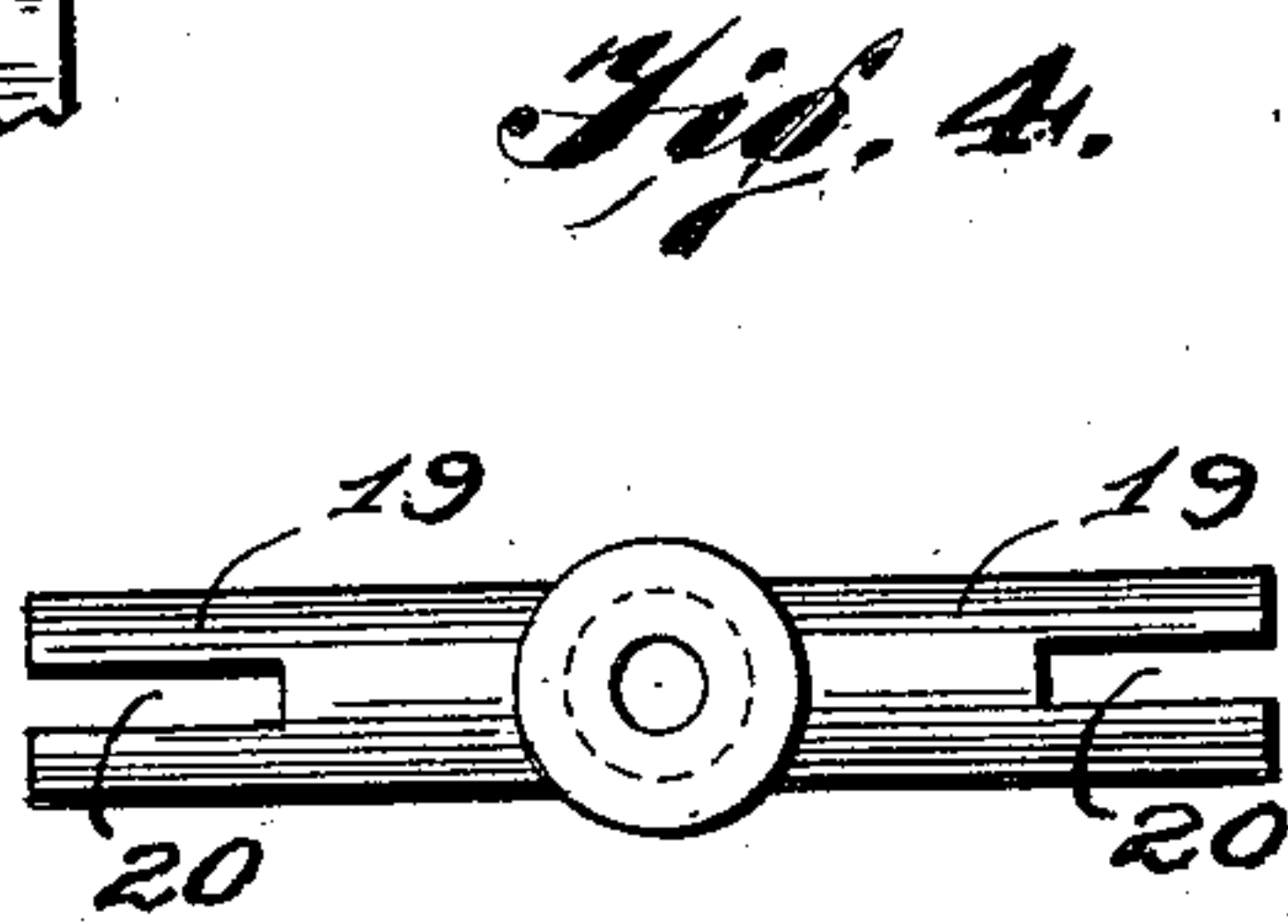
