

No. 881,748.

PATENTED MAR. 10, 1908.

C. C. VINSON.
VALVE GEAR.

APPLICATION FILED NOV. 14, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

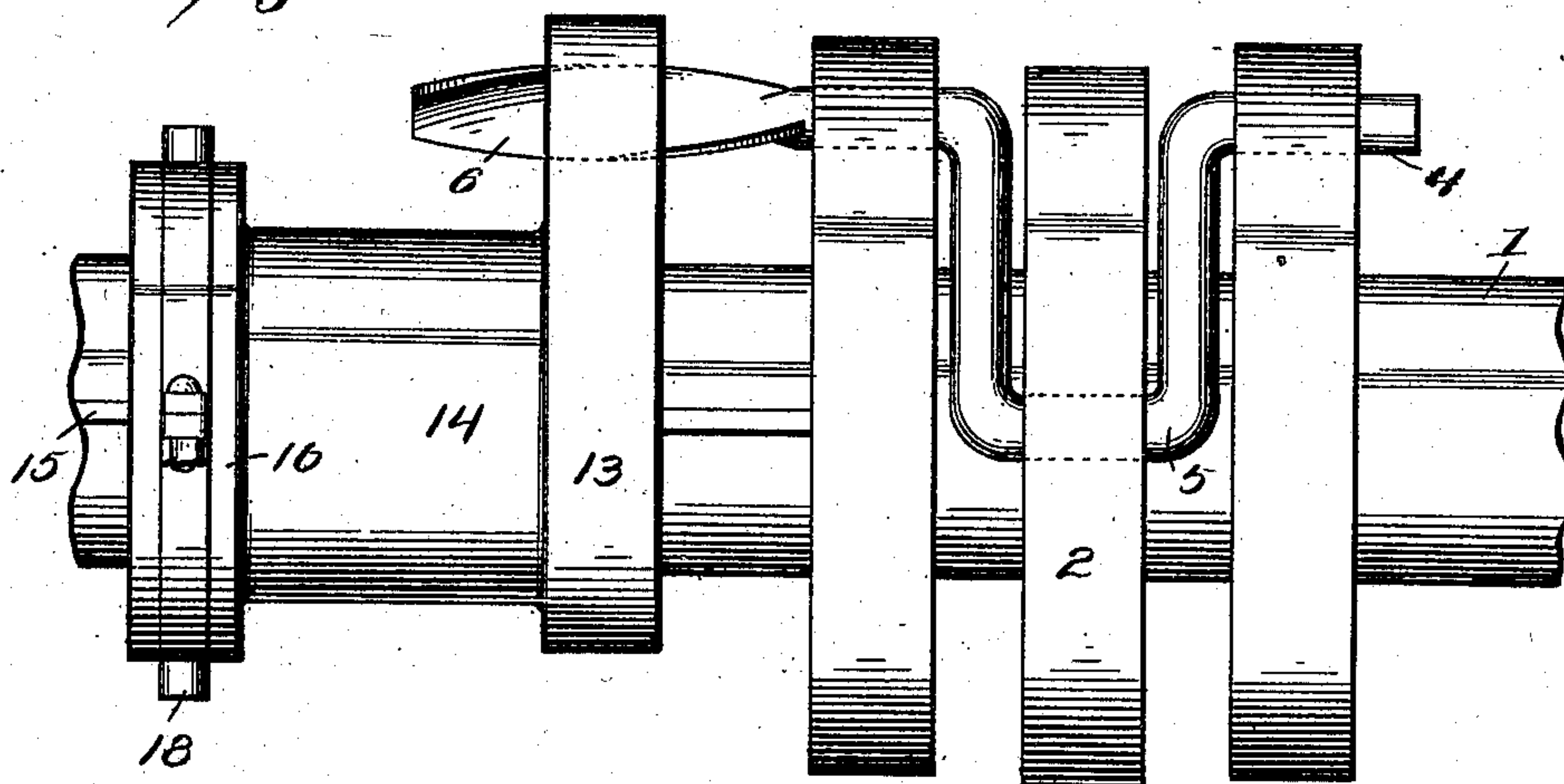
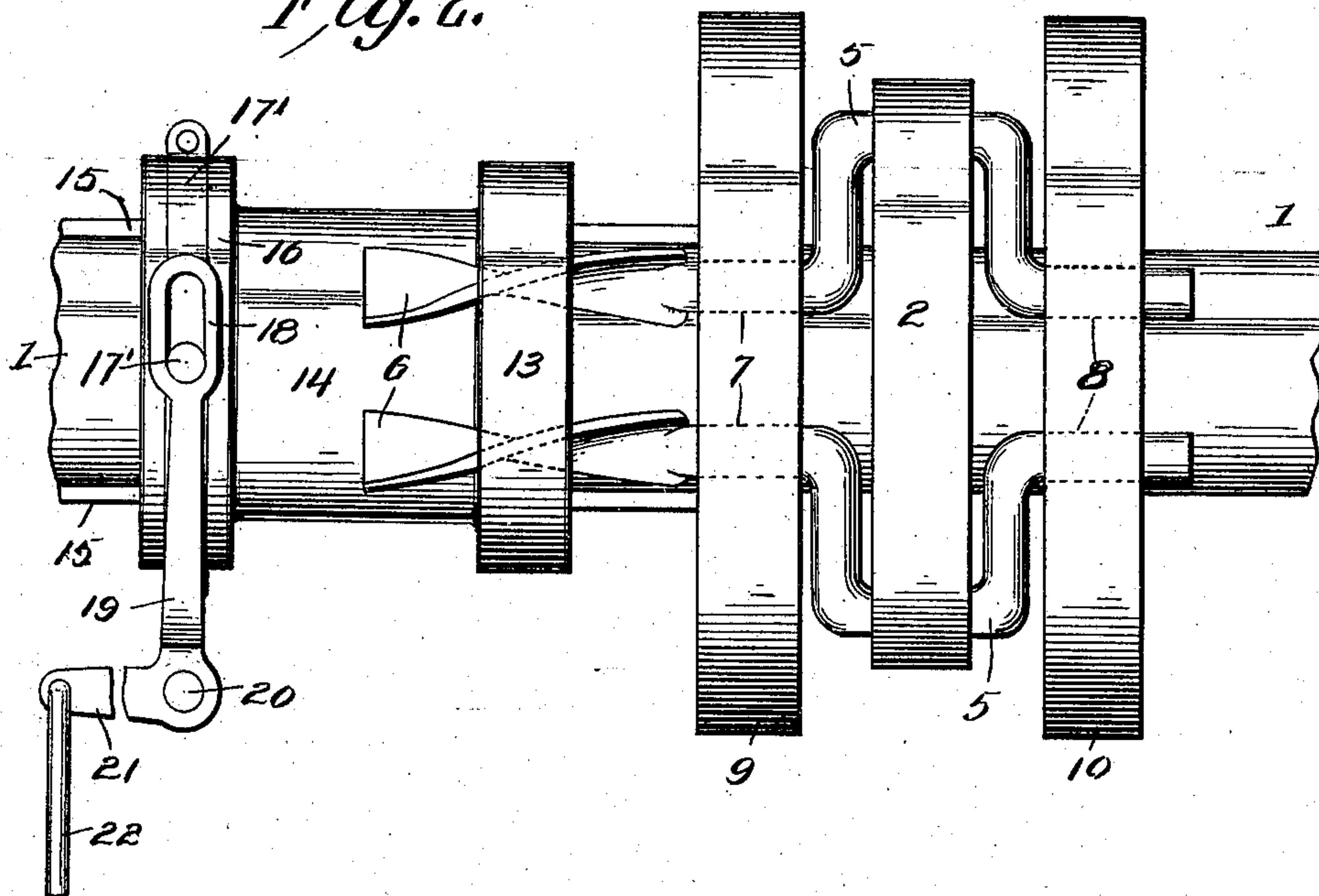


Fig. 2.



Witnesses
C. E. Smith.
R. M. Smith.

