

No. 616,589.

Patented Dec. 27, 1898.

N. ROSSI & F. GHIGGERI.

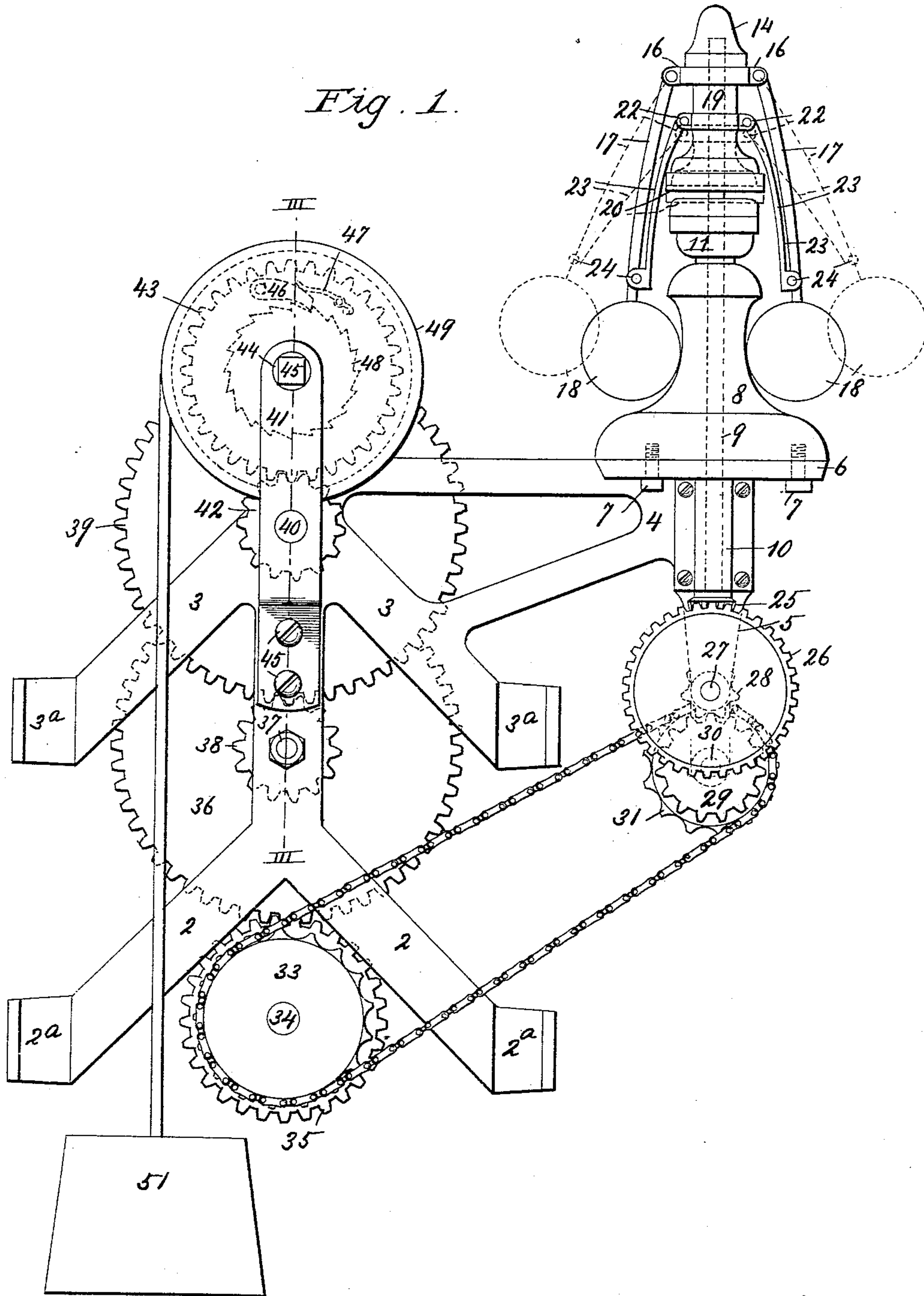
MOTOR.

