

No. 889,304.

PATENTED JUNE 2, 1908.

J. B. HAMRIC & D. C. CHITWOOD.
DEVICE FOR OVERCOMING DEAD CENTERS.

APPLICATION FILED OCT. 2, 1907.

2 SHEETS—SHEET 1.

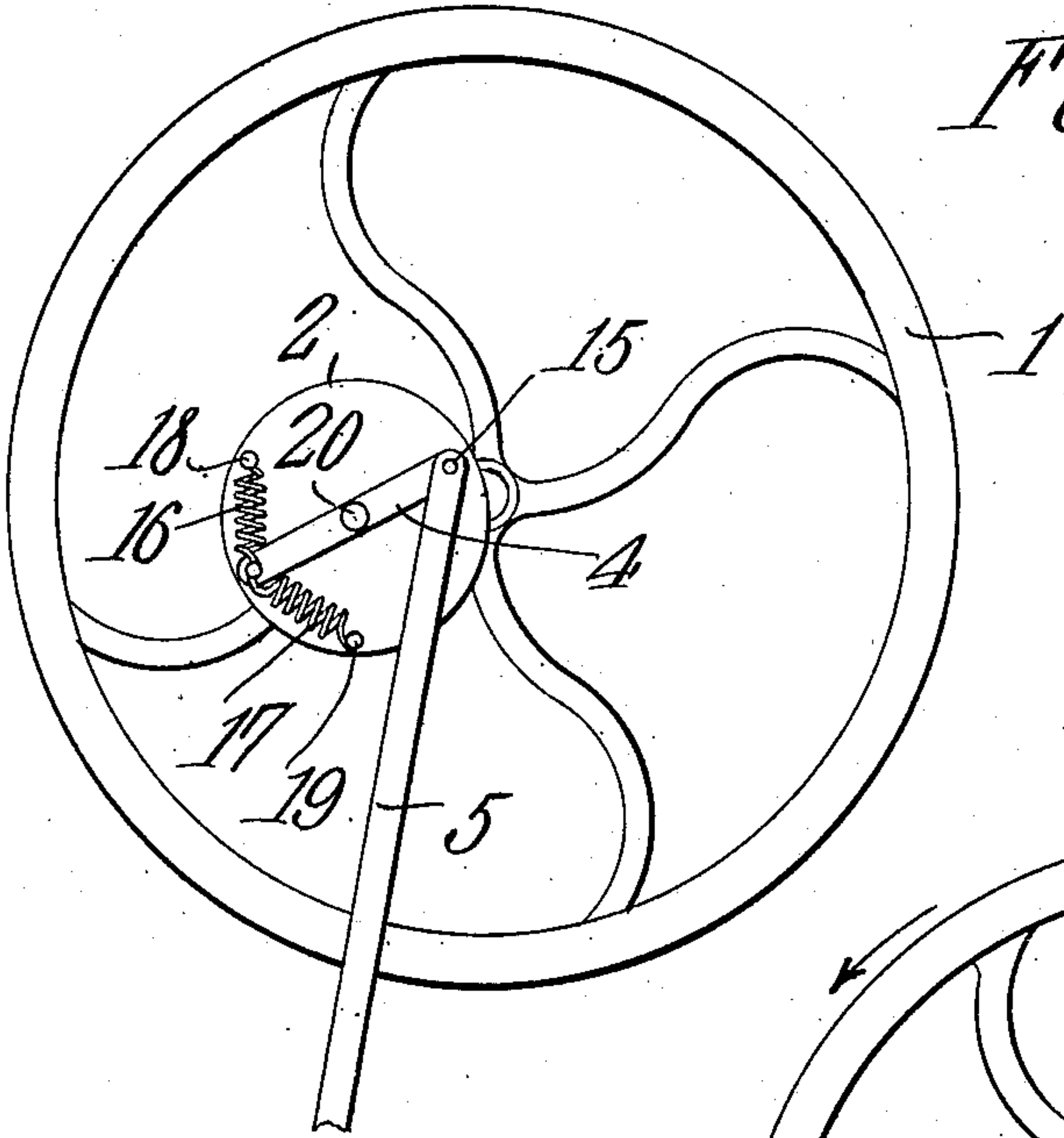


Fig. 3.