Inventor
Clyde C. Vinson.
By *Victor J. Evans*
Attorney

No. 881,748.

PATENTED MAR. 10, 1908.

C. C. VINSON.
VALVE GEAR.

APPLICATION FILED NOV. 14, 1907.

2 SHEETS—SHEET 2.

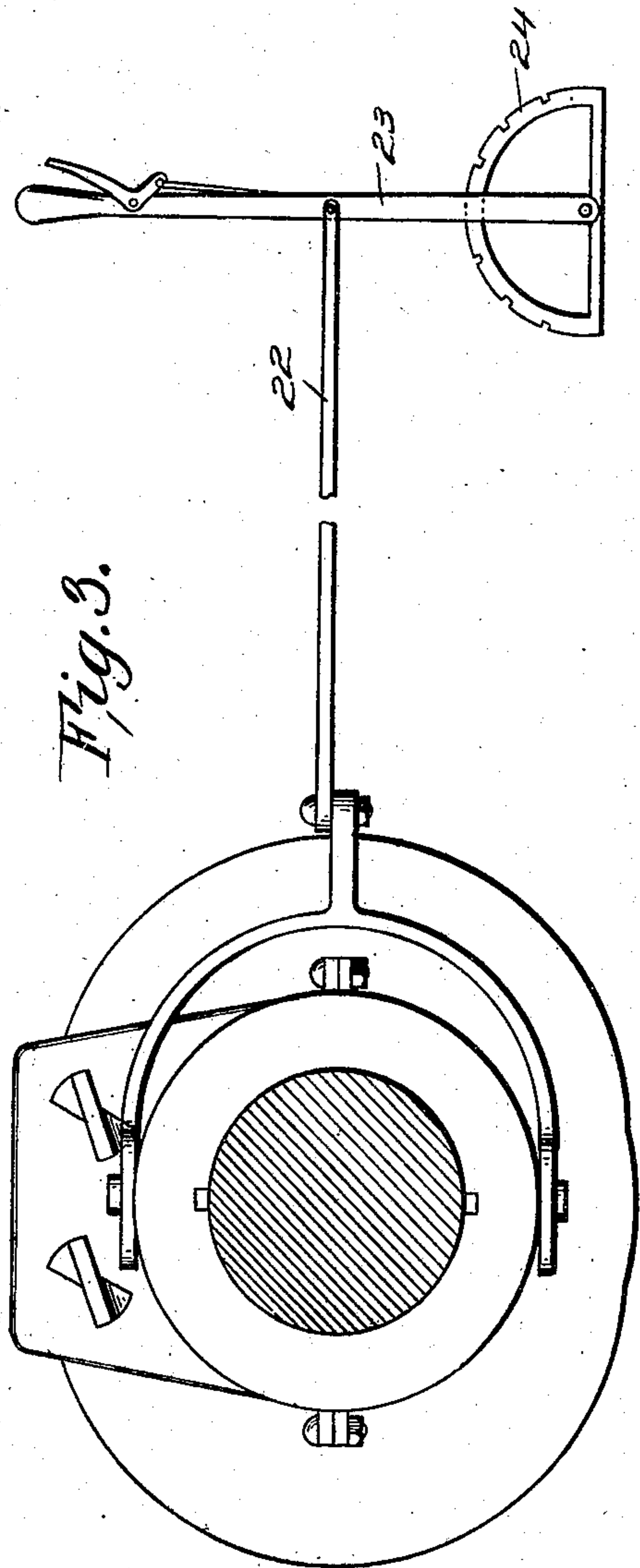


Fig. 3.