(Application filed Feb. 21, 1898.)

(No Model.)

2 Sheets—Sheet 1

Fig. 1.



Witnesses:

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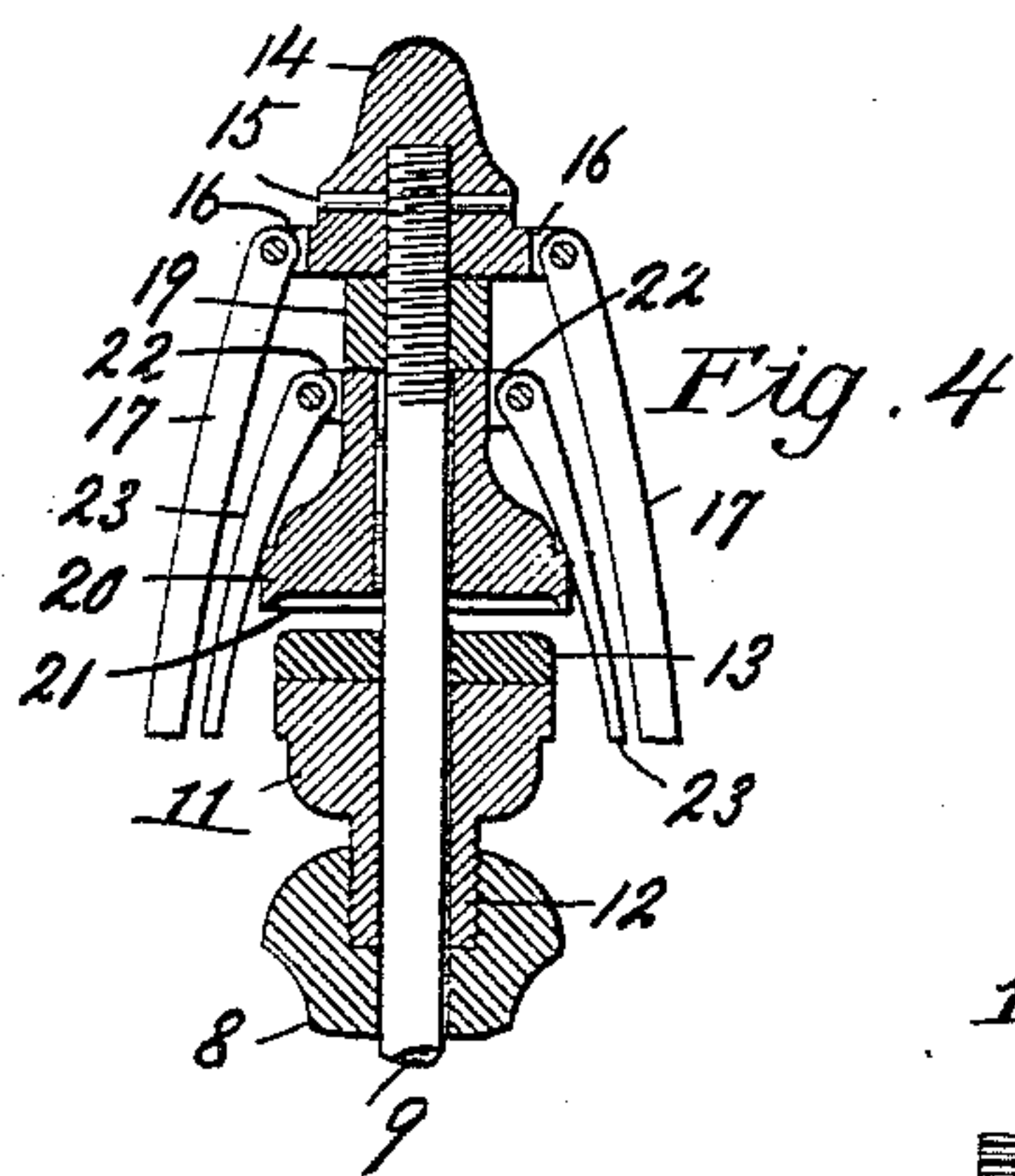


Fig. 2.

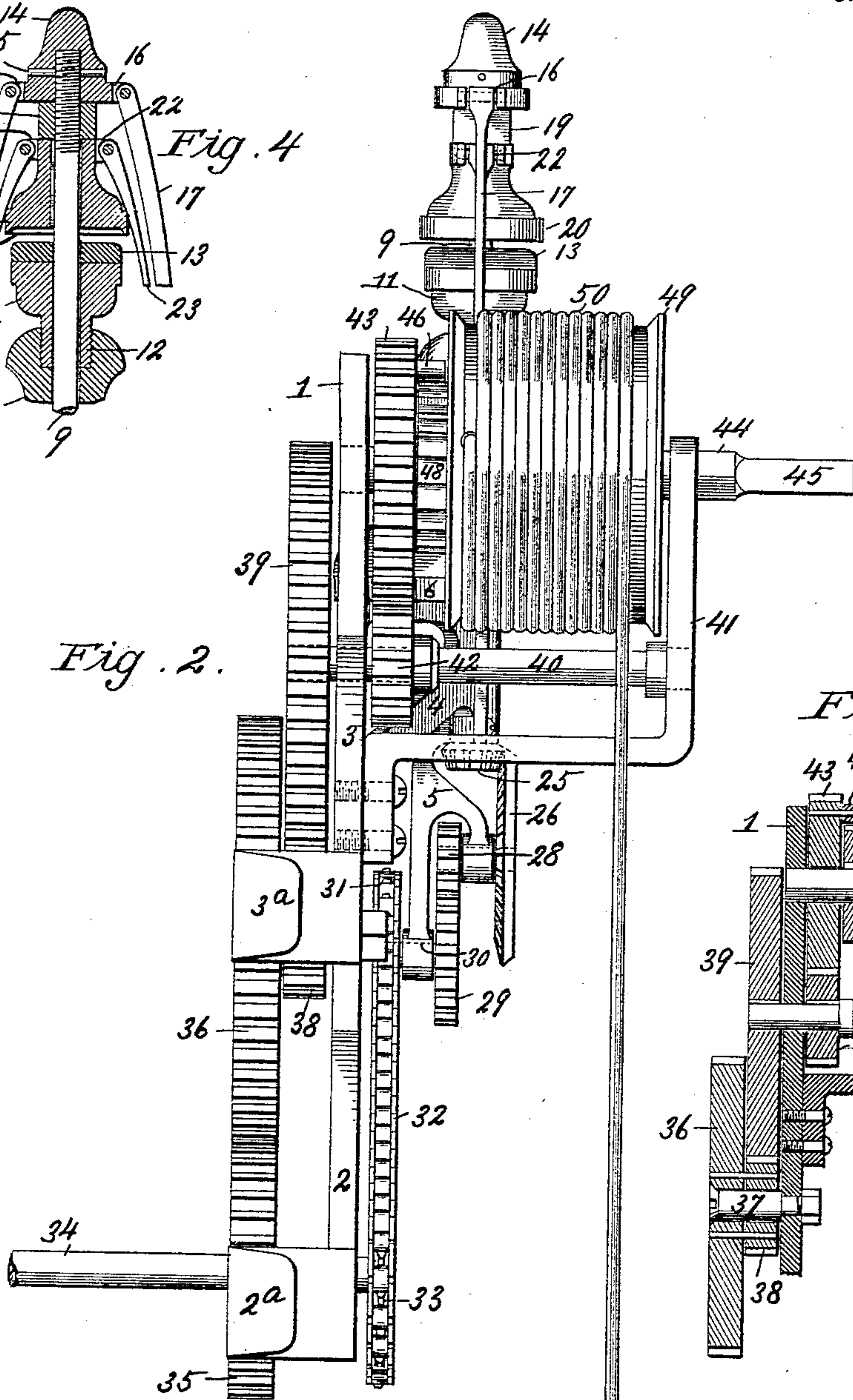
