

No. 774,011.

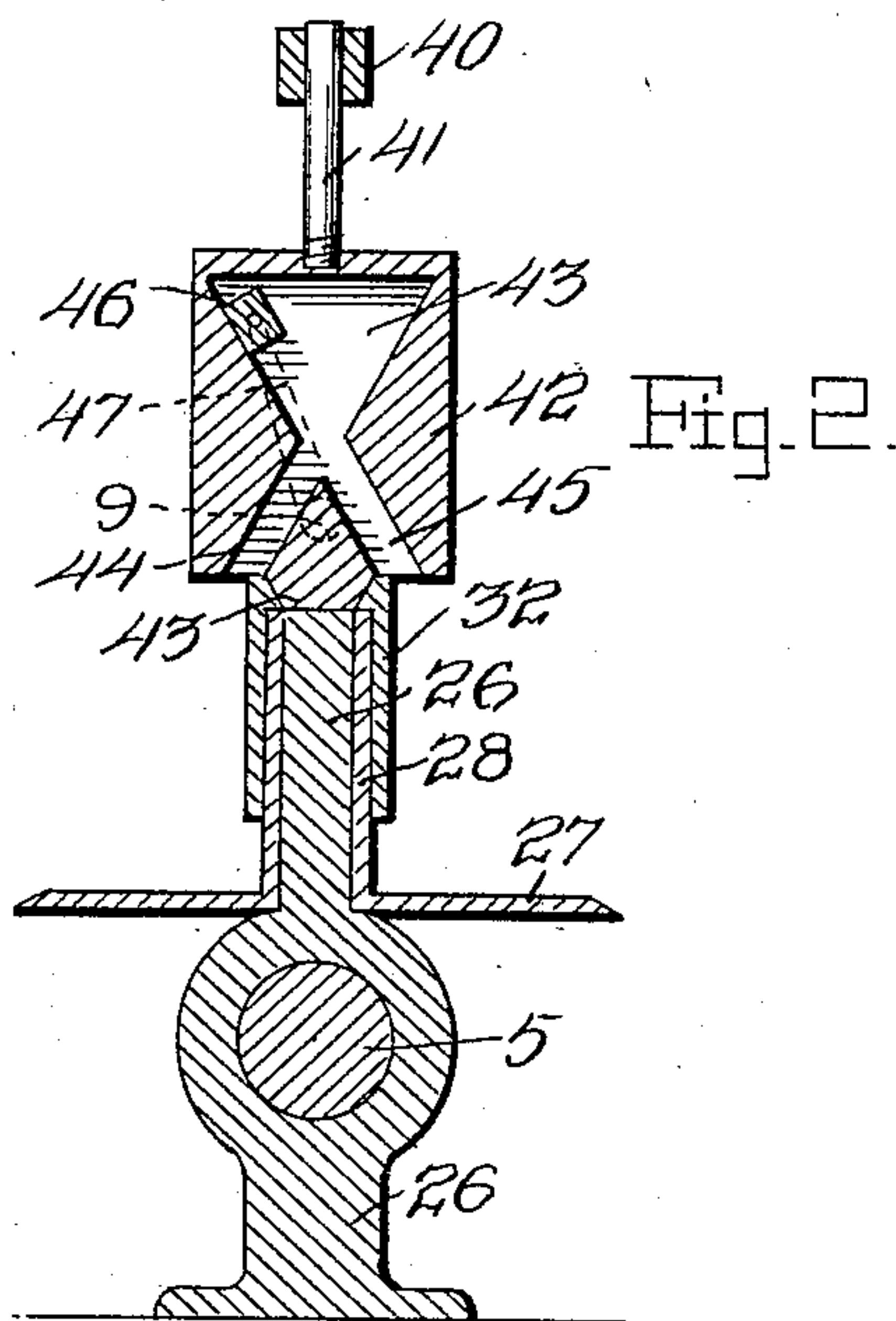