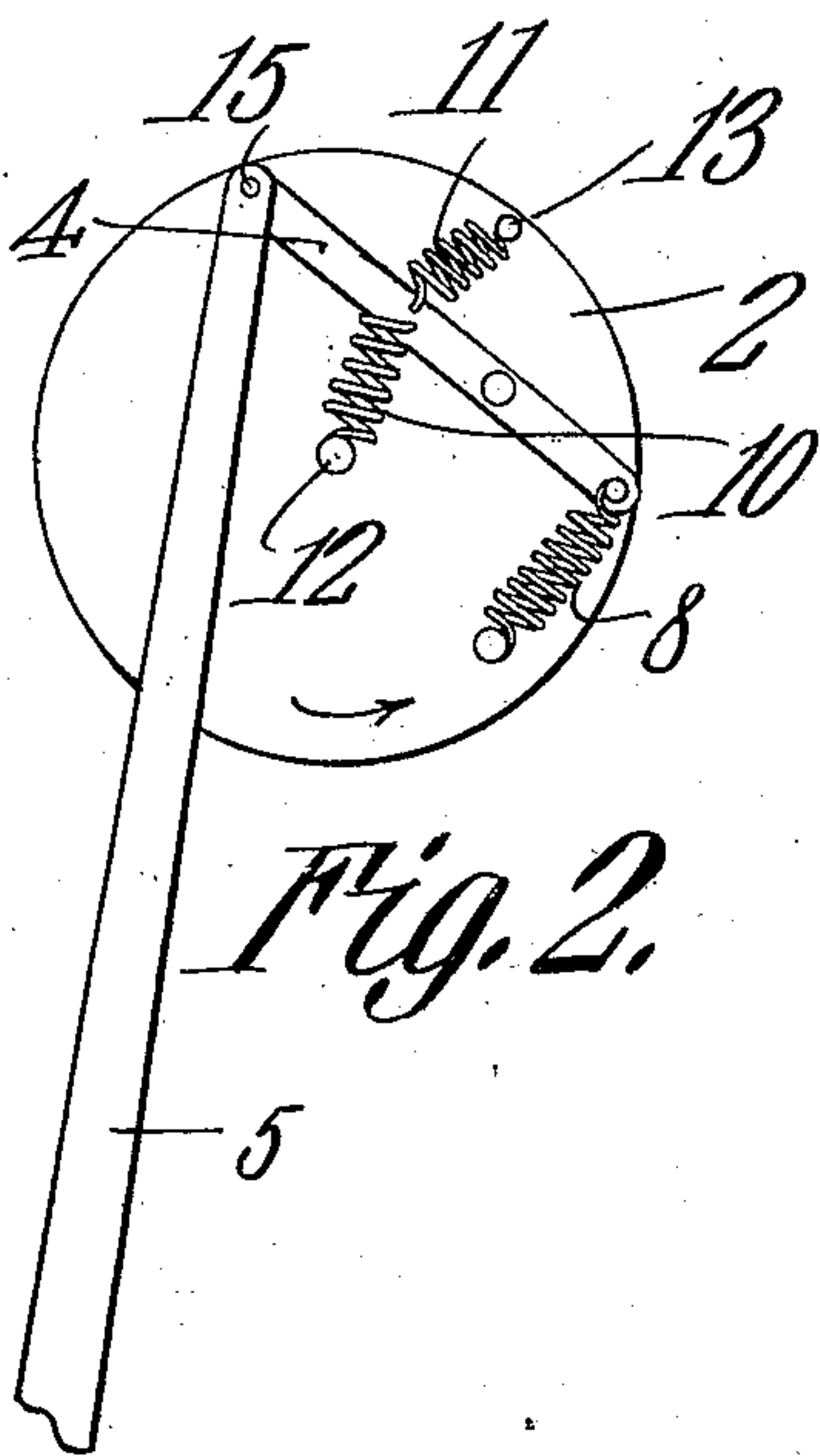


Fig. 2.

