

(No Model.)

W. H. AMES & M. GRIER.
FAN.

No. 449,025.

Patented Mar. 24, 1891.

Fig. I.

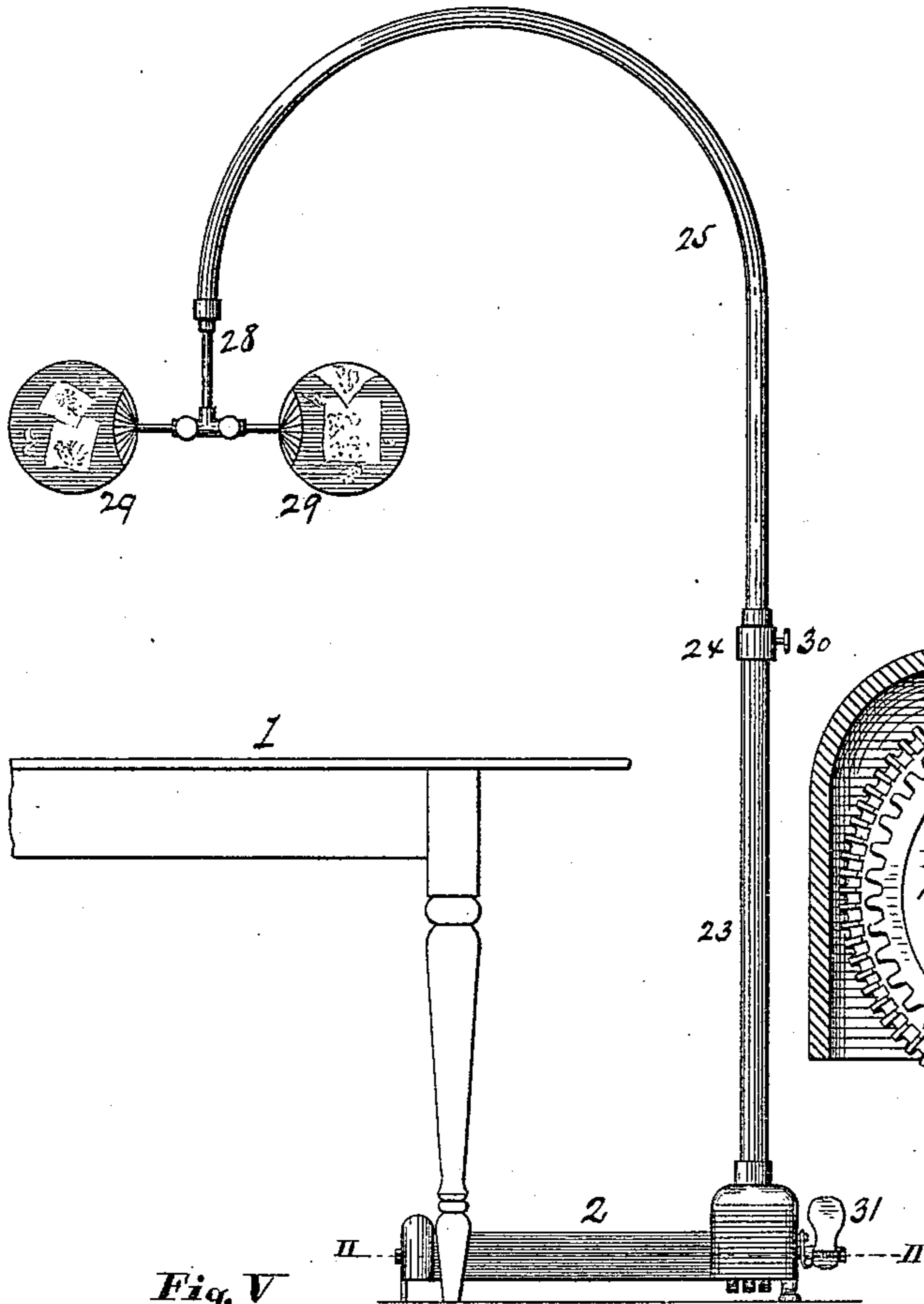


Fig. III.