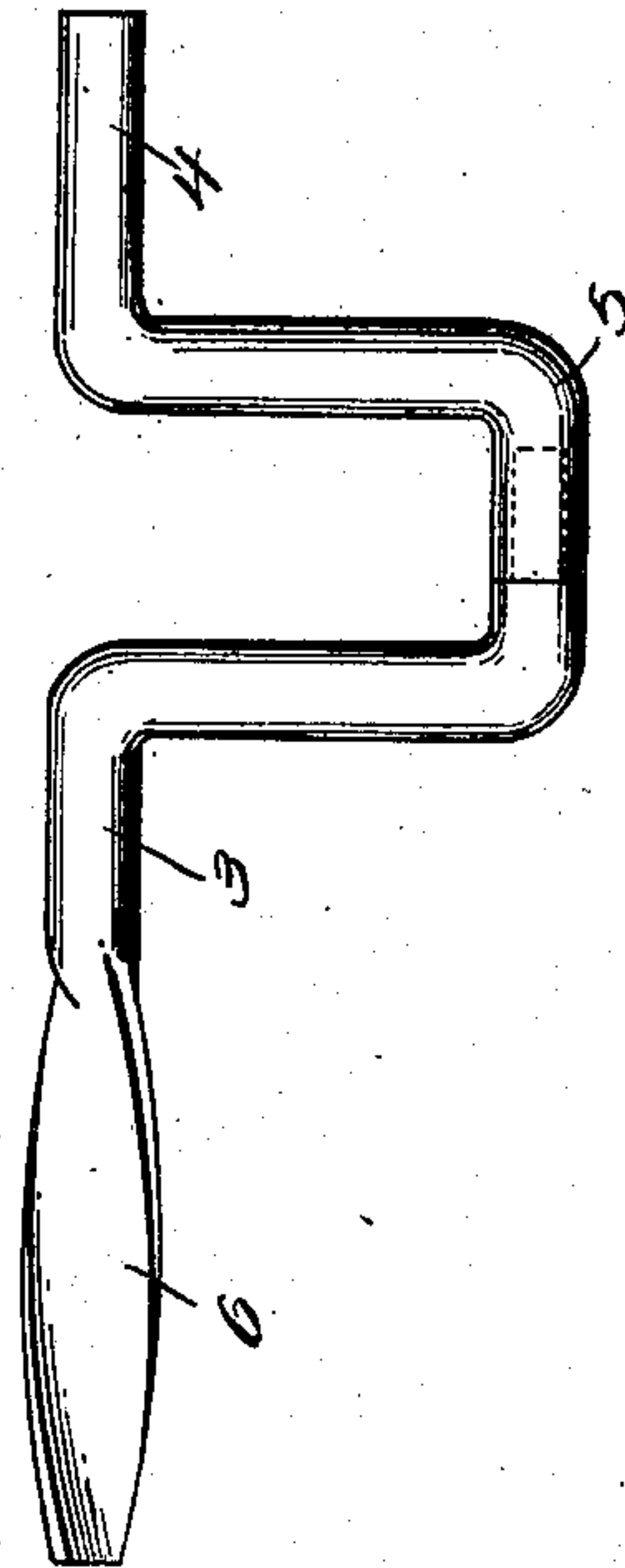


Fig. 5.