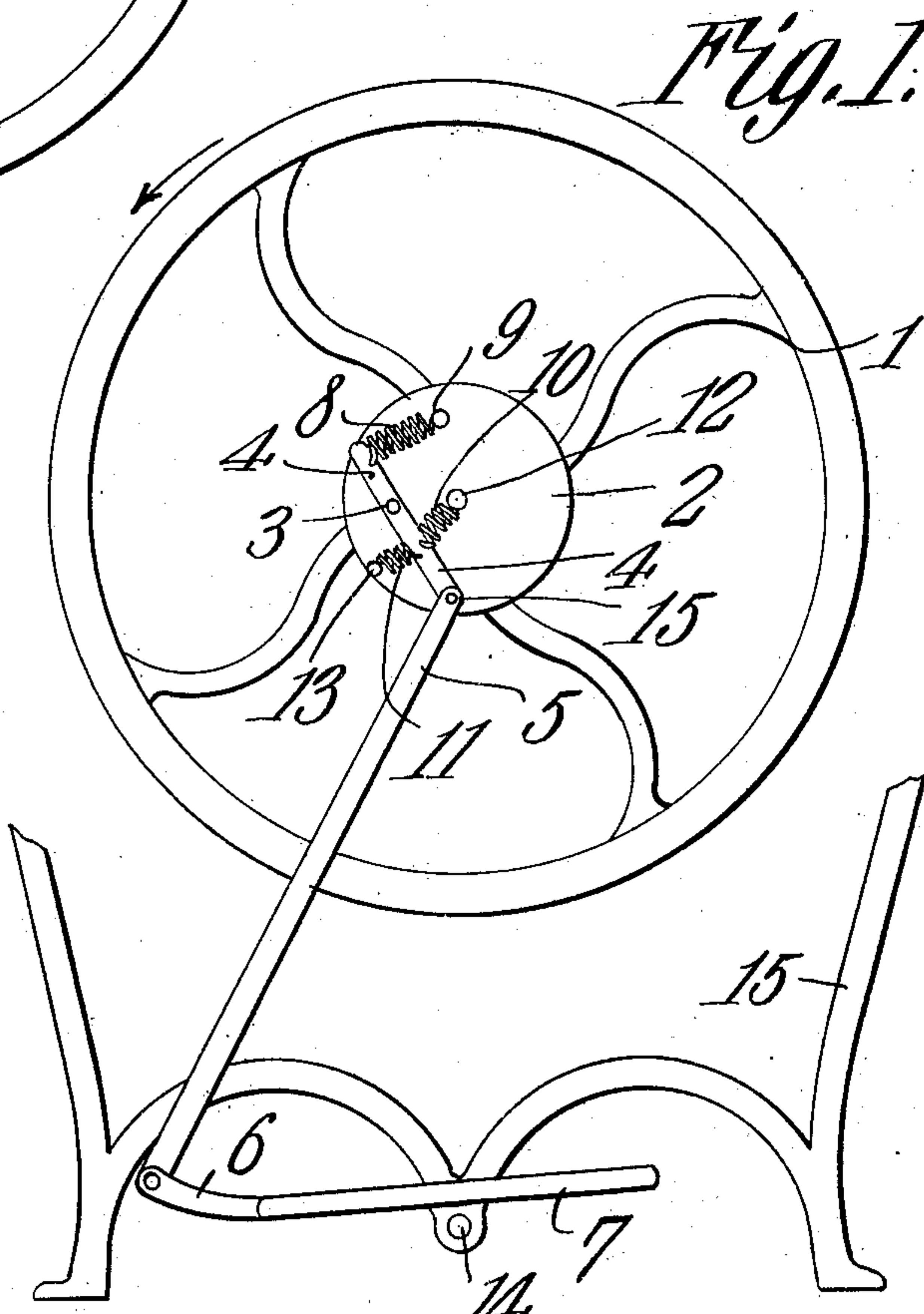


Fig. 1.

Witnesses

E. J. Hamric
R. M. Elliott

James B. Hamric ¹⁴ *And* *Daniel C. Chitwood* ^{Inventors}

By

C. A. Snowles

Attorneys

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Fig. 4.