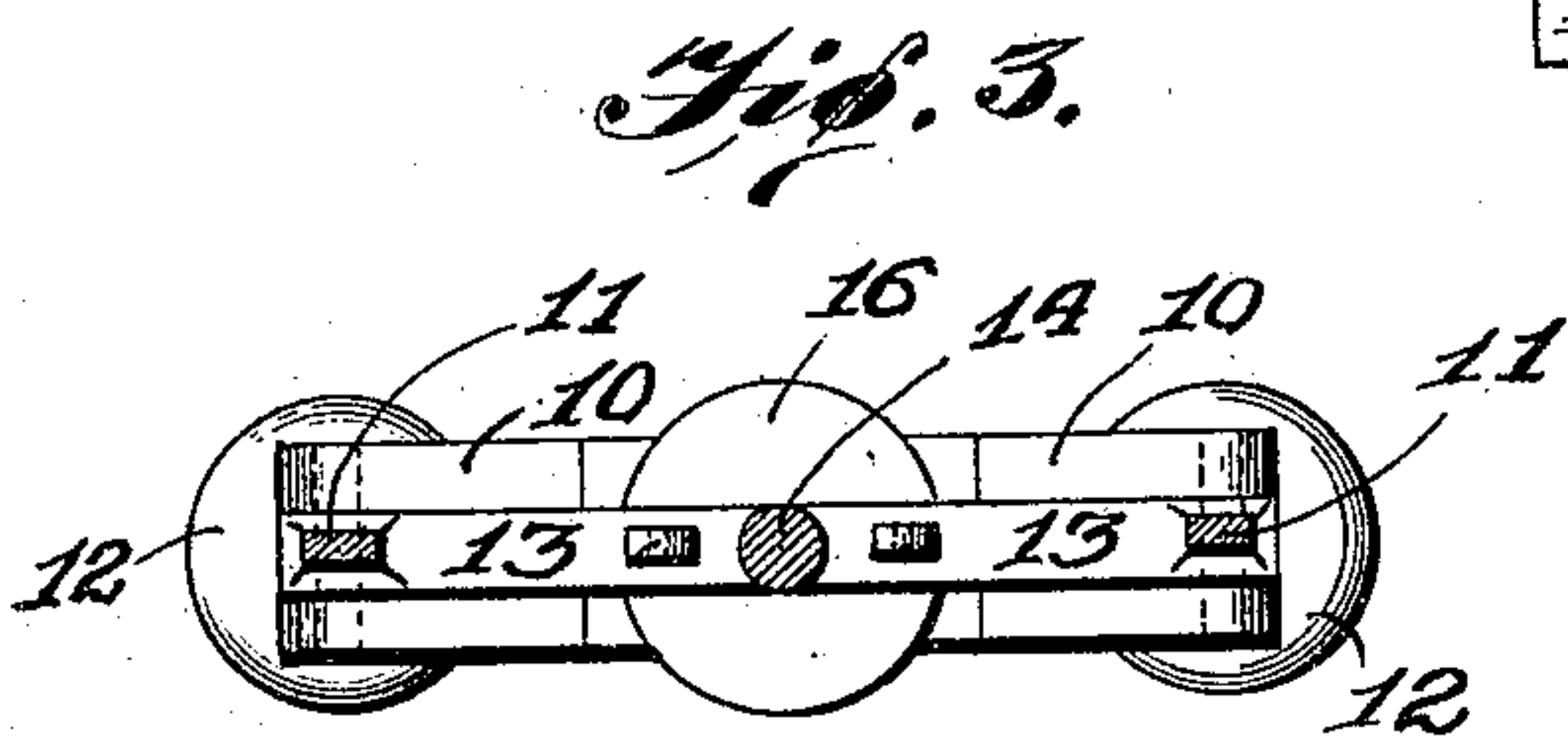
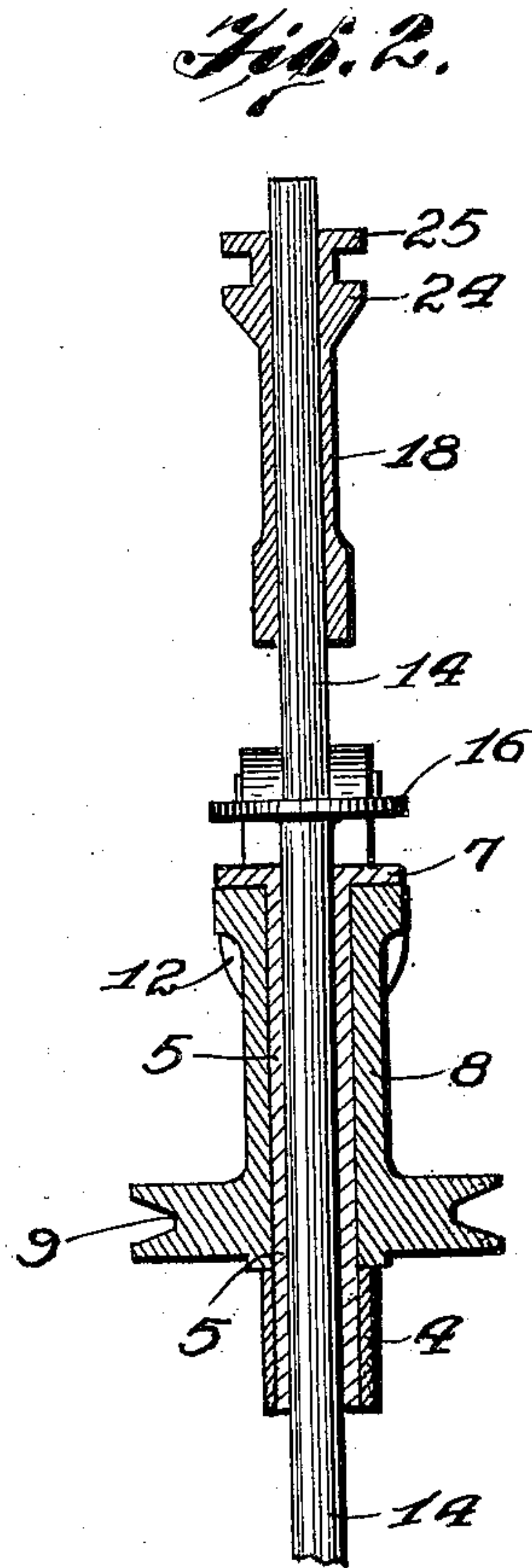