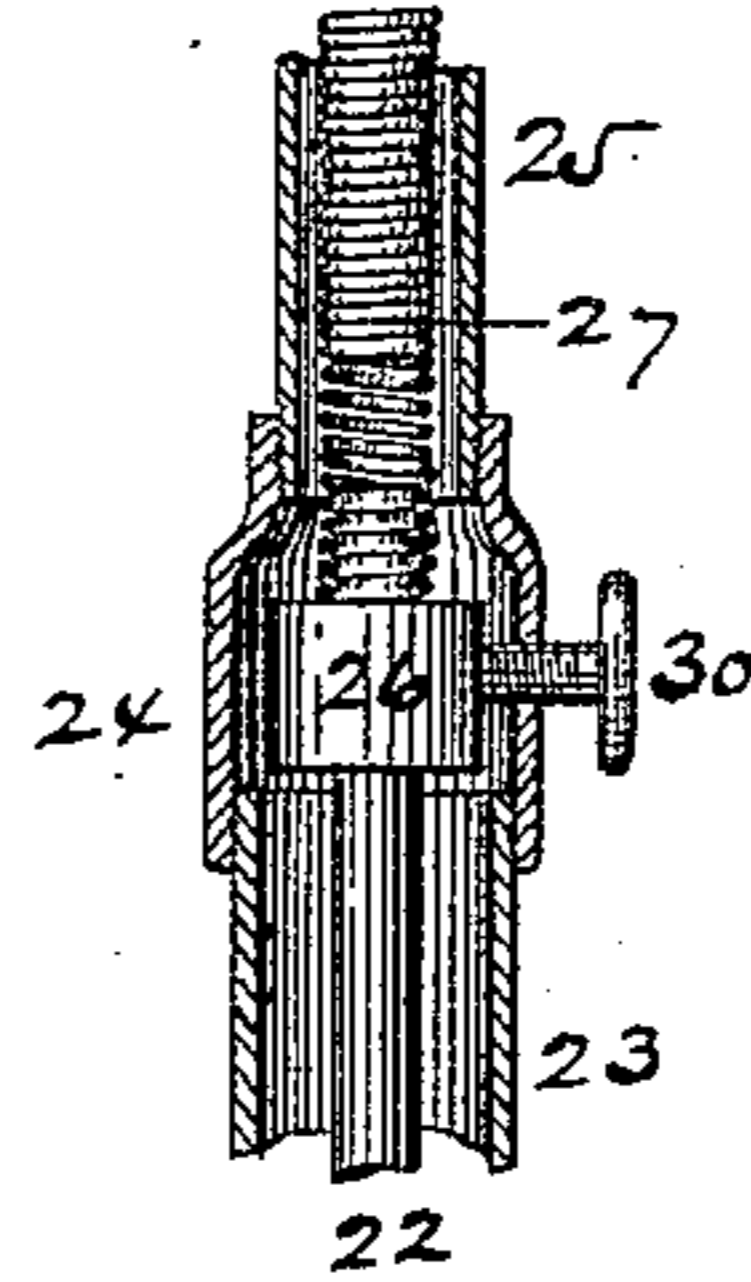


Fig. IV.