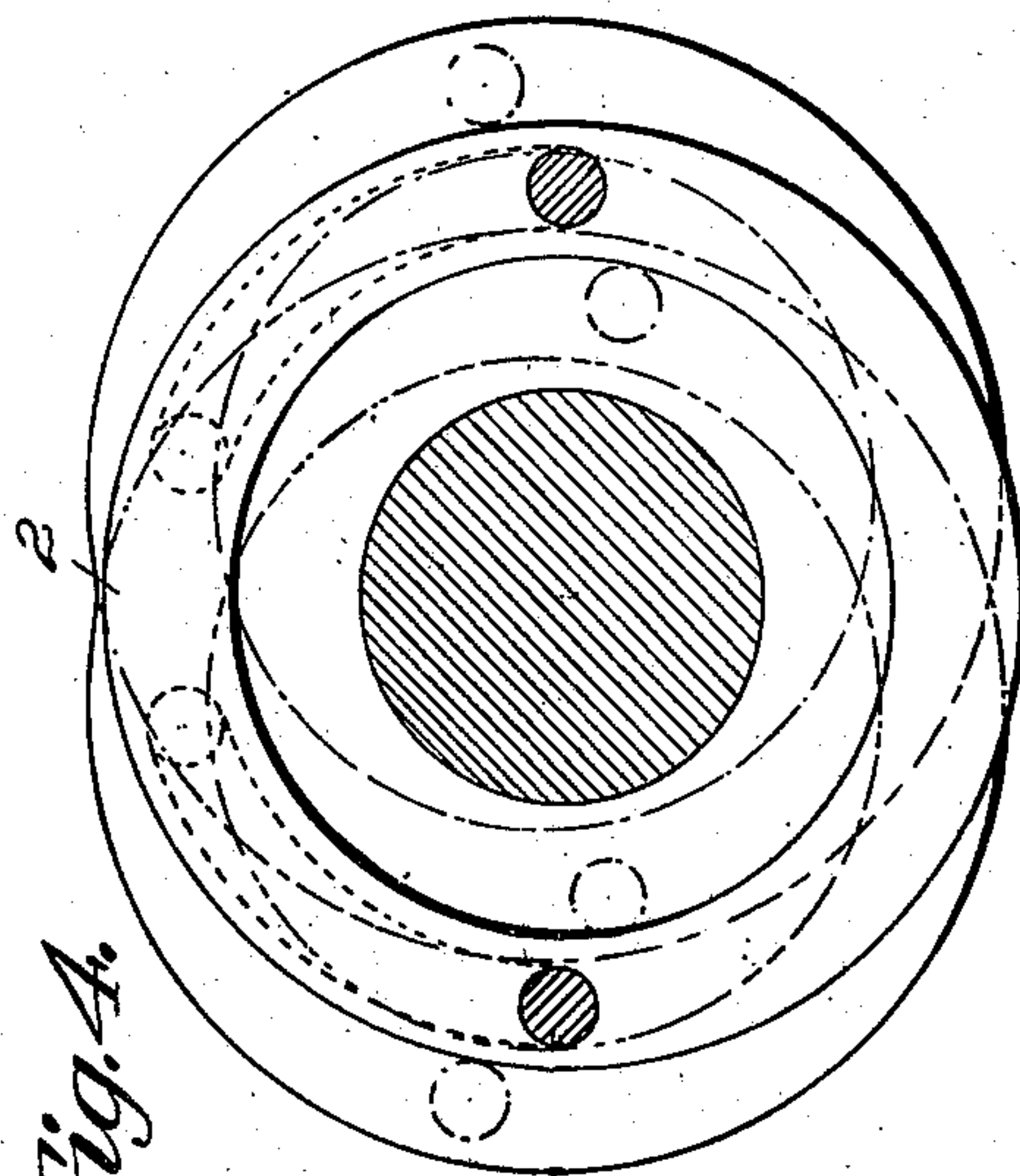


Fig. 4.

Witnesses
C. C. Smith.
R. M. Smith.

Inventor
Clyde C. Vinson.
By *Victor J. Evans*
Attorney

UNITED STATES PATENT OFFICE.

CLYDE C. VINSON, OF WICHITA, KANSAS.

VALVE-GEAR.

No. 881,748.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed November 14, 1907. Serial No. 402,118.

To all whom it may concern:

Be it known that I, CLYDE C. VINSON, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented new and useful Improvements in Valve-Gears, of which the following is a specification.

This invention relates to valve motions for engines, the object of the invention being to provide simple and reliable mechanism for reversing an engine by shifting the eccentric on the line shaft, the eccentric being so mounted relatively to the shaft and provided with operating or shifting means that the eccentric may be moved from a position in which it is concentric with the shaft to a position which will cause it to project to either side of the shaft and assume an eccentric relation thereto, adapting the engine to be reversed and also adapting the eccentric to operate with a long or short throw.

A further object of the invention is to provide a construction which, while accomplishing the result above described will be subject to very little wear, the latter taking place only during the movement of the eccentric from one position to another.

With the above general object in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of the valve motion. Fig. 2 is a plan view of the same. Fig. 3 is an end view of the mechanism, showing the shaft in cross section. Fig. 4 is a section taken close up to the shiftable eccentric. Fig. 5 is a detail plan view of one of the eccentric supporting elements.

