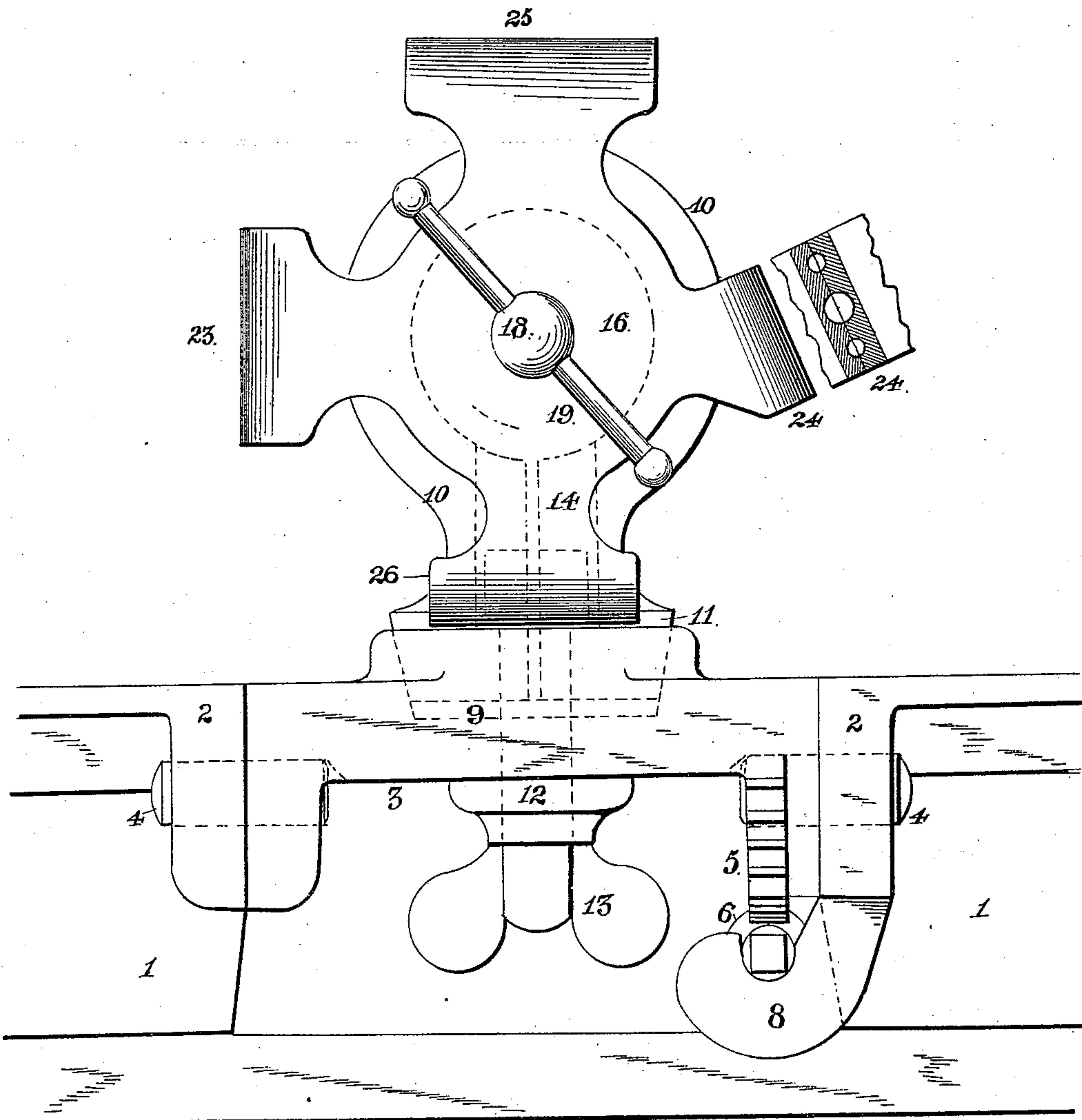
2 Sheets—Sheet 2.

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Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOSEPH F. EMMERT, OF WAYNESBOROUGH, PENNSYLVANIA.

WISE.

SPECIFICATION forming part of Letters Patent No. 471,169, dated March 22, 1892.

Application filed June 10, 1891. Serial No. 395,796. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH F. EMMERT, a citizen of the United States, residing at Waynesborough, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Vises; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to vises.

The object of my improvements is to provide a vise designed more particularly for skilled workmen, such as jewelers, gold and silver smiths, &c.; but its features may be adapted to other vises.

To carry out these purposes my invention consists in the following construction and combination of parts, which will first be fully set forth in detail, and the points of novelty then set forth in the claims.