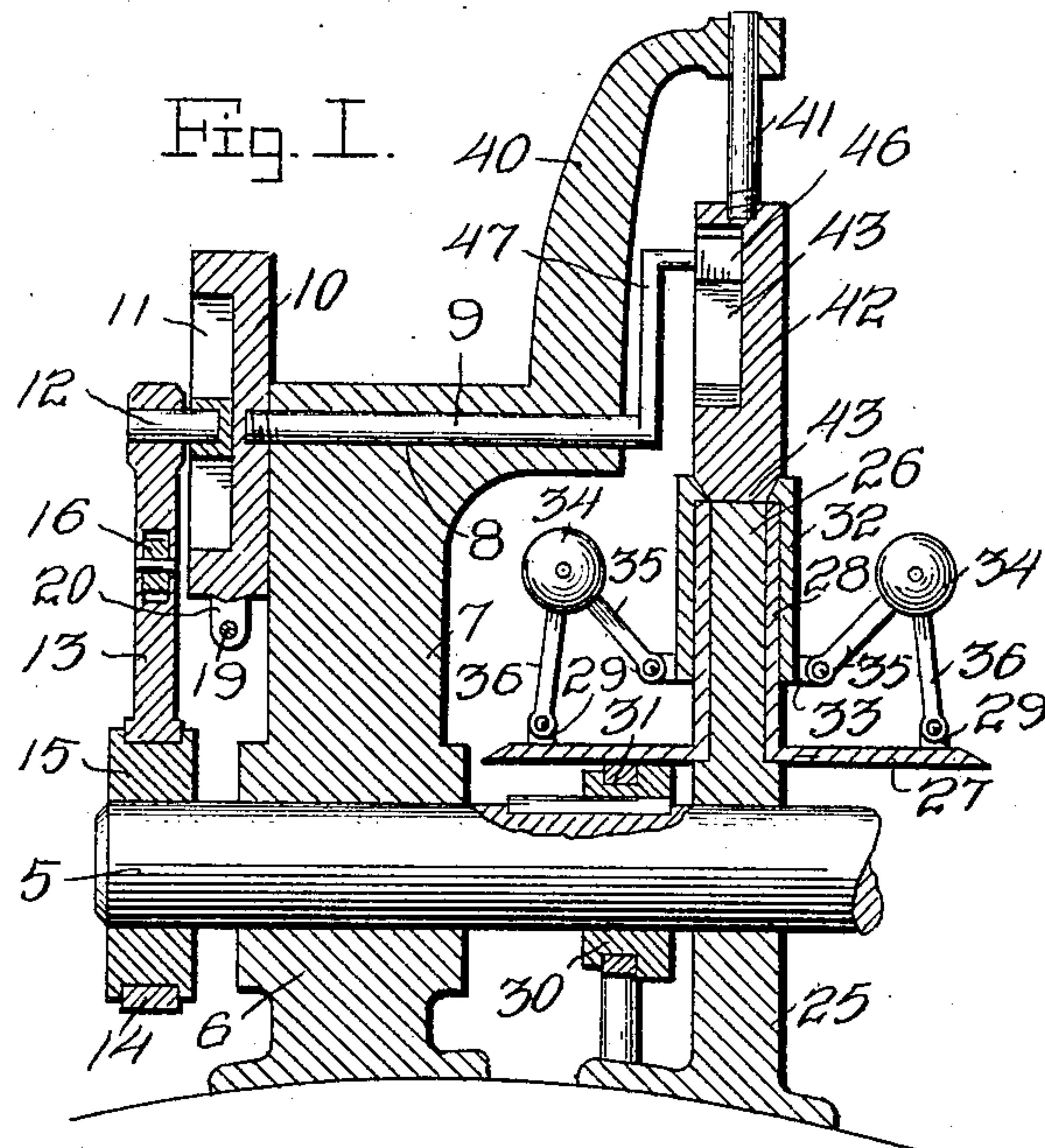
PATENTED NOV. 1, 1904.