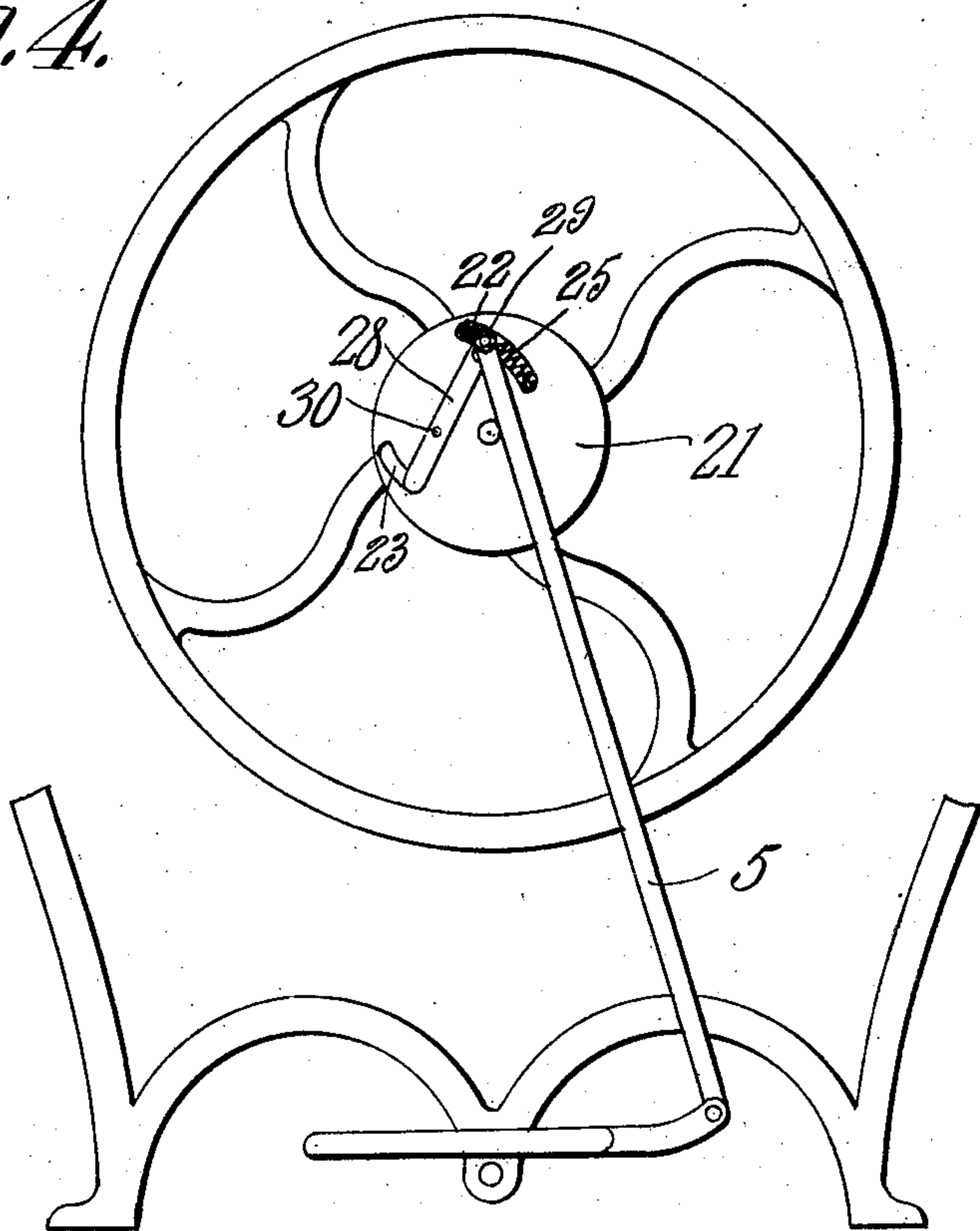
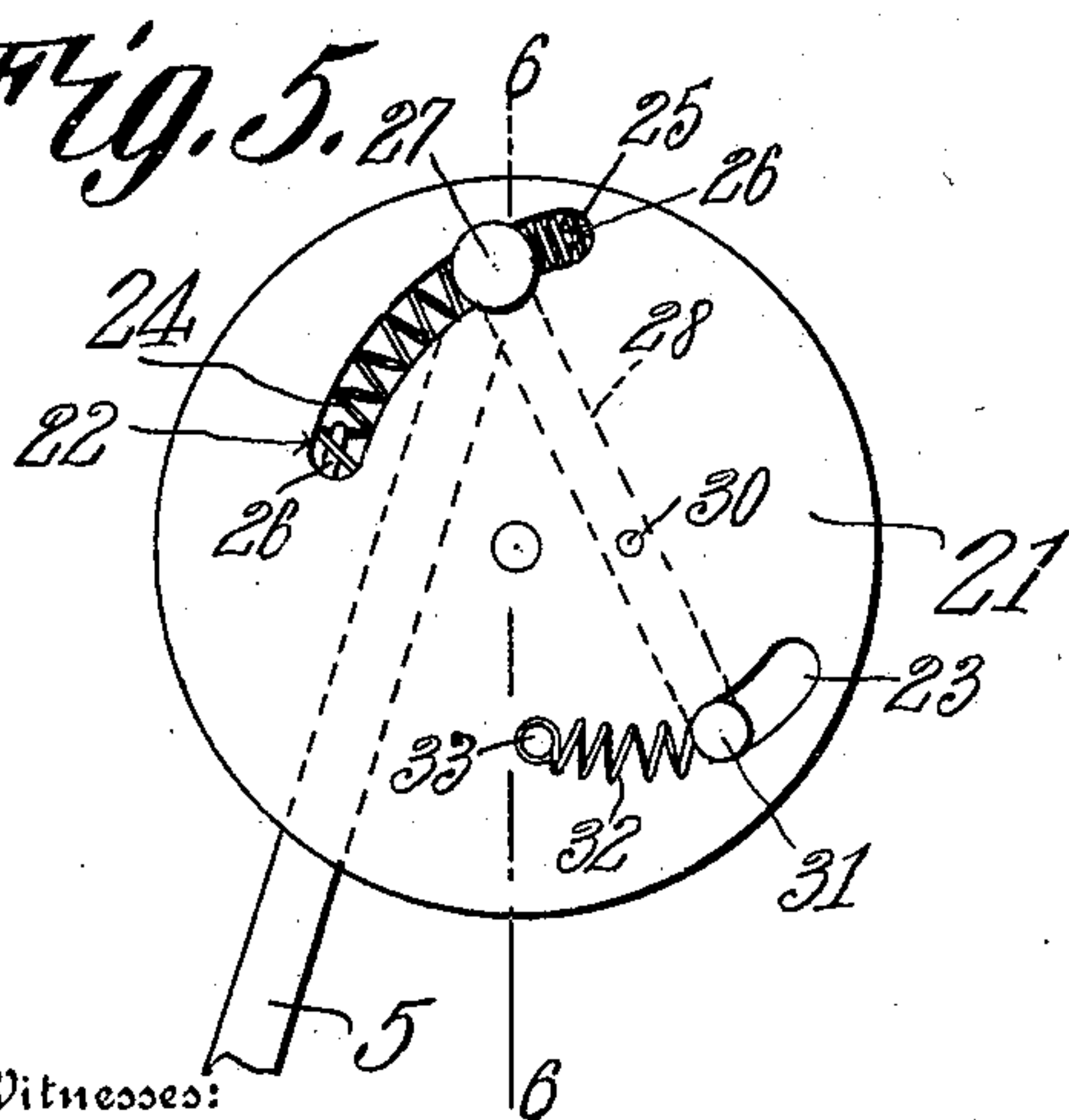


Fig. 5.



Witnesses:

E. J. Hamric
R. M. Elliott

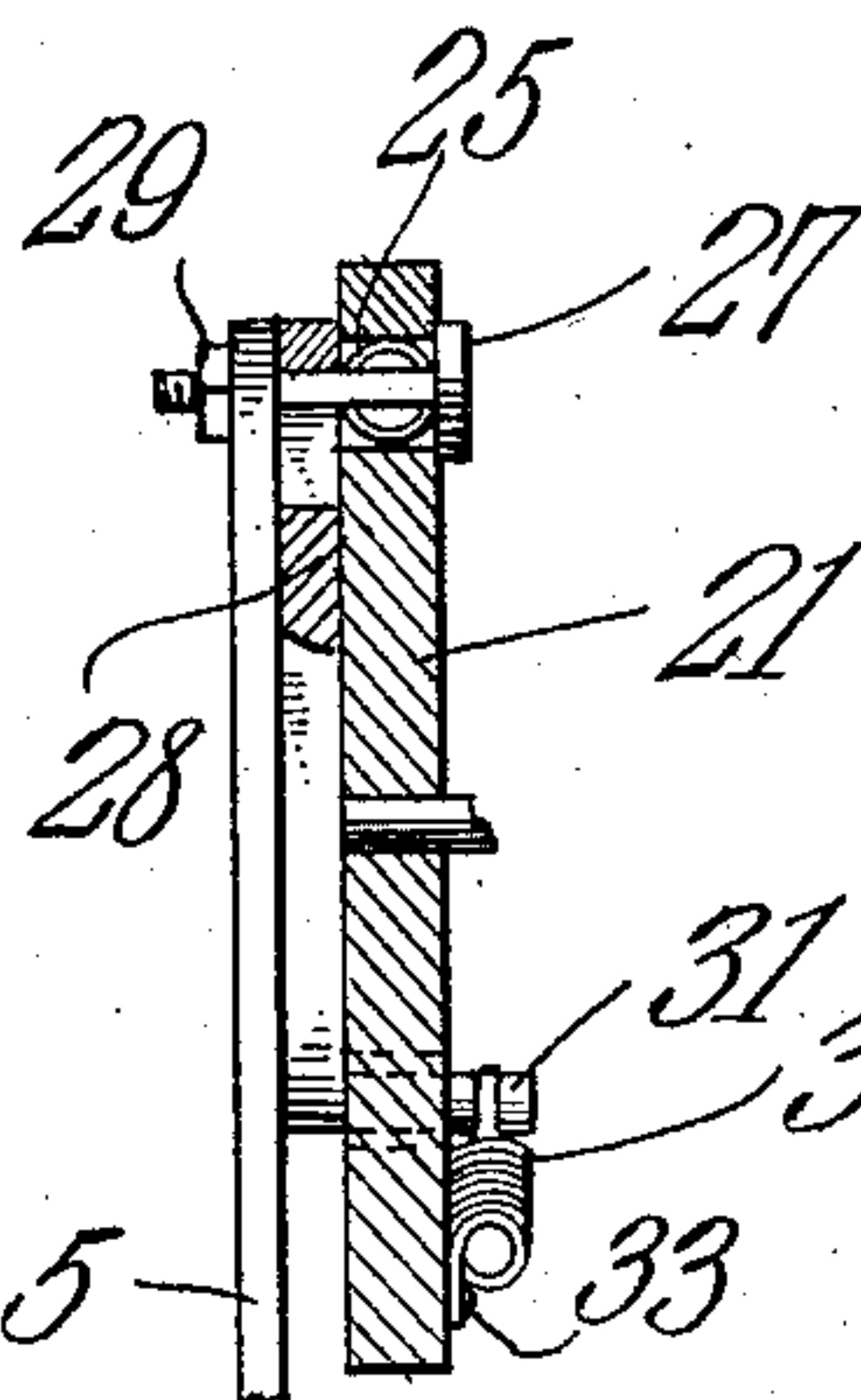


Fig. 6.

James B. Hamric and *Daniel C. Chitwood*
Inventors.
By *C. A. Snow & Co.*
Attorneys.

UNITED STATES PATENT OFFICE.

JAMES B. HAMRIC AND DANIEL C. CHITWOOD, OF COLLINSVILLE, ALABAMA.

DEVICE FOR OVERCOMING DEAD-CENTERS.

No. 889,304.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed October 2, 1907. Serial No. 395,603.

To all whom it may concern:

Be it known that we, JAMES B. HAMRIC and DANIEL C. CHITWOOD, citizens of the United States, residing at Collinsville, in the county of Dekalb and State of Alabama, have invented a new and useful Device for Overcoming Dead-Centers, of which the following is a specification.

This invention relates to devices for overcoming dead centers.

The object of the invention is to provide a simple and efficient device of this character which may readily be attached to a fly wheel either concentric with the rim thereof or eccentric thereto, and which shall be positive in preventing the wheel from stopping on a dead center when rotated in either direction.

With the above and other objects in view as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of devices for overcoming dead centers, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification and in which like characters of reference indicate corresponding parts,—Figure 1 is a view in front elevation exhibiting the position of the parts when the toe of the treadle is down. Fig. 2 is a similar view exhibiting the position of the parts when a toe of the treadle is up. Fig. 3 is a similar view of a slightly modified form of the device. Fig. 4 is a view similar to Fig. 1 of a slightly modified form of the invention. Fig. 5 is a view in rear elevation of a portion of the device shown in Fig. 4. Fig. 6 is a vertical sectional view taken on the line 6—6 of Fig. 5.

Referring to the drawings and to Figs. 1 and 2 thereof especially, 1 designates a fly wheel of any preferred style, to the hub of which is secured a disk 2. Pivoted intermediate of its ends by a pin 3, and to an eccentric portion of the disk is a lever 4 with one end of which is connected the upper end of a pitman 5, the lower end of which is connected with a toe 6 of a treadle 7 as usual. To the other end of the lever 4 is connected one end of a coiled spring 8, the other end of which is secured at 9 to the disk. Intermediate of the fulcrum pin 3 and the end of the lever that is attached to the pitman are secured two coiled springs 10 and 11, the spring 10 being secured to the center of the disk at 12 and the spring 11 being secured

near the periphery of the disk at 13. The treadle 7 is fulcrumed at 14 upon a bar carried by a suitable frame partly indicated by 15.

When the parts of the device are in position shown in Fig. 1, upon downward pressure being applied to the heel of the treadle the pitman will be thrust upward, thereby moving the lower end of the lever 4 toward the center of the disk with the result that the springs 8 and 11 are stretched and the spring 10 is compressed and this will throw the pin 15 that connects the lever and pitman from one side of the dead center of the wheel, and this may be started to rotate in the direction indicated by the arrow. When half a revolution is completed the heel of the treadle is depressed, whereupon the springs 8 and 11 will be stretched and the spring 10 compressed, whereby the pin 15 will be thrown past dead center and thus continue the rotation of the wheel. By compressing the spring 10 after the wheel has passed dead center the lever 4 will be forced into its normal position and thus be in readiness again to be shifted when the next dead center is approached.

In the form of the invention shown in Fig. 3 the springs 10 and 11 are dispensed with and two springs 16 and 17 are attached to the free end of the lever 4 and to disk 2 at 18 and 19. The disk 2 will be secured to the crank pin 20, and by this disposition of the disk, the employment of intermediate springs is rendered unnecessary. In the operation of this form of the invention should the wheel be approaching dead center, downward pressure upon the treadle will cause the lever 4 to rock on the crank pin, whereupon the spring 17 will be stretched and the spring 16 compressed, thereby throwing the pin 15 beyond dead center and securing the object sought.

In the form of the invention shown in Figs. 4, 5 and 6, a disk 21 is provided with two slots 22 and 23, of which the former is the longer and the centers of curvature of which are eccentric to the axis of the disk. Arranged within the slot 22 are two coiled springs 24 and 25 that are held in place within the slot by pins or studs 26. The slot 22 is engaged by a headed pin 27 that projects beyond the front face of the disk and is secured to and constitutes an extension of a lever 28 corresponding to the lever 4 in Figs. 1, 2 and 3, the outer portion of the pin being engaged by the pitman 5 as above de-

scribed. In order to hold the lever 28 and pitman 5 assembled with the pin 27, a nut 29 is provided, as clearly shown in Fig. 6.

The lever 28 is fulcrumed at 30 to the disk, and carries at its lower end a pin or extension 31 that projects through the slot 23 to the rear side of the disk, said projecting end having connected with it one terminal of a coiled spring 32, the other terminal of which is secured at 33 to the disk. The operation of this form of device is identically the same as that before described, the only difference being in the arrangement of the springs that resist the movement of the lever 28. By disposing these springs within the slot 22, and on the rear side of the disk, a neater appearing arrangement is secured, and one that will permit of the lever 28 working close against the disk and thus being held in more stable relation thereto than when the arrangement shown in Figs. 1, 2 and 3 is adopted, although the latter is thoroughly efficient in every particular.

From the foregoing description it will be seen that while the improvements herein defined are simple in character they will be thoroughly efficient for the purposes designed and may readily be applied on an ordinary sewing machine or in a jeweler's lathe wheel without necessitating any change in its structural arrangement.

What is claimed is:—

1. The combination with a fly wheel of a disk, a lever fulcrumed thereon, a pitman connected with the lever, and pull and push springs connected with the disk and with the lever.

2. The combination with a fly wheel, of a disk secured thereto, a lever fulcrumed intermediate of its ends upon the disk, a pitman connected with one end of the lever, and springs for returning the lever to its normal position after having been shifted by movement of the pitman.

3. The combination with a fly wheel, of a disk provided with two oppositely disposed slots the centers of curvature of which are eccentric to the axis of the disk, a lever fulcrumed upon the disk having extensions projecting through the slots, a pair of springs arranged in one of the slots to oppose the motion of one of the extensions, a spring upon the disk engaging with the other extension of the lever, and a pitman connected with the lever.

4. The combination with a fly wheel, of a disk provided with two oppositely disposed slots the centers of curvature of which are eccentric to the axis of the disk, a lever fulcrumed upon the disk having extensions projecting through the slots, a pair of springs arranged in one of the slots to oppose the motion of one of the extensions, a spring upon the rear of the disk engaging with the other extension of the lever, and a pitman connected with the lever.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

JAMES B. HAMRIC.

DANIEL C. CHITWOOD.

Witnesses:

BIRT REED,

GLENN WILLIAMS.