Referring to the drawing, 1 designates the lineshaft and 2 the eccentric mounted thereon.

In carrying out the present invention the eccentric 2 is in the form of a ring or annulus as clearly shown in Fig. 4, the center opening of said ring being of considerably greater diameter than the diameter of the shaft 1 so that the said ring or eccentric 2 may be shifted transversely with relation to the shaft as indicated in Fig. 4.

The mechanism for shifting the ring or eccentric 2, in the preferred embodiment of this invention, consists of a pair of eccentric supporting elements one of which is illustrated in Fig. 5 wherein it is seen to comprise oppositely arranged journaled portions 3 and

4 arranged directly in line with each other, and an interposed shank 5, while one of the journaled portions 3 is flattened extended and twisted as shown to form a spiral 6 or screw of very easy or long pitch, the body of the screw being flat or rectangular in cross section.

The two supporting cranks have their journaled portion 3 and 4 mounted in bearing openings 7 and 8 in a pair of bearing collars 9 and 10 arranged at opposite sides of the eccentric 3 and secured fast upon the shaft so as to rotate therewith. The cranks 5 pass through bearing openings 11 and 12 in opposite sides of the ring or eccentric 2 and it will therefore be apparent that if the cranks 5 are simultaneously swung in one direction they will carry the ring or eccentric 2 in the corresponding direction thereby shifting said eccentric relatively to the shaft and causing the same to project on one side or the other according to the direction in which the engine is desired to be run or the length of stroke to be imparted to the valve which is operated by the eccentric.

The spirals 6 project on one side of one of the bearing collars 7 and 8 and extend parallel to each other as shown in Fig. 2 and pass through slots 11 in the lug or head 12 of a collar 13 on one end of a reversing sleeve 14 which is keyed to the shaft 1 as shown, so as to turn with the shaft and also slide thereon lengthwise so as to cause the same to cooperate with the spirals or twists 6 to impart a rocking or oscillating movement to the cranks 5 carrying the ring or eccentric. The reversing sleeve 14 is further provided with a grooved collar 16 in which is loosely fitted the ring 17 having oppositely projected trunnions 17' which move in the slotted arms 18 of a shipping fork 19. This shipping fork 19 is of elbow form, being pivotally mounted at 20 and provided with an arm 21 to which is attached a connecting rod 22 which connects at its opposite end with a thumb latch lever 23 cooperating with a notched segment 24 arranged in a suitable position relatively to the valve gear.

In view of the foregoing description, and by reference to the accompanying drawings it will be apparent that when the thumb latch lever 23 is brought to a middle position the ring or eccentric 2 will be shifted to its middle position in which it is concentric with the line shaft 1. While moving the lever 23 to either side of the center, the reversing

sleeve 14 is slid in corresponding direction lengthwise of the line shafts 1 which causes it to coöperate with the spirals 6 and swing the cranks 5 toward the corresponding side 5 thereby shifting the ring or eccentric to the same side of the line shaft. It will be also observed that the ring or eccentric may be shifted more or less to one side of the shaft to give the desired length of stroke, the 10 movement of said ring or eccentric in both directions being limited by the inner edge of the eccentric coming in contact with the line shaft.

I claim:—

15 1. In a valve gear the combination of a shaft, an open center eccentric encircling the shaft, and means for shifting the eccentric transversely of the shaft embodying a pair of swinging eccentric supporting elements.

2. In a valve gear the combination of a 20 shaft, an eccentric having an opening larger than the shaft, and means for shifting the eccentric transversely of the shaft comprising supporting cranks, and an element for swinging the cranks.

3. In a valve gear the combination of a 25 shaft, an eccentric having an opening larger than the shaft, and means for shifting the eccentric transversely of the shaft comprising supporting cranks, and a reversing sleeve 30 for swinging the cranks.

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

CLYDE C. VINSON.

Witnesses:

FRANK CLINE,
HENRY C. COMER.