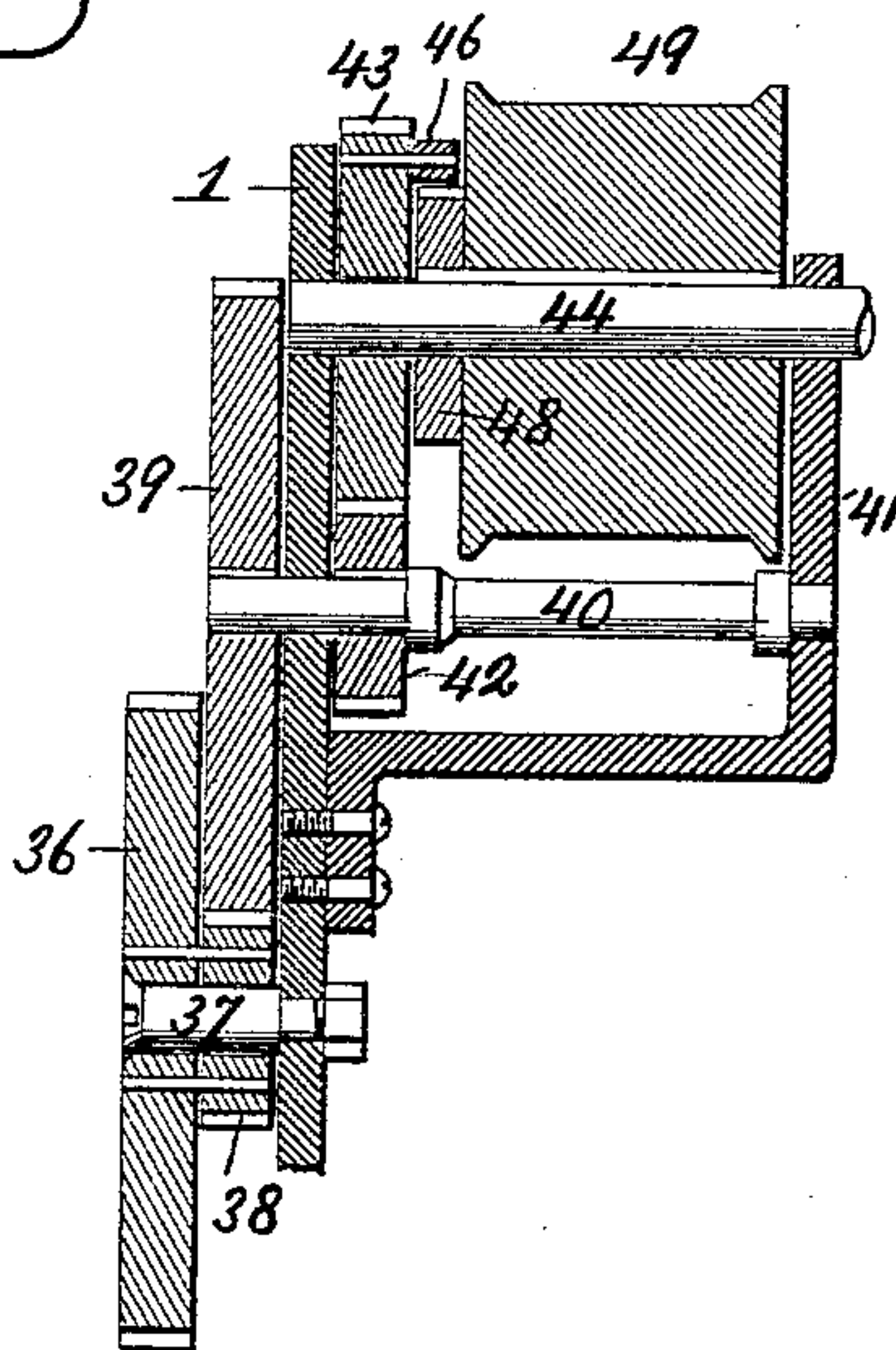


Fig. 3.



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UNITED STATES PATENT OFFICE.

NICHOLAS ROSSI AND FELICE GHIGGERI, OF KANSAS CITY, MISSOURI.

MOTOR.

SPECIFICATION forming part of Letters Patent No. 616,589, dated December 27, 1898.

Application filed February 21, 1898. Serial No. 671,092. (No model.)

To all whom it may concern:

Be it known that we, NICHOLAS ROSSI and FELICE GHIGGERI, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Motors, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention relates to motors, and more particularly to that class actuated by a weight or its equivalent; and our object is to produce a motor of this character which may be employed to operate a corn-popper, peanut-roaster, fan, sewing-machine, or light operating machinery of any kind, and is of simple, strong, durable, and inexpensive construction; furthermore, a motor provided with a governor which automatically responds to the slightest variation of speed and thereby insures a uniformity of speed and a slow gradual descent of the weight.

The invention consists in certain new and useful features of construction and arrangement, as will be hereinafter described and claimed, and in order that it may be fully understood we will proceed to describe it, with reference to the accompanying drawings, in which—

Figure 1 is a side elevation of a weight-motor embodying our invention. Fig. 2 is an edge view of the same. Fig. 3 is a reduced vertical section taken on line III III of Fig. 1. Fig. 4 is a vertical section of the upper portion of the governor.

In the said drawings a cast-metal frame comprises, essentially, the vertical body portion 1, a pair of diverging arms 2, terminating in hooks 2^a, the diverging arms 3 above arms 2 and terminating also in hooks 3^a, and a skeleton arm 4, projecting from the body portion and one of the arms 3, and said arm 4 is provided with a pendent forked arm 5 and a horizontal arm 6. Bolts 7, extending up through the arm 6, engage and clamp down thereon the standard 8, provided with a central vertical passage, through which extends the shaft 9. Said shaft is journaled near its lower end in a bearing 10, screwed to the pendent arm 5.

A collar 11, which surrounds the shaft, is

provided with a depending stem 12, screwed into the top of standard 8, and with a removable friction-cap 13, said cap being made removable so that it may be cheaply replaced when desirable or necessary.

14 designates a cap screwed upon the upper end of shaft 9, and 15 a pin extending through the same and the shaft in order to make the connection of said parts absolutely secure. Said cap is provided at diametrically opposite points with bifurcated lugs 16, in which the upper ends of governor-arms 17 are pivotally mounted; balls or weights 18 being attached to the opposite or free ends of said arms in the customary manner.

An adjusting nut or collar 19 is mounted on the shaft below the cap, and between said nut or collar and friction-cap 13 is a sliding sleeve 20, said sleeve being non-rotatively mounted on the shaft and provided with a recess 21 at its lower end, adapted to snugly fit upon the friction-cap when the motor attains too high a speed. Said sleeve is provided with lugs 22 at opposite sides, between which are pivotally mounted the upper ends of links 23, the lower ends of said links being pivoted, as at 24, to the governor-arms 17.

In action the slightest increase in speed on the part of the motor is responded to by the greater divergence of the governor-balls, which in turn cause the sleeve 20 to slide downward on shaft 9, because the connections between the arms 17 and sleeve 20 are non-expansive, and any outward movement of their lower ends must be accompanied by a synchronous downward movement of their inner ends. This downward movement is arrested by the engagement of the sleeve with the cap 13, the friction engendered retarding and regulating the speed of the motor. As the speed diminishes the balls approach nearer together and thereby lift the sleeve out of contact with friction-cap 13.

25 designates a bevel-gear upon the lower end of shaft 9, and 26 a larger bevel-gear driving the same, gear 26 being mounted upon one end of a short shaft 27, journaled in the short branch of forked arm 5. A small gear-wheel 28, mounted upon the opposite end of shaft 27, is driven by a larger gear 29 upon shaft 30 of the long branch of the forked arm 5. A

sprocket-wheel 31 upon the opposite end of said shaft is connected by chain 32 with sprocket 33 on drive-shaft 34, said shaft being journaled in any suitable manner and adapted for connection to the device or machine to be operated.

35 designates a gear-wheel mounted on shaft 34 and meshing with a larger gear-wheel 36, journaled upon the rigid or stub shaft 37, secured to the frame.

38 designates a small gear-wheel cast integral with or secured to gear 36 and meshing with the larger gear-wheel 39, mounted upon shaft 40, journaled at its opposite ends in the frame and an angle-bracket 41, bolted or otherwise secured to the frame.

42 designates a small gear-wheel mounted upon shaft 40 and meshing with the gear-wheel 43, loosely mounted or journaled on shaft 44. Said shaft is journaled in the upper ends of the frame and bracket 41 and at one end is formed rectangular, as at 45, for convenient engagement with a crank or wrench.

46 designates a pivoted dog carried by gear-wheel 43, and 47 a spring pressing the dog against the ratchet-wheel 48, secured to a winding-drum 49, mounted rigidly on the shaft 44. A cable 50 is secured at one end to the drum, and attached to its opposite end is a weight 51.

When the motor is properly connected up to the device to be operated, the cable is wound upon the drum until the weight attains the desired height, this winding being easily done, because the pawl or dog 46 slips back over the ratchet-wheel without affecting the position of the latter and the device to be operated, so as to avoid imposing any additional and unnecessary work on the person in charge. He then permits the weight to begin its fall or descent, and thereby operates the corn-popper or other device or machine, and it will be observed that the descent of said weight will be uniform and slow and gradual so as to move imperceptibly, owing to the fact that the governor is geared up exceedingly high and is therefore rendered so extremely sensitive to inequalities of speed that it instantly responds to the slightest variation.

Having thus described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

A metal frame consisting of a vertical body portion 1, having a pair of diverging arms 2 terminating in hooks 2^a, and an upper pair of diverging arms 3 terminating in hooks 3^a, a skeleton arm 4 extending from the body portion and one of the upper diverging arms, a pendent forked arm 5 provided with a governor-base 6, a bracket 41 rigidly secured to the body portion 1, a shaft 44 journaled in the upper portions of the bracket and body portion and having its outer end squared to receive a crank or other device for turning, a drum 49 rigidly secured to said shaft, a cable having its upper end secured to the drum and its lower end fastened to the weight, a ratchet-wheel rigidly secured to shaft 44, a cog-wheel 43 journaled on said shaft and provided with a pawl which slips over the ratchet-wheel when the cable is being wound on the drum, and engages the teeth of said wheel when the motor is in operation, causing the rotation of cog-wheel 43, a train of intermeshing gears, suitably mounted on shafts carried by the frame, and receiving motion from gear-wheel 43, a sprocket-wheel 33 secured to the undermost shaft 34, a sprocket-chain connecting said sprocket-wheel to a smaller sprocket-wheel 31, rigidly mounted on a shaft 30 journaled in the lower arm of fork 5, a cog-wheel 29 rigidly secured to the opposite end of shaft 30, a shaft 27 journaled in the short arm of fork 5, a small cog-wheel 28 rigidly mounted thereon and intermeshing with cog 29, a bevel-gear 26, rigidly mounted on the opposite end of said shaft, a vertical shaft, and a governor having its standard secured to base 6, a vertical shaft 9 having the rotatable portion of the governor secured to its upper end and a small bevel-wheel, keyed to its lower terminal, which intermeshes and receives its motion from bevel-gear 26, substantially as set forth and described.

In testimony whereof we affix our signatures in presence of two witnesses.

NICHOLAS ROSSI.
FELICE GHIGGERI.

Witnesses:

MARY D. LAWRENCE,
SAM. KERNAHAN.