F. WEDRICK.
GOVERNOR FOR STEAM ENGINES.

APPLICATION FILED MAY 25, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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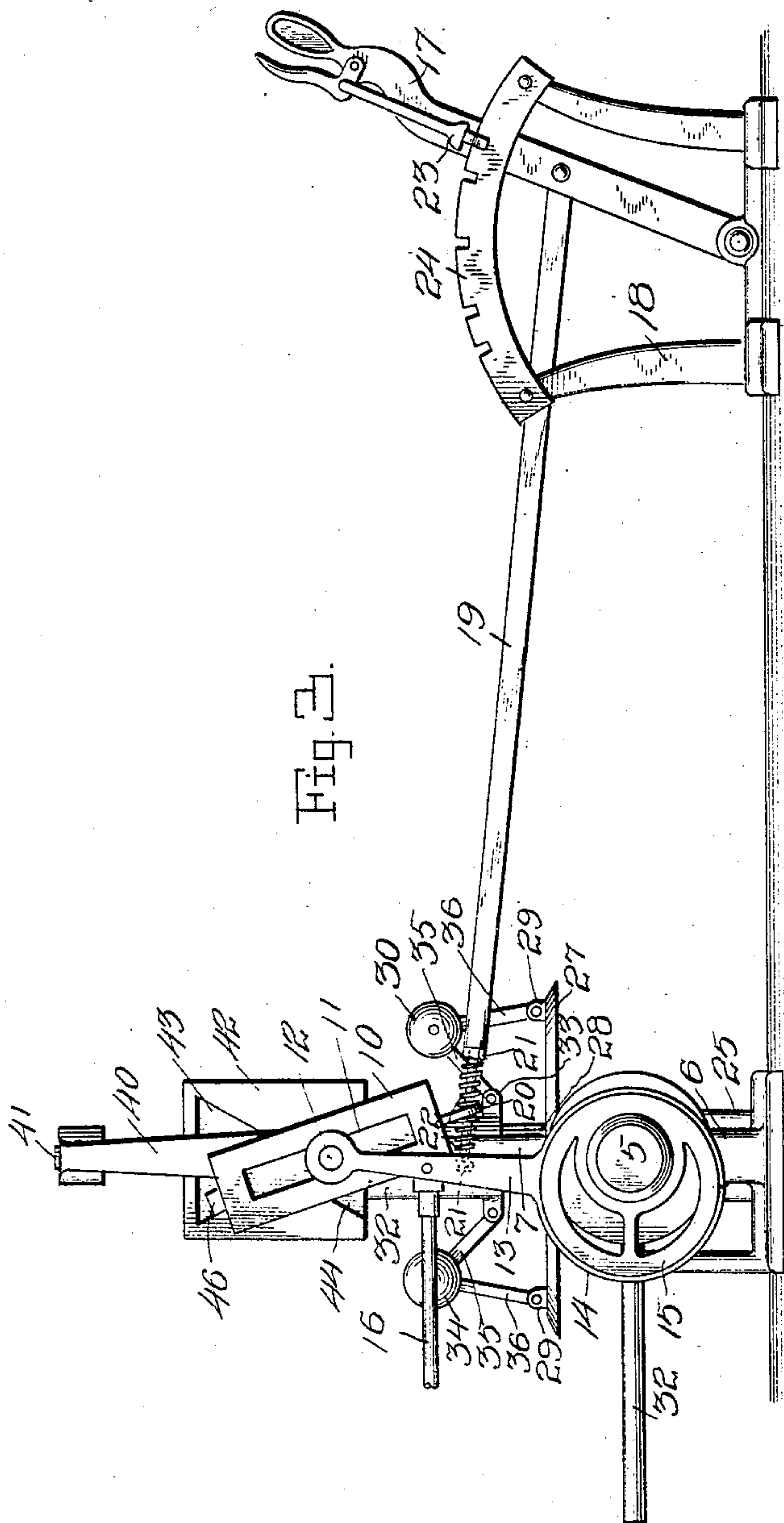


Fig. 3.