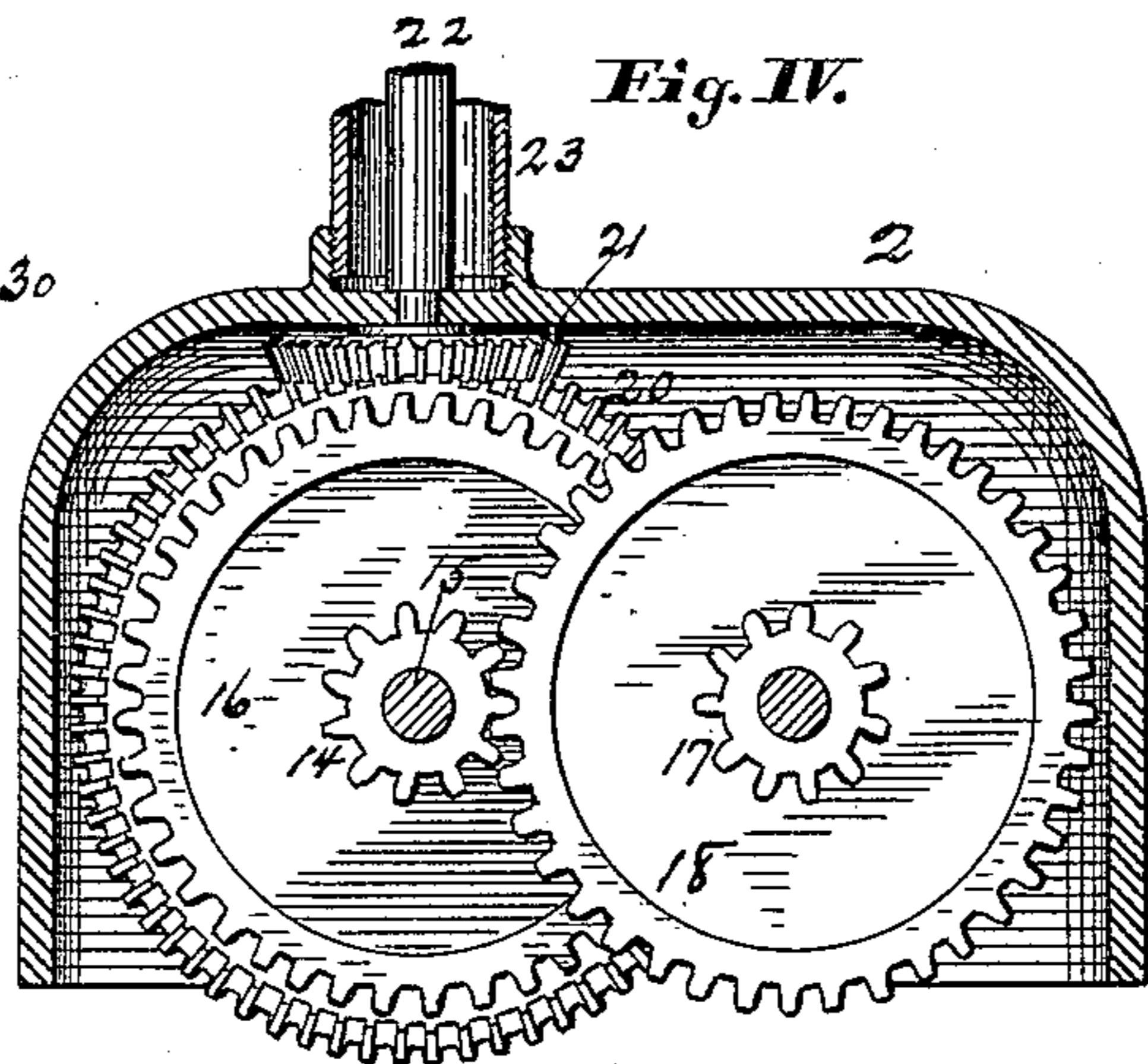


Fig. V.