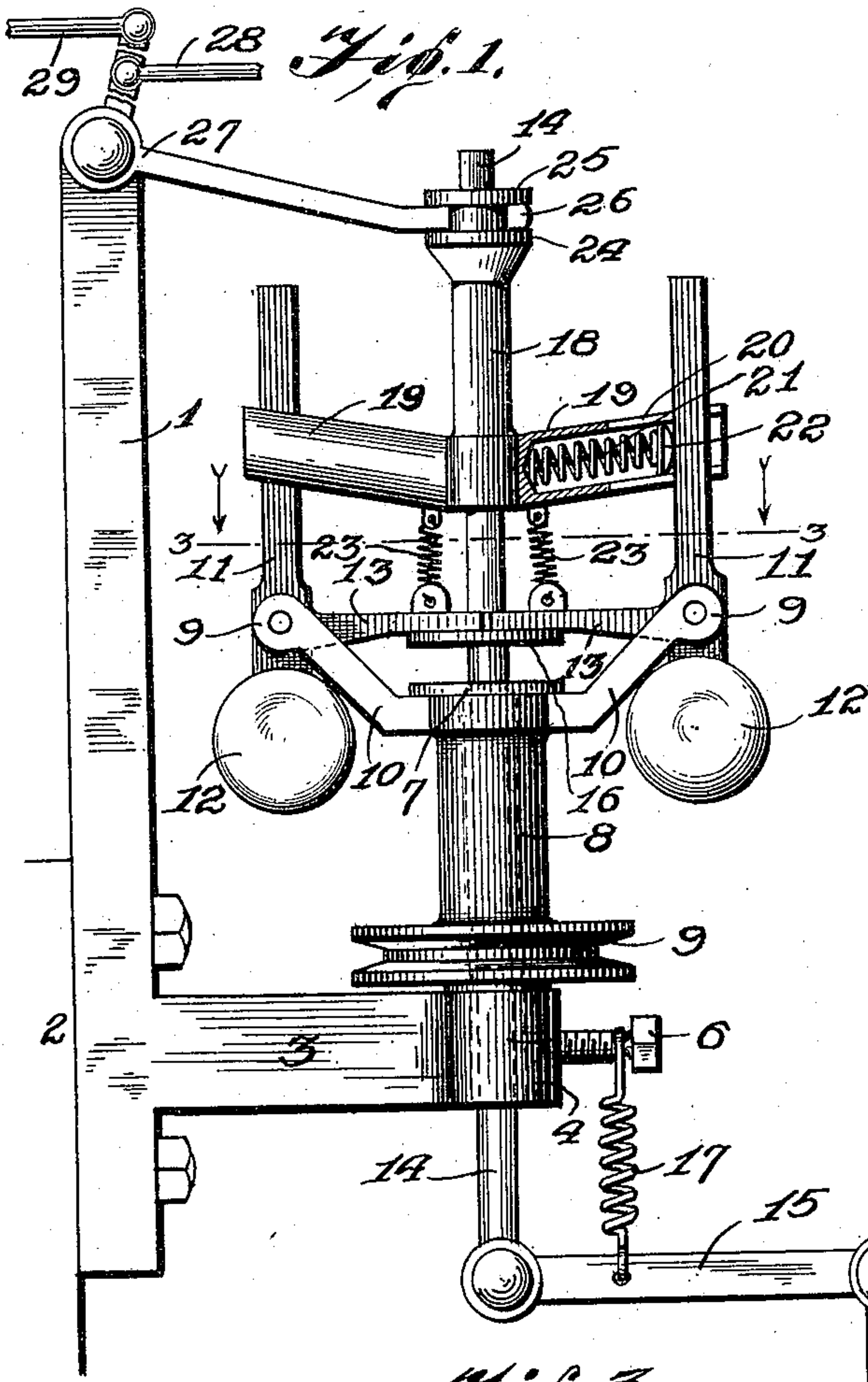