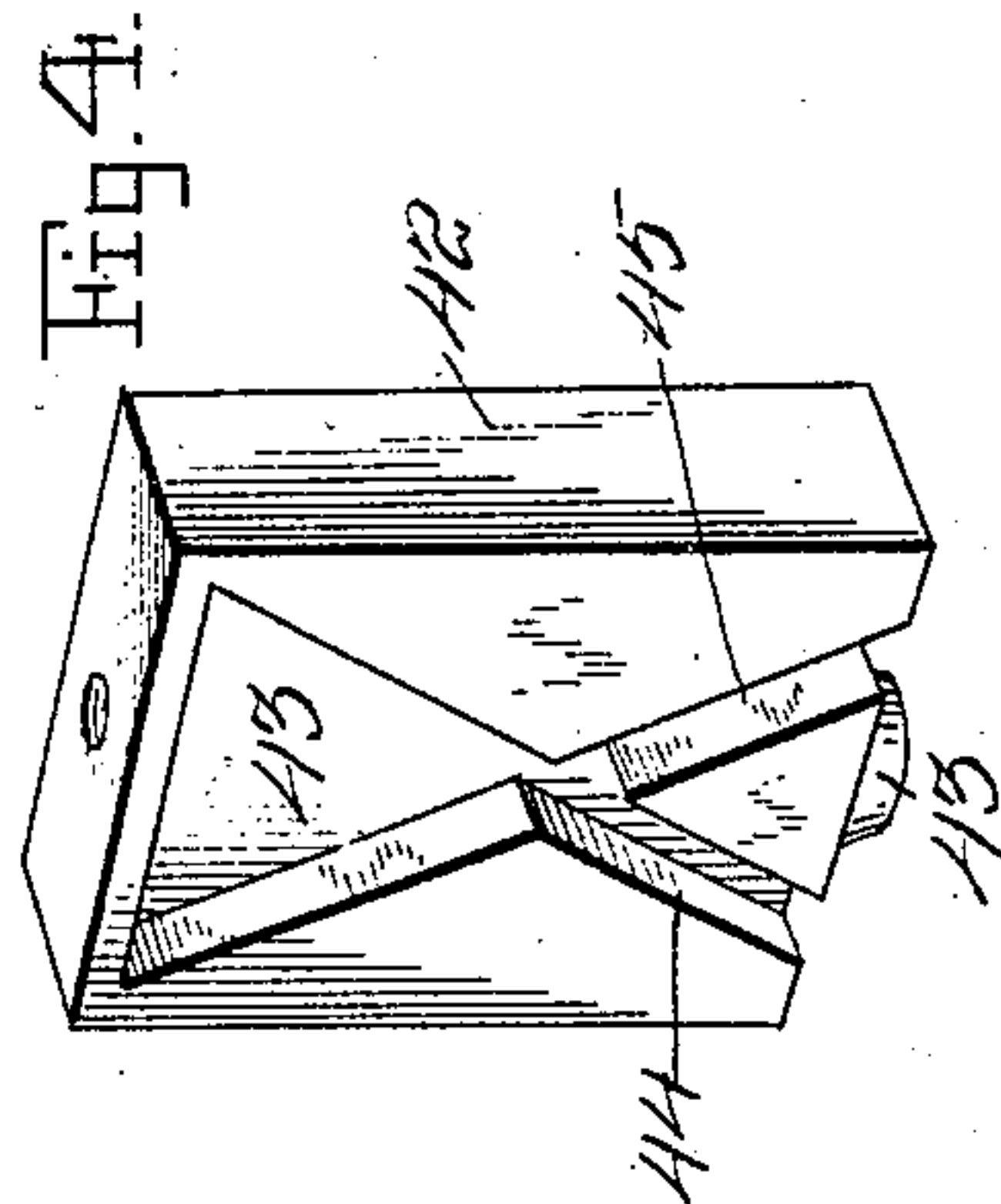


Fig. 4.

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UNITED STATES PATENT OFFICE.

FELIX WEDRICK, OF PULASKI, IOWA.

GOVERNOR FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 774,011, dated November 1, 1904.

Application filed May 25, 1904. Serial No. 209,733. (No model.)

To all whom it may concern:

Be it known that I, FELIX WEDRICK, a citizen of Switzerland, residing at Pulaski, in the county of Davis, State of Iowa, have invented certain new and useful Improvements in Governors for Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to governors for steam-engines, and more particularly to that class of steam-engines including an oscillating link which is shifted rotatably or oscillated to vary the lead and to reverse.

The object of the invention is to provide a governor mechanism so constructed and arranged as to automatically oscillate the link.

Other objects and advantages of the invention have reference to details, as will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a vertical section through the governor mechanism and the parts of the link-and-eccentric mechanism with which it is connected. Fig. 2 is a section through the governor mechanism at right angles to Fig. 1. Fig. 3 is an elevation of the link and eccentric with the means for shifting the link manually. Fig. 4 is a detail view of the grooved member of the governor.