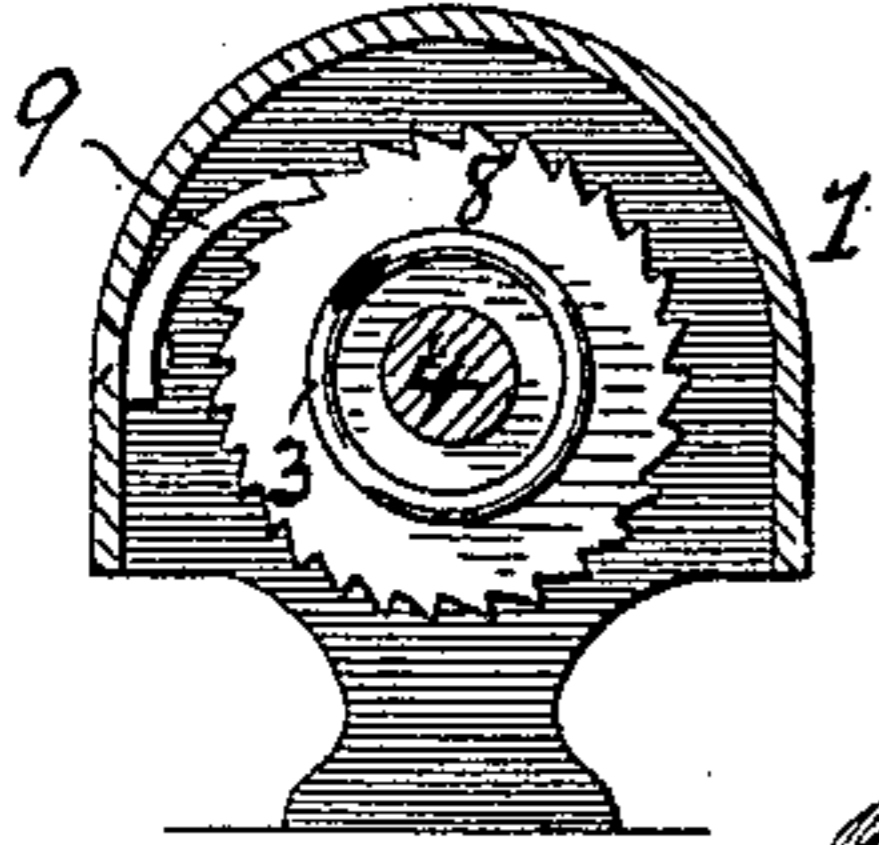


Fig. II.

