

(No Model.)

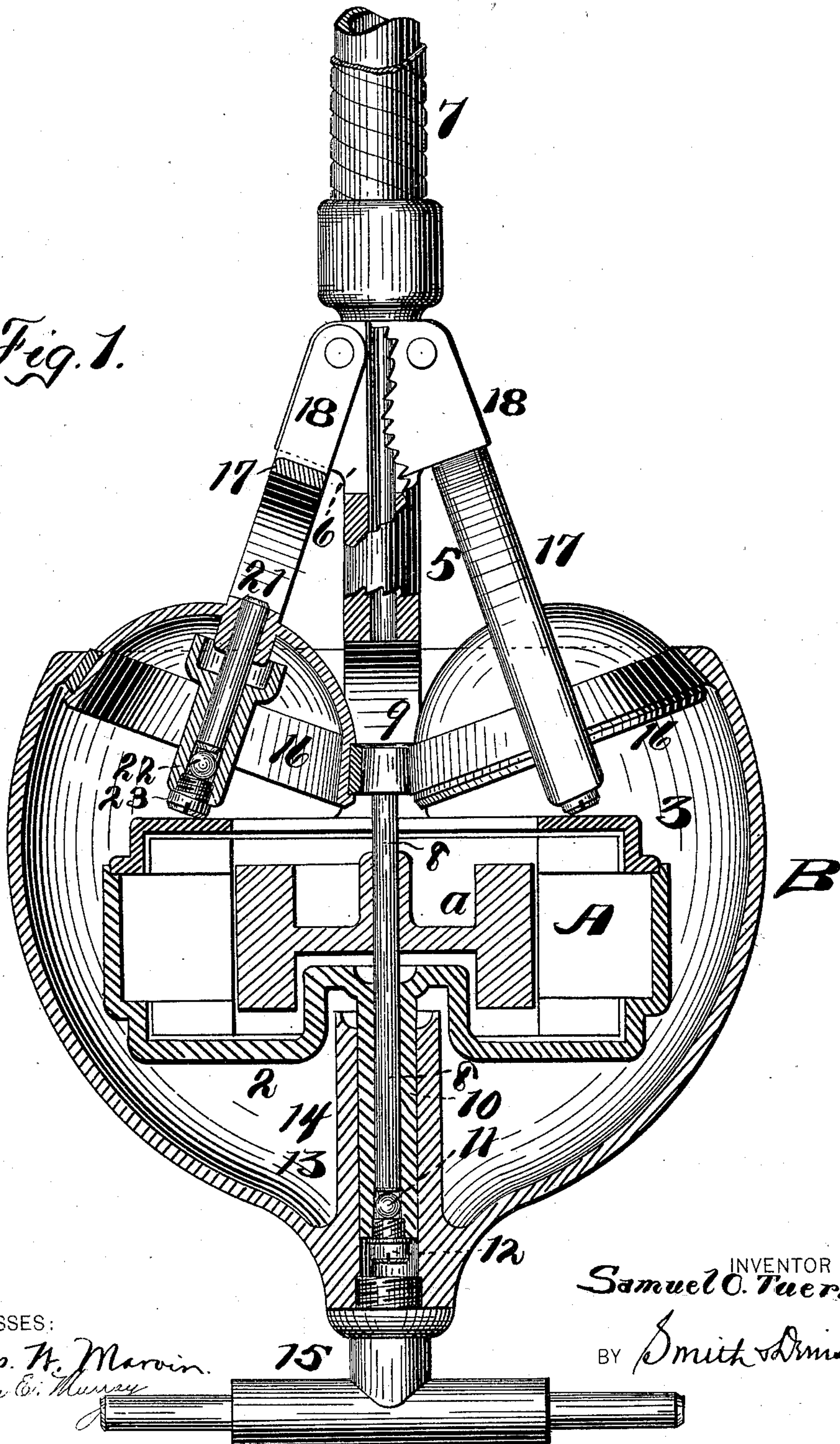
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S. O. TUERK.
REVOLVING FAN.

No. 561,362.

Patented June 2, 1896.

Fig. 1.



WITNESSES:

Chas. H. Marvin.
Jessie E. Murray

INVENTOR
Samuel O. Tuerk.

BY *Smith & Driscoll*

ATTORNEYS.

(No Model.)

3 Sheets—Sheet 2

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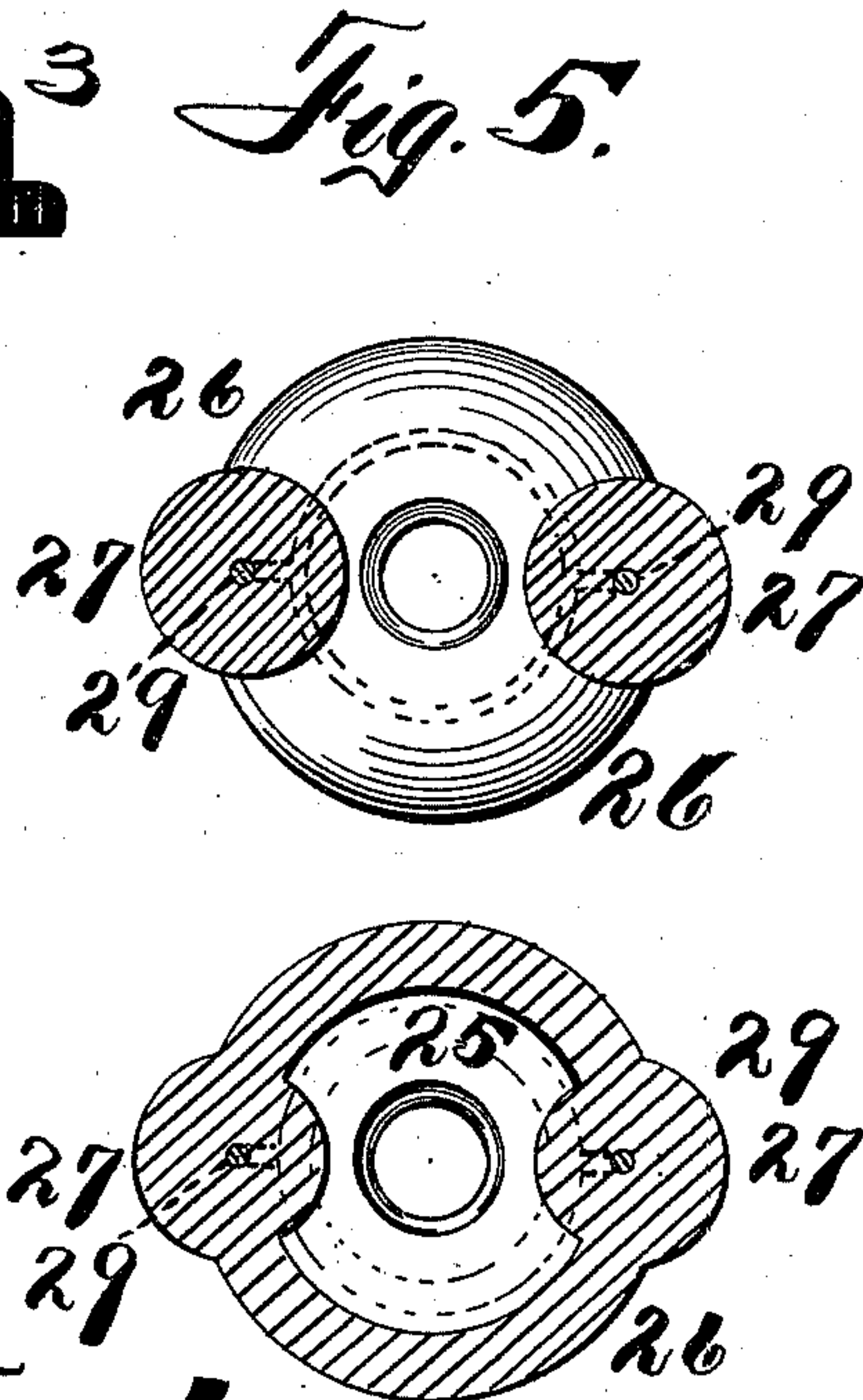
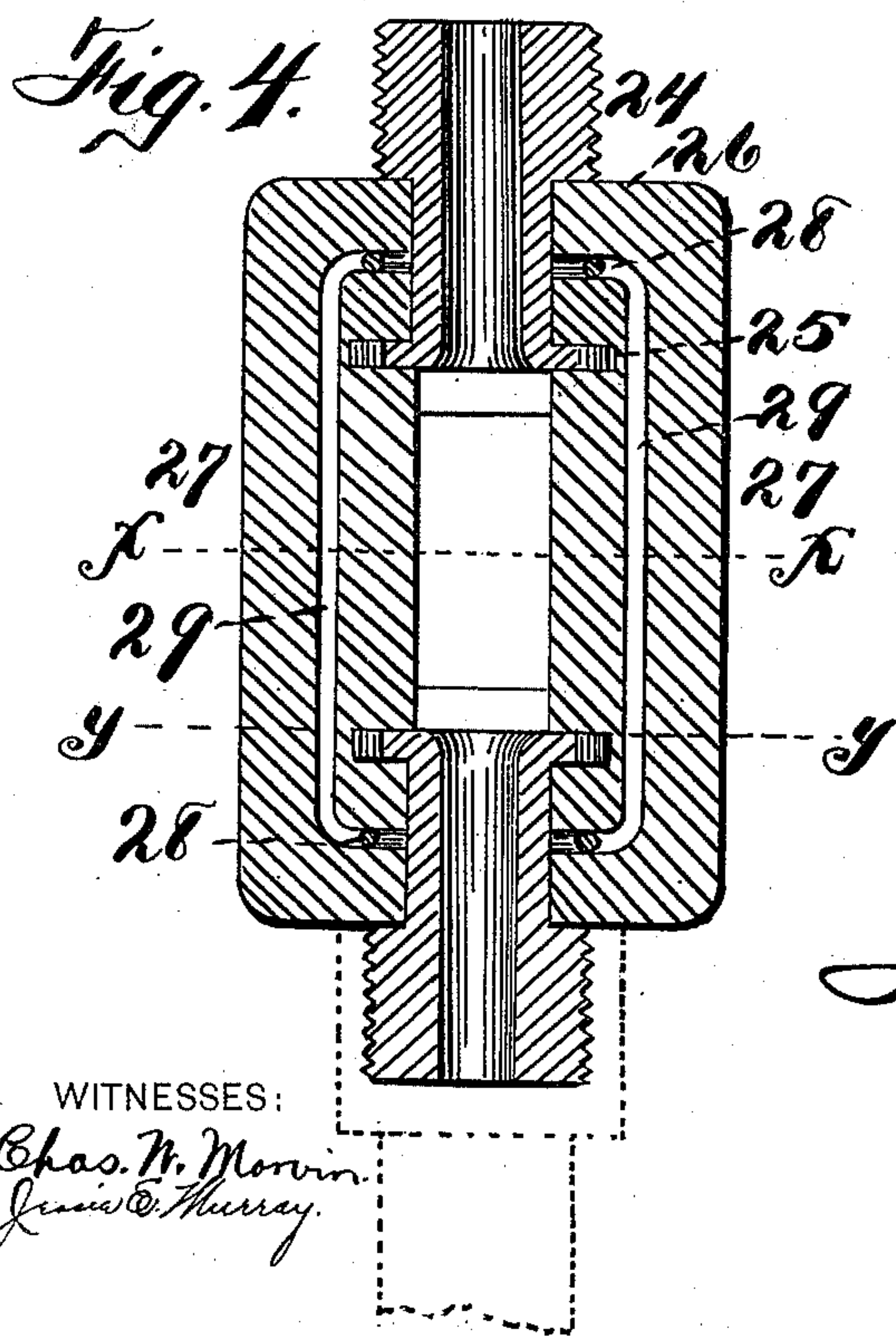
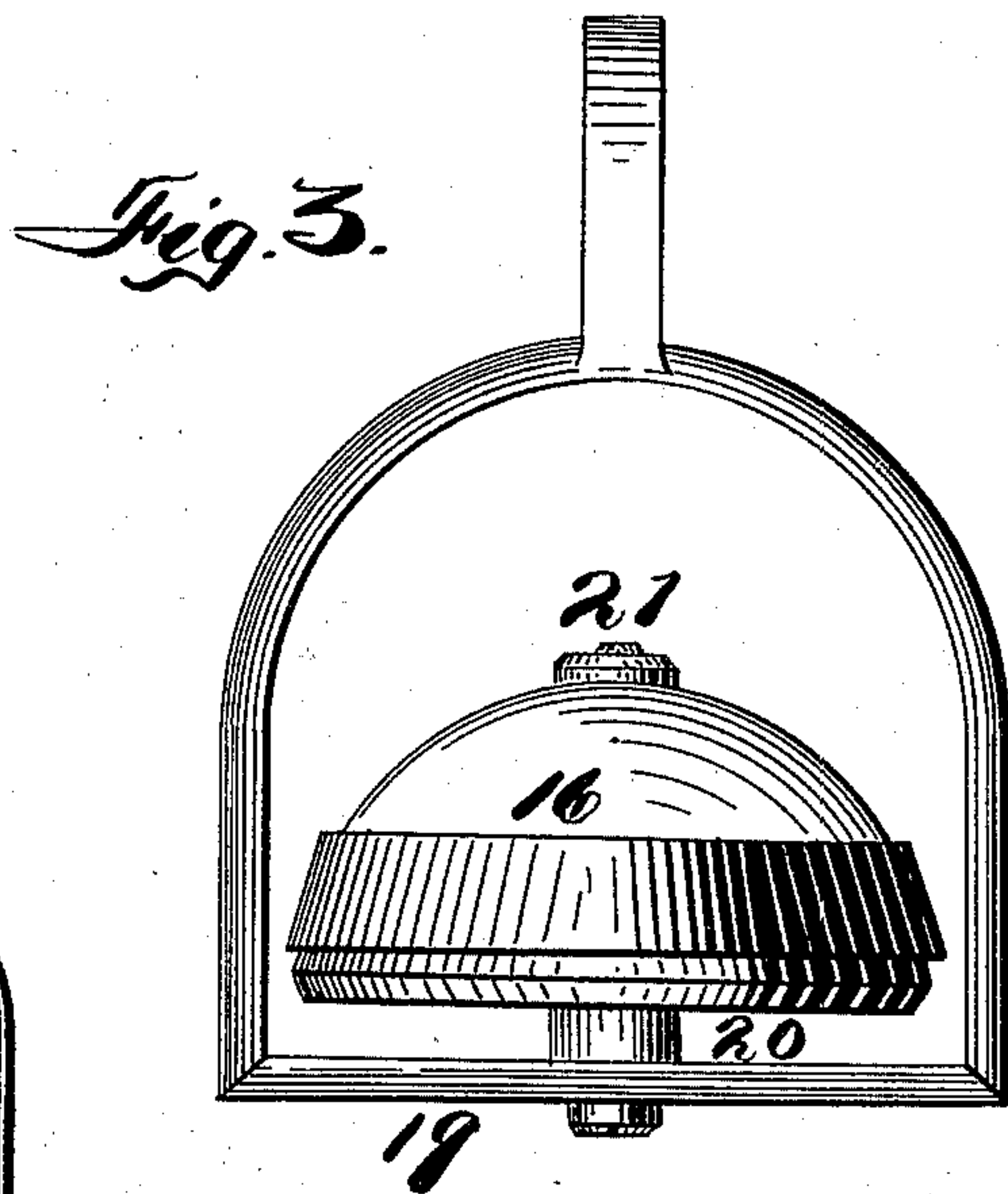
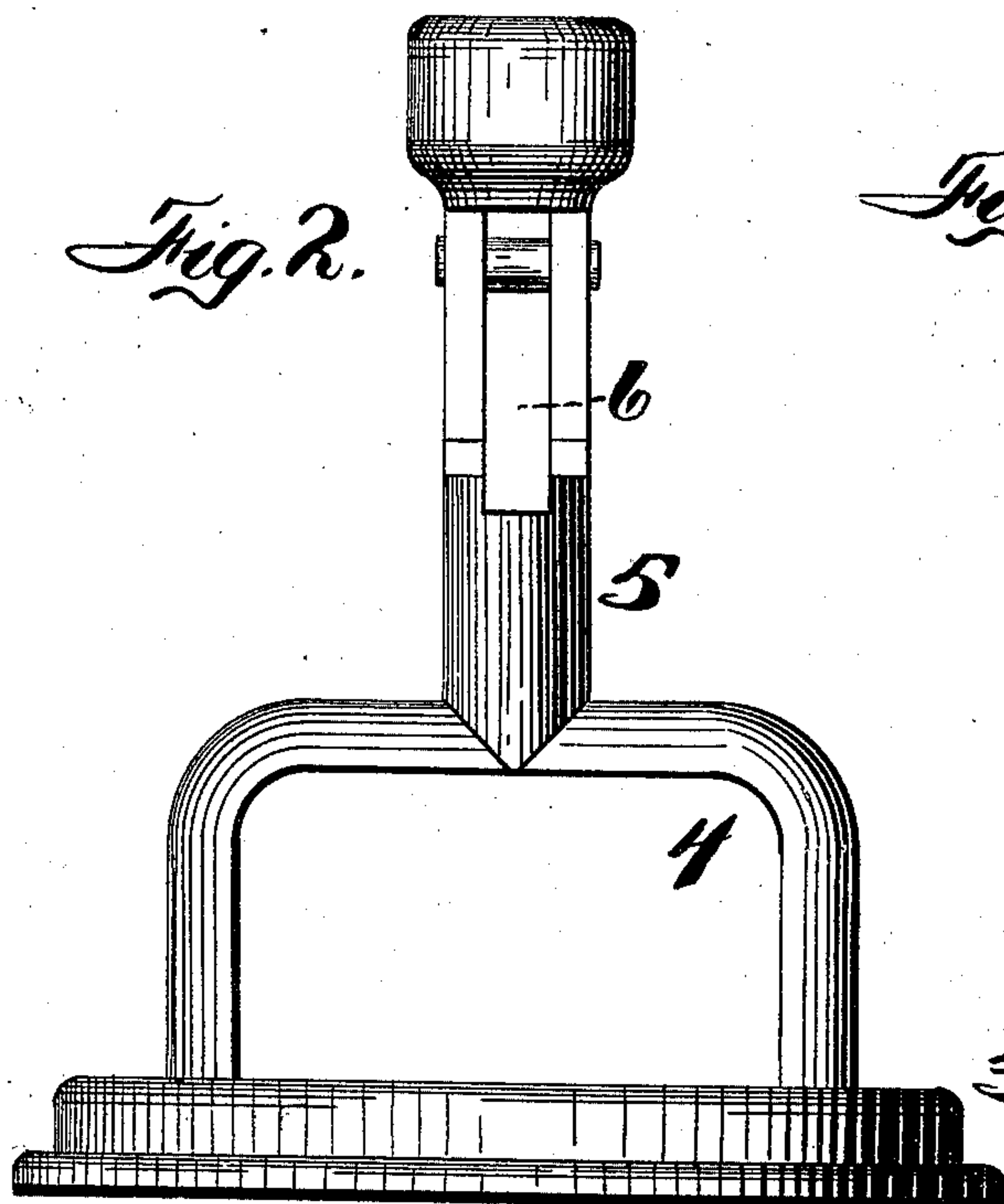


Fig. 6.

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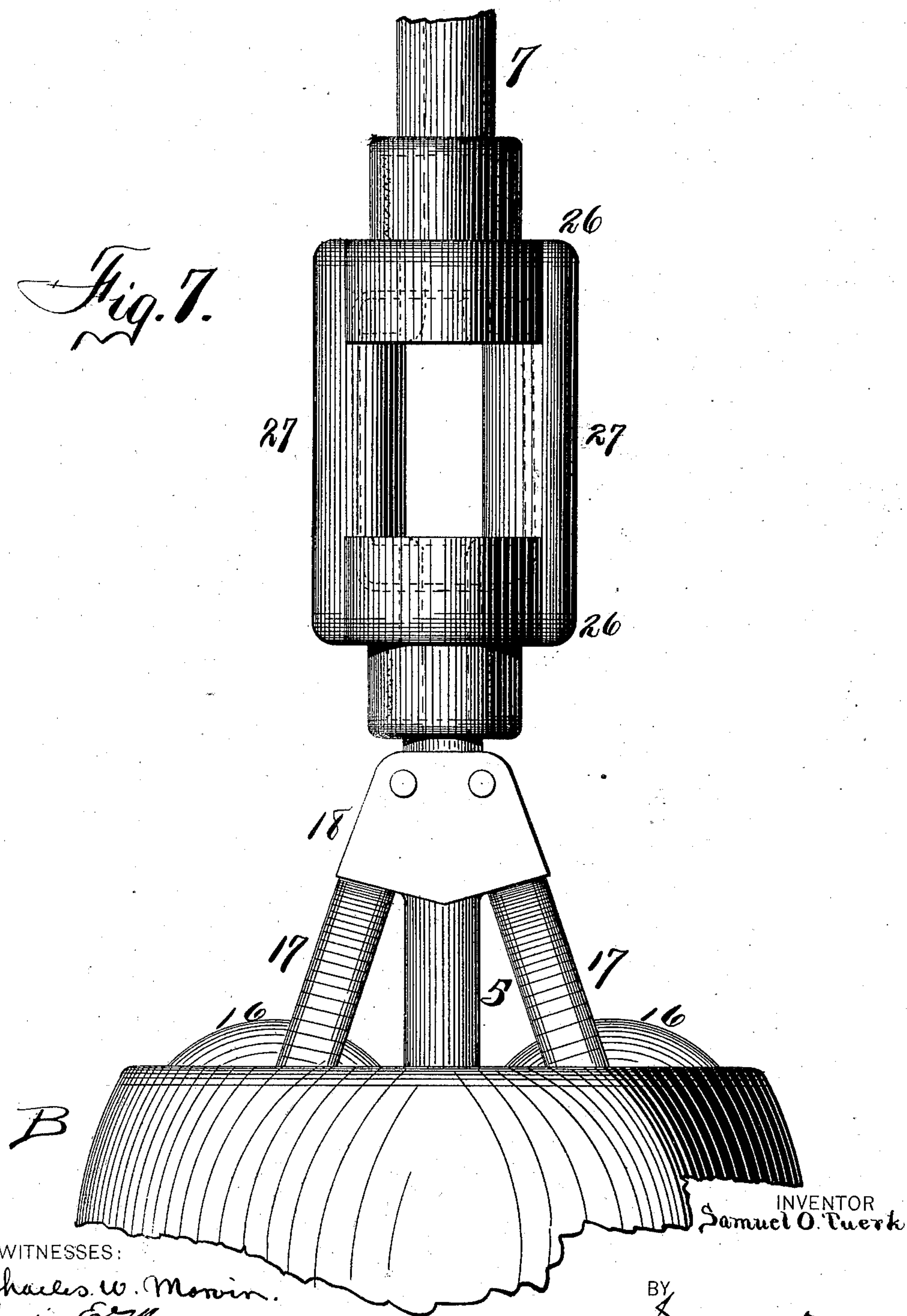
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S. O. TUERK.
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No. 561,362.

Patented June 2, 1896.

Fig. 7.



WITNESSES:

Charles W. Morin.
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UNITED STATES PATENT OFFICE.

SAMUEL O. TUERK, OF FULTON, NEW YORK.

REVOLVING FAN.

SPECIFICATION forming part of Letters Patent No. 561,362, dated June 2, 1896.

Application filed August 22, 1895. Serial No. 560,092. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL O. TUERK, of Fulton, in the county of Oswego, in the State of New York, have invented new and useful
5 Improvements in Revolving Fans, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to revolving fans of the class in which each fan is provided with its motor and each motor is suitably connected by wiring to a generator of electricity.

My object is partly to produce a speed-reducing mechanism whereby the high speed of the motor is reduced in the course of its transmission to the fan.

This mechanism comprises a motor, a shaft driven by it, a friction-pulley upon said shaft, a case inclosing the motor and carrying the fan-arms, and friction-wheels engaging with said pulley interiorly and exteriorly with the inner face of said case, whereby said case is rotated around the motor, but at a much slower speed. In this construction the friction-wheels are mounted in swinging frames hinged to the stationary support which carries the motor-body or its cover, and the weight of the fans and case is utilized to produce and maintain the frictional contact of said wheels, because said case and fans are supported and carried by said wheels and pulley, so that the friction is always the same, and any wear upon either pulley, wheels, or case is automatically taken up, and the fan is thus always at a speed
35 which bears a fixed ratio to that of the motor; and means are also provided for carrying the motor-box in a stationary position in the motor-case by providing said box with a tubular stem in which the shaft is journaled and providing the case with a tubular and vertical shank which fits over and rotates around said stem while said shaft is rotating within it.

My invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

50 Figure 1 is a vertical sectional elevation of the fan supporting and driving mechanism, omitting the wiring and the fan-blades. Fig.

2 is a side elevation of the cover of the motor-box, its yoke, and the tubular and vertically-slotted stem upon the yoke. Fig. 3 is a like view of one of the friction-wheels, its supporting-yoke, and shank. Fig. 4 is a vertical section of a device for cushioning the fan and taking up the vibration and incidentally a good share of the noise. Fig. 5 is a transverse section thereof on line *x*. Fig. 6 is a like view on line *y*. Fig. 7 is an elevation of part of the fan-case, friction-wheels, yoke, vibration take-up, and main support.

A is a suitable motor of ordinary construction mounted in a suitable box 2, which is more or less closed by a cover 3, to which the yoke 4 is secured, and the tubular stem 5 is erected upon said yoke, said stem having also a slot 6. This stem is connected to a suitable stationary support 7, and the motor-box is also stationary, and suitable wiring led through said tubular stem or in any other suitable manner is connected to the motor in the usual manner and the armature is rotated in the usual way. A suitable shaft 8 is secured to and forms the pivot upon which the armature *a* rotates. A suitable pulley or gear 9 is secured upon the upper end of said shaft.

The motor-box is provided with a tubular stem 10, in which said shaft is suitably journaled or stepped, as by a ball 11, within said stem, a screw 12, adjustably supporting said ball, and a suitable washer 13, when desired, between said ball and shaft.

B is the case inclosing the motor-box, open on top and having a tubular vertical shank 14 projecting upwardly from its bottom, and 15 is a suitable fan-carrier screwed into the bottom of said case. Said shank fits over and rotates upon and around the motor-box stem. The inner upper edge of the case is beveled, substantially as shown.

Friction-wheels 16, of any number desired, engage frictionally with said pulley and with said case, so that the rotation of the motor drives the case and fan at a speed reduced by the ratio of the diameters of said pulley, wheels, and of the bearing-surface of said case.

Suitable yokes 17, having shanks 18, which fit into the slot 6 and are hinged to the stem 5, each carry a wheel. Upon the cross-bar 19 of the yoke 17 a tubular standard 20 is erected. A shaft 21 is secured to the wheel and

journaled or stepped in said standard, 22 being a ball under said shaft, and 23 an adjusting-screw under the ball; all so that the yoke is stationary and the wheel revolves therein.

5 It will thus be seen that the yoke 4 carries the motor-box, the shaft, and the friction-wheels, and said wheels carry the case and fans, so that their gravity is exerted upon the wheels and through them upon the pulley, 10 and that all wear of either of the driving parts is automatically taken up and that the frictional contact is always of the same force.

In Figs. 4, 5, and 6 a device is shown for taking up the vibration and the resonant noise 15 and cushioning the fans. Threaded end pieces 24, tubular when desired, and each having a flange 25 upon its inner end, are vulcanized into a rubber block consisting of ends 26. A stiffener is also vulcanized therein, comprising wire rings 28, embedded in said ends, 20 and connecting-wires 29, embedded in the side bars. The threaded ends are screwed, one into the main support and the other into the stem 5, and thus the fan-case, motor, and driving mechanism are elastically supported and 25 cushioned thereon, the wires regulating such longitudinal elasticity or stretch of the rubber and the whole device performing the functions aforesaid.

30 Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A fan-motor comprising a motor, a shaft driven thereby, a pulley upon and driven by 35 said shaft, wheels driven by said pulley and mounted in swinging yokes, a case inclosing the motor and driven by said wheels, and fans mounted upon said case, in combination.

2. A stationary motor-box provided with a

tubular stem, a motor-shaft journaled therein 40 and means to rotate it, in combination with a case inclosing the motor-box and journaled upon the stem thereof, fans mounted upon said case and means to transmit the rotation of said shaft to said casing to operate said 45 fans.

3. A motor-box and motor suspended from a suitable support, a shaft and pulley thereon driven by the motor, a case inclosing said motor-box and wheels mounted in yokes swinging 50 upon said box-carrier and engaging with, supporting, and driving said case, and fans mounted upon and rotated with said case, in combination.

4. The combination with suitable supports, 55 and a motor-fan, of an intermediate connection comprising threaded bars vulcanized into the ends of a piece of rubber whereby said fan is elastically supported.

5. The combination with a suitable support, 60 and a motor-fan, of an intermediate elastic connection to take up the vibrations, &c., and comprising threaded bars vulcanized into a piece of rubber and flanged substantially as shown. 65

6. The combination with a motor-fan, and a suitable support therefor, of an intermediate elastic connection to take up the vibration, &c., and comprising a rubber body, threaded bars connected thereto, and wires 70 connected to said rubber to limit its longitudinal elasticity.

In witness whereof I have hereunto set my hand on this 17th day of August, 1895.

SAMUEL O. TUERK.

In presence of—

F. G. SPENCER,

N. N. STRANAHAN.