Referring now to the drawings there is shown the main shaft or crank-shaft 5 of an engine mounted in a pillow-block 6, from which extends an upright 7, having a bearing 8 at its upper end, in which is journaled a rock-shaft 9, having fixed to one end and projecting at right angles thereto a link 10, in which is formed a slot 11. The slot 11 is at right angles to the axis of the shaft 9 and extends on both sides thereof, and in the slot 11 is mounted a cross-head having a pin 12, with which is connected the eccentric-rod 13, which extends from the strap 14 on an eccentric 15, which is secured to the shaft 5. A valve-rod 16 is pivotally connected with the arm 13, and the block 10 is adapted to be oscillated, so that the slot 11 may have a greater or lesser

inclination at either side of the vertical, it being understood that by thus shifting the block the eccentric-rod may be caused to pull or push the valve-rod 16, depending upon whether the upper end of the slot 11 is at one side or the other of the vertical position of the slot, thus causing the valve to operate to so admit steam that the engine will be operated in one direction or the other. To thus shift the block 10, a hand-lever 17 is mounted in a stand 18, and connected thereto is a rod 19, which passes slidably through a perforated ear 20, projecting longitudinally from the lower end of the block. Stop-nuts 21 are engaged with the rod 19 at opposite sides of the ear 20, and upon the rod 19 between said ear and stop-nuts are arranged helical springs 22, so that as the lever 17 is shifted either of the springs may be caused to press against the ear and shift the block. A locking-bolt 23 is provided for the lever 17 and coöperates with a notched segment 24 to hold the lever at different points of its adjustment.

The governor mechanism which is employed in connection with the above-described construction comprises a pillow-block 25, in which the shaft 5 is journaled and from which projects a vertical stub-shaft 26, on which is rotatably mounted a friction-disk 27, having a vertically-extended hub or sleeve 28, which fits snugly and rotatably upon the stub-shaft and is provided with ears 29. Splined upon the shaft 5 is a friction-wheel 30, upon which the disk 27 rests, the hub of the wheel 30 having a yoke 31 engaged therewith and carried by a lever 32, through the medium of which the friction-wheel may be adjusted radially of the disk, so that the latter will be rotated at a greater or lesser speed from the shaft 5. A sleeve 32 is slidably engaged over the hub 28 and has ears 33 at its lower end. Ballast-balls 34 are provided with links 35 and 36, that are connected pivotally with the ears 33 and 29, respectively, these balls and links being arranged, as illustrated, so that as the disk 27 is rotated they will fly outwardly and raise the sleeve 32.

From the rock-shaft bearing 8 extends an arm 40, to which is connected a vertical guide-rail 41, having a block slidably engaged there-

with for vertical movement, the block 42 having a stem 43 at its lower end, which is disposed within the upper end of the sleeve 32, in which position it is held rotatably, so that
5 as the sleeve rises under the influence of the ballast-balls the block will rise. In one face of the block 42 is formed a substantially triangular recess 43, the sides of which converge downwardly and from the bottom of which
10 recess extend passages 44 and 45, which intersect. The lower wall of the passage 44 is in the same plane as one side of the recess 43, while the lower wall of the passage 45 is in the same plane with the other side of said recess.
15 In the recess 43 is disposed a head 46, carried by a crank-arm 47 at the end of the rock-shaft 9. When then the block 42 is raised by the ballast-balls flying outwardly under the influence of increased speed of the
20 engine, the head 46 will be pressed laterally to rock the shaft 9 and decrease the throw of the valve-rod 16. When the block 10 is shifted from one extreme position to the other, the head 46 is thrown from the position illustrated
25 against the opposite wall of the recess 42.

With the above construction it will be understood that the block 10 will be rocked in one direction or the other automatically to maintain a substantially even speed of the
30 engine.

It will be understood that in practice modifications of the specific construction shown may be made and any suitable materials and proportions may be used for the various parts

without departing from the spirit of the invention. 35

What is claimed is—

1. In an engine, the combination with a valve mechanism including a shiftable link, of a governor comprising a reciprocatory
40 block having a recess therein provided with convergent sides, a head disposed in the recess and adapted to lie against either side thereof corresponding to the position of the
45 link, connections between the head and the link for shifting the latter, and centrifugal mechanism for reciprocating the block.

2. A governor comprising a friction-disk, a drive friction-pulley disposed against the disk and shiftable radially thereof, said disk
50 having an elongated hub and having ears, a sleeve slidably mounted upon the hub and provided with ears, a centrifugal mechanism connecting the ears of the disk and sleeve for moving the sleeve on the hub, a block con-
55 nected with and movable with the sleeve, said block having a guide therein at an angle to the direction of movement of the block, a head slidably mounted in the guide, and means for connecting said head with the link of an
60 engine.

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

FELIX WEDRICK.

Witnesses:

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