No. 779,328. PATENTED JAN. 3, 1905.

H. M. SVEBILIUS.

MECHANICAL MOVEMENT FOR GAS ENGINES.

APPLICATION FILED FEB. 8, 1904.

Fig. 1.