Figure 1 is a top plan view of a vise embodying my invention. Fig. 2 is a central vertical sectional view thereof. Fig. 3 is an end or front elevation of my invention, and Fig. 4 is a detail view thereof.

In the drawings, 1 represents a table or support to which the vise is affixed.

2 is a metal frame rigidly secured to the support by bolts upon which the operating parts are carried.

3 is a metal plate, which carries the vise, and 4 are trunnions or pivots upon the plate 3, which take into flanged bearings depending from the plate 2. The plate 3 oscillates upon these bearings, so that the vise may assume a horizontal or vertical position or any intermediate one, either inward or outward.

5 is a segmental or mutilated gear formed on or cast with the plate 3 on the under side, and 6 is a worm having a crank-handle 7 hung in bearings 8, cast with the plate 2. By rotating this crank-handle 7 an oscillating or swinging movement is given to the plate 3 and the vise which is secured thereto.

9 is a conical seat formed upon the upper side of plate 3 and adapted to receive a post 10, having a corresponding conical seat 11.

12 is a bolt projecting through the conical seat 11 centrally thereof and down through an aperture in the plate 3, where it is provided with a set-screw 13 at the bottom, by means of which the post 10 and the vise carried thereby may be adjustably set at various angles upon the plate. The post 10 is longitudinally split through its conical seat and its upper end is provided with a large horizontal aperture within which takes the sleeve 14 of the inner vise-jaw or series of vise-jaws 15.

16 is the outer jaw or jaws of the vise, formed with the sleeve 17, which passes through the sleeve 14.

18 is the screw shank or bolt having the handle 19, usual in vises of this type, for adjusting the jaws of the vise.

20 is a pin in the jaw 16, which secures the screw-shank 18 against endwise movement in the jaw 16, but allows free rotary movement thereto.

21 is the flanged steel nut into which the screw-shank 18 takes, and 22 is the binding or clamp nut, which screws upon the sleeve 14 and firmly holds the screw-nut 21 in place against rotation. The exterior of sleeve 17 and the interior of sleeve 14 are square or angular to prevent any oscillation of the one in the other. The post 10, being split at its lower end, has a natural spring or tendency to open, so as to allow the vise-jaws 15 and 16 to rotate therein, which they may freely do, they being tightened or set by screwing up the set-screw 13 and thereby drawing the conical seat 11 into the seat 9 and clamping the eye or aperture of the post tightly upon the sleeve 14.

23, 24, 25, and 26 represent four jaw-faces of the vise.

23 shows a pivoted vibrating clamp used in working wedge-shaped or irregular pieces of metal.

24 shows a jaw specially designed for pipe or tubular or rod work.

25 are jaws of the ordinary type.

26 exhibit jaws faced with copper or other soft material for holding finished work. It will be understood that other special jaw-faces may be applied to this vise, those described being exhibited to show the capabilities of my invention. The jaw-faces may be

removable and made of composition metal when desired.

I have shown my universally-adjustable vise with four sets of double jaws; but I may
5 cast a greater or less number upon the jaw-heads.

In my invention it will be seen that the work can be brought to the best position to suit the light, thereby giving the workman
10 complete control of the work before him.

The adjustable jaw for holding wedge-shaped pieces is made with an adjustable point which fits into a corresponding angular aperture of greater area, to allow a greater
15 vibrating movement. This adjustable jaw is held in position by a screw from below passing through an elongated hole having the pivot-point for its radius or center, the support of the jaw resting upon the point referred to.
20

It will be seen that the vise has a swinging movement upon the pivotal bearings 4 and a rotary movement within the eye-posts 10, which, taken together, form a universal adjustment.
25

Having described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

- 30 1. A vise provided with a tilting piece.
2. A vise having a swivel post.

3. A vise having a tilting piece provided with a gear and a worm, in combination.

4. A vise provided with an inner and outer clamp-jaw head, each having a plurality of jaws.
35

5. A tilting jaw-face having a supporting-point, and a pin, combined with a slot in the jaw, in which the pin works.

6. A vise having a swivel-post split longitudinally and provided with a conical seat.
40

7. A vise having an inner and outer jaw with concentric sleeves thereon sliding upon each other, combined with a swivel-post, a screw-nut, and a clamp-screw for securing the nut in place.
45

8. A vise having a rotary horizontal movement and a reciprocating vertical tilting movement.

9. A vise having a conical seat-support and a swivel-post therein, with means for adjusting the same.
50

10. A vise having a swivel-post and a tilting apron carrying said post.

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

JOSEPH F. EMMERT.

Witnesses:

DANIEL HOOVER,
REUBEN SHORERS.