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GOVERNOR.
APPLICATION FILED JAN. 29, 1910.

Patented Jan. 17, 1911.

981,964.



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UNITED STATES PATENT OFFICE.

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GOVERNOR.

981,964.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed January 29, 1910. Serial No. 540,915.

To all whom it may concern:

Be it known that I, CHARLES E. WRIGHT, a citizen of the United States of America, residing at 607 Commercial street, Waterloo, in the county of Blackhawk and State of Iowa, have invented certain new and useful Improvements in Governors, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to the subject of controlling internal combustion engines, and the principal object of the same is to provide novel automatically-acting throttle-controlling mechanism, the tension of which is regulated by the advancing or retarding of the sparkers so that a constant and uniform speed of air engine is assured.

In carrying out the objects of the invention generally stated above, it will be understood, of course, that the essential features thereof are necessarily susceptible of changes in details and structural arrangements, one preferred and practical embodiment of which is shown in the accompanying drawings, wherein—

Figure 1 is a view in side elevation of the improved engine controlling device. Fig. 2 is a central vertical sectional view thereof. Fig. 3 is a horizontal sectional view taken on the line 3—3, Fig. 1. Fig. 4 is a top plan view of the movable sleeve and its guide arms.

Referring to said drawings by numerals, it will be observed that the improved engine controlling device is supported by an angular bracket composed of a vertical member 1 that is suitably connected to an engine frame 2, the outwardly-projecting horizontal member 3 of the bracket having its free end provided with an eye 4 in which a bearing sleeve 5 is rigidly but detachably held by means of a screw bolt 6. Said sleeve 5 projects well above its supporting eye and terminates in a flat, outstanding, annular flange 7. A governor frame 8 is rotatably mounted on said sleeve 5, said frame having a pulley 9 at its base that is adapted for a belt connection with the engine (not shown). At its upper end the frame 8 is provided with a pair of upwardly-projecting, outwardly-inclined supporting arms 10. Said arms 10 are oppositely-disposed and the free end of each is pivotally connected to a governor lever 11 equipped with the usual weight 12 at its lower end. Each lever 11 is provided

with a right-angularly arranged, inwardly-projecting tripping arm 13.

An elongated stem 14 is slidably mounted in bearing sleeve 5, said stem projecting well above and below said sleeve. The lower end of stem 14 is pivotally connected to a pivotally mounted rocking lever 15 that connects with the throttle of an engine (not shown). An annular outstanding flange 16 is carried by said stem 14 at a point above the upper end of sleeve 5, said flange 16 being engaged by the tripping arms 13 of governor levers 11, the arrangement being such that stem 14 is depressed by arms 13 when the weighted ends of levers 11 are thrown out by centrifugal force thereby rocking throttle lever 15 against the tension of spring 17 which connects said lever 15 to screw bolt 6 of supporting eye 4.