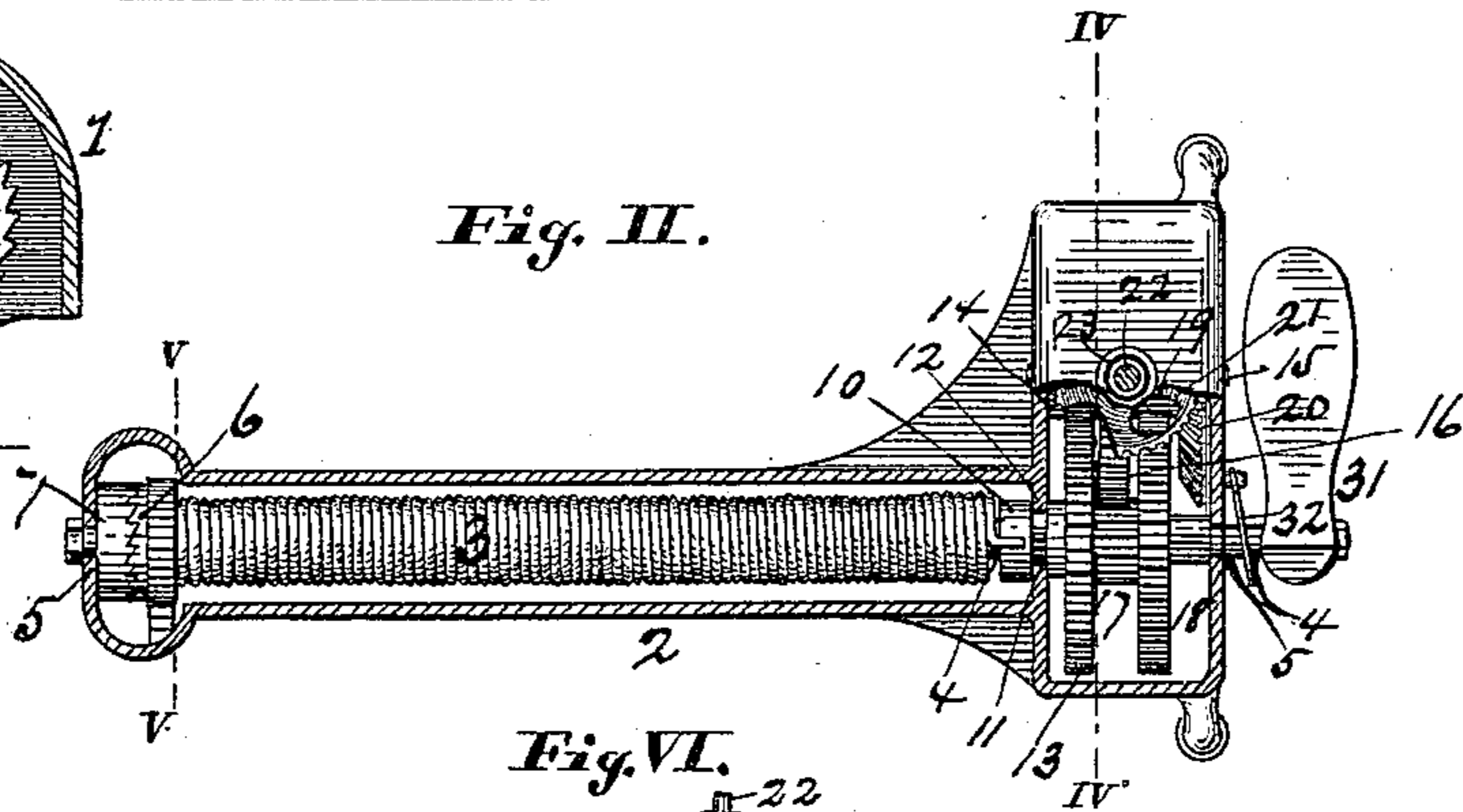
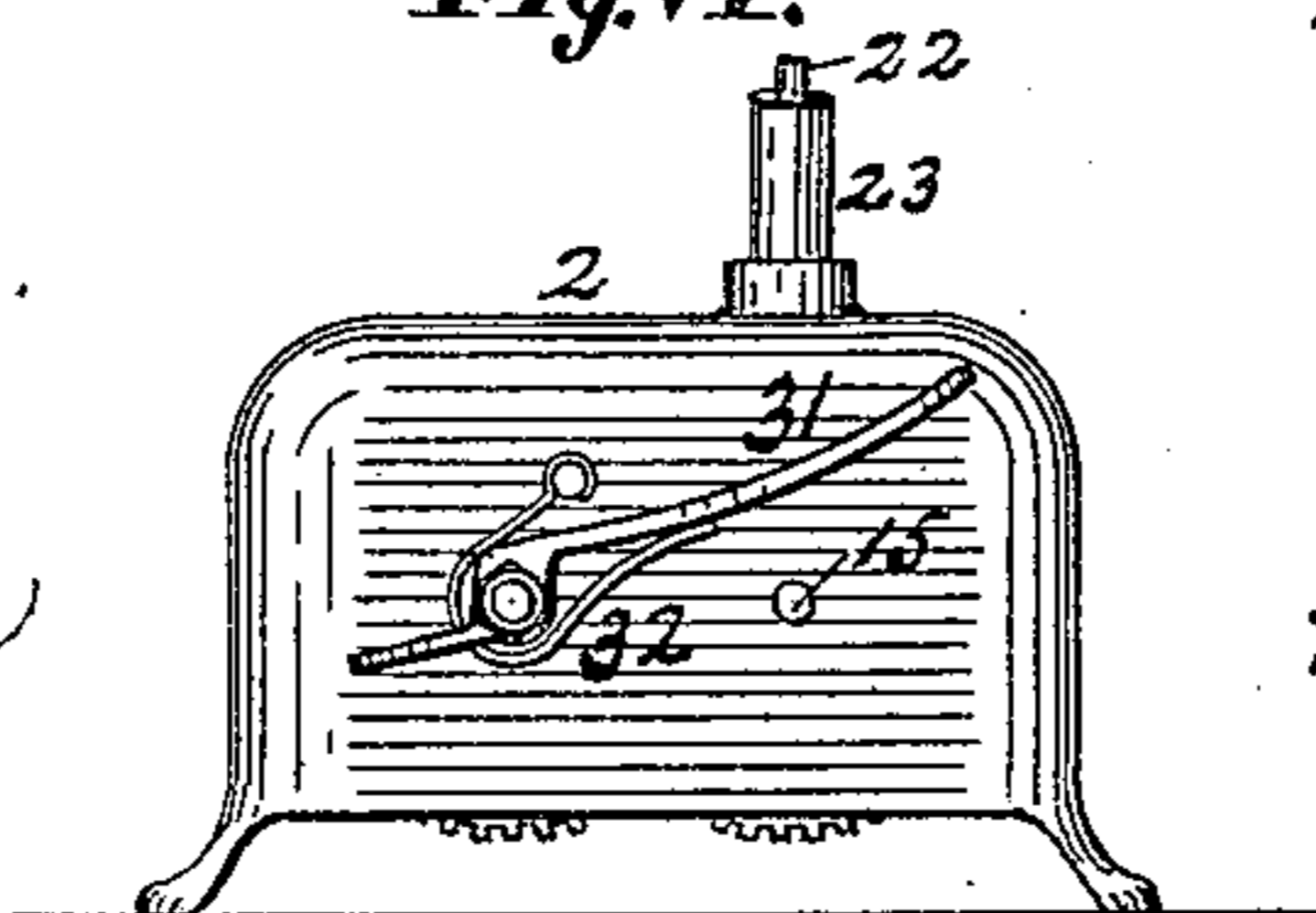


Fig. VI.



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SPECIFICATION forming part of Letters Patent No. 449,025, dated March 24, 1891.

Application filed August 26, 1890. Serial No. 363,130. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. AMES and MONROE GRIER, both of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Fans, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to an improved device for operating a fan or a number of fans; and our invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a side elevation illustrative of our invention. Fig. II is a horizontal section taken on line II II, Fig. I. Fig. III is an enlarged detail vertical section of the shaft-inclosing tubes at the point where they are joined. Fig. IV is an enlarged vertical section taken on line IV IV, Fig. II. Fig. V is a similar view taken on line V V, Fig. II. Fig. VI is an enlarged end elevation of the base of the device, showing the treadle by which the spring is wound up.

Referring to the drawings, 1 represents a table in connection with which the fan may be used or alongside of which the fan may be placed.

2 represents a base or housing inclosing a spiral spring 3, as shown in Fig. II. The spring surrounds a rod 4, supported in the ends 5 of the base 2. The outer end of the spring is secured to the member 6 of a clutch, which is mounted loosely on the rod 4 and which engages the other member 7 of the clutch, which is secured to the rod. The member 6 of the clutch has a notched flange 8, (see Fig. V,) with which engages a dog or pawl 9, secured to the base, and which prevents the backward or retrograde movement of the member 6 of the clutch. The inner end of the spring is made fast or secured, as shown in Fig. II, to a hub 10 of a sleeve 11, through which the rod 4 passes.

The sleeve 11 is journaled in a partition 12 of the base 2, as shown in Fig. II. On this sleeve and permanently secured to it is a cog-wheel 13, which meshes into a pinion 14. The cog-wheel 13 is loosely mounted on the rod 4 and turns freely thereon. The pinion 14 is mounted loosely on a pin or shaft 15, journaled in

the sides of the base or housing. Secured to the pinion 14 is a cog-wheel 16, which is also loosely mounted on its shaft or pin 15, and which engages a pinion 17, secured to or formed integral with a cog-wheel 18, the pinion 17 and wheel 18 being loosely mounted on the rod 4. The cog-wheel 18 engages a pinion 19, formed integral with or secured to a bevel-wheel 20, the pinion 19 and bevel-wheel 20 being loosely mounted on the pin or shaft 15. The bevel-wheel 20 is arranged in a vertical position and engages a corresponding wheel 21, arranged in a horizontal position and secured to the lower end of a shaft 22, which passes up through the top of the base or housing within a sleeve or tube 23. The gearing we have just described is best shown in Figs. II and IV. The tube or sleeve 23 extends upwardly to a suitable point, as shown in Fig. I, where it has a joint 24, as shown in Figs. I and III, and from where a goose-neck sleeve 25 extends. The shaft 22 extends upwardly from the joint 24, where it is provided with a collar or hub 26, to the upper end of which is secured a flexible shaft 27, formed in the usual way of coiled wire. The connection between the hub 26 and the upper end of the shaft 22 is preferably made by forming a non-circular socket in the former, into which the non-circular end of the latter fits. The flexible shaft 27 passes through the tube 25 and protrudes therefrom, as shown at 28, Fig. I, and to its outer end is secured one or more fans 29, which are revolved or turned by the shaft.

At the joint 24 we preferably place a set-screw 30, the inner end of which bears against the collar or hub 26 to form a friction-brake by which the speed of the fans may be regulated.

The inner end of the shaft 4 extends beyond the base or housing, as shown in Figs. I and II, and upon it is secured a treadle 31, which may be raised by a spring 32.

The operation is as follows: By applying the foot to the treadle 31 and moving it up and down power is stored in the spring 3, the member 6 of the clutch slipping around on the member 7. When sufficient power has been stored in the spring, the foot is removed. The spring then exerts its pressure on the hub or collar 10, and, by turning it, imparts the motion to the shaft 22 through the described gear-

ing. This revolves the flexible shaft 27, operating the fans, the movement of the fans being regulated by a suitable brake, such as the friction-screw 30. As soon as the power of the spring is spent it is wound up again by applying the foot to the treadle 31. This construction provides a cheap and simple means for operating a fan.

We claim as our invention—

10 1. The combination of a shaft carrying a fan, an inclosing tube, a base supporting the tube, a rod traversing the base, a spring surrounding said rod, a clutch connecting the spring and rod, a sleeve loose on said rod con-
15 nected to the spring, and gearing located between said sleeve and shaft, substantially as and for the purpose set forth.

20 2. The combination of a shaft, a fan secured to the shaft, a tube inclosing the shaft, a base, a rod traversing the base, a spring surrounding the rod, a clutch having one member secured to the spring and the other member secured to the rod, a treadle secured to said rod for winding said spring, a spring for
25 returning said treadle to normal position, and gearing located between said spring and shaft, substantially as and for the purpose set forth.

3. The combination of a shaft, a fan secured to said shaft, the base, a rod traversing said base, a spring surrounding the rod, a clutch
30 having one member 6 secured to said spring and the other member 7 secured to said rod, a notched flange on said member 6, a pawl engaging the notches of said flange, a treadle secured to said rod, and gearing loose on the
35 said rod and connected to said spring and shaft, substantially as set forth.

4. The combination of a shaft, a fan secured to the shaft, a tube inclosing the shaft, a base, a rod traversing the base, a spring surround-
40 ing the rod, the notched flange 8, secured to the spring, a pawl engaging said flange, a clutch forming a connection between the spring and rod, a sleeve loose on said rod connected to the spring, and gearing located be-
45 tween said sleeve and shaft and consisting of gear-wheels 13, 16, and 18, pinions 14, 17, and 19, and bevel-wheels 20 and 21, substantially as and for the purpose set forth.

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In presence of—

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THOS. KNIGHT.