A sleeve 18 is slidably mounted on the upper portion of stem 14, said sleeve 18 being provided at its base with a pair of oppositely-disposed outwardly-projecting and preferably upwardly-inclined tubular arms 19, each arm being provided with a longitudinal guide slot 20 in its outer end through which the free upper portion of levers 11 project.

A spiral spring 21 is mounted in each arm 19, the outer end of said springs being equipped with an abutment 22 that is held in contact with levers 11 by the tension of springs 21, said springs, obviously, constantly exerting an outward pressure upon said levers, so that they will be rocked on the supports and cause arms 13 to release their pressure upon flange 16 of stem 14.

A spring connection 23 is provided between tubular arms 19 and tripping arms 13, said springs 23 tending to draw arms 13 from flange 16 and are intended primarily as an aid for springs 21 should said springs 21 become defective.

The upper end of sleeve 18 is provided with a pair of spaced apart collar flanges 24 and 25, which receive between them the hook end 26 of one member of a bell crank lever 27. Said bell crank lever is pivotally mounted in the upper end of the vertical member 1 of the supporting bracket. The other member of said bell crank lever has an intermediate pivotal connection with one end of a spark timer rod 28. A rod 29 has one end pivotally connected to the outer end of the member of the bell crank lever to which the timer rod is connected the other end of

said rod being suitably connected to the usual hand lever (not shown) for advancing or retarding the spark.

In operation, by manually pulling operating rod 29 to the left, bell crank lever 27 will be rocked and pull time rod 28 so that the spark will be advanced and simultaneously sleeve 18 will be lifted which, obviously, causes springs 21 to have a greater leverage upon levers 11 so that said levers are rocked to release arms 13 from stem 14, whereupon the pressure of spring 17 will rock lever 15 to open the throttle and simultaneously raise stem 14. With the parts in this position, it will be seen that if the speed of the engine exceeds the normal, the centrifugal force will throw the weighted ends of levers outward against the tension of springs 21, so that arms 13 will depress stem 14, and cause said stem to rock lever 15 and thereby close the throttle.

It will be seen from the foregoing that the described mechanism provides for the manual control of the sparker, which mechanism coöperates with the automatic throttle control whereby when the sparker is advanced, the throttle is automatically opened and the resistance to the automatic closing of the same by the centrifugal governor and the stem 14 is increased, and when the sparker is delayed, such resistance is decreased. The increasing or decreasing of the resistance to the automatic action of the governor is due to the longitudinal movements imparted to the sleeve 18 as the sparker rod is operated.

What I claim as my invention is:—

1. A device of the character described comprising a stem, a throttle lever connected thereto, a centrifugal governor for automatically actuating said stem, a sleeve slidable on said stem, guiding means carried thereby for yieldably opposing the operation of said governor, and means for actuating said sleeve to vary the resistance to the operation of said governor.

2. An engine controller comprising a stationary support, a governor frame rotatably mounted thereon, weighted levers pivotally connected to said support, a stem slidable

through said support and provided with a flange, means carried by said levers for engagement with said flange, a throttle lever pivotally connected to said stem, a sleeve slidable on said stem and provided with guide arms for said governor levers, a spring in each arm for opposing the operation of said levers, and means adapted to slide said sleeve on said stem to cause said springs to vary their resistance to said levers.

3. A device of the character described comprising a frame, a stem slidable therein, governor levers carried by said frame, a sleeve slidable on said stem, guide arms carried by said sleeve and through which said levers project, and means carried by said arms for opposing centrifugal movement of said levers.

4. A device of the character described comprising a frame, governor levers carried thereby, a stem slidable in said frame and controlled by said levers, a sleeve slidable on said stem and provided with guide arms for said levers, and a spring carried by each arm for opposing centrifugal movement of said levers.

5. A governor comprising a frame, a governor, levers pivotally connected thereto, a stem slidable through said frame, means carried by said levers for actuating said stem, a sleeve adjustable on said stem and provided with guides through which the governor levers project, and means in said guides for opposing moving of said levers.

6. A governor comprising a frame, weighted levers pivotally connected thereto, a stem slidable through said frame, means carried by said levers for sliding said stem, a sleeve adjustable on said stem, oppositely-arranged guides projecting from said sleeve and provided with slots through which the levers project, and springs in said guides for opposing movement of said levers.

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

CHARLES E. WRIGHT.

Witnesses:

LYMAN D. BEDFORD,
W. H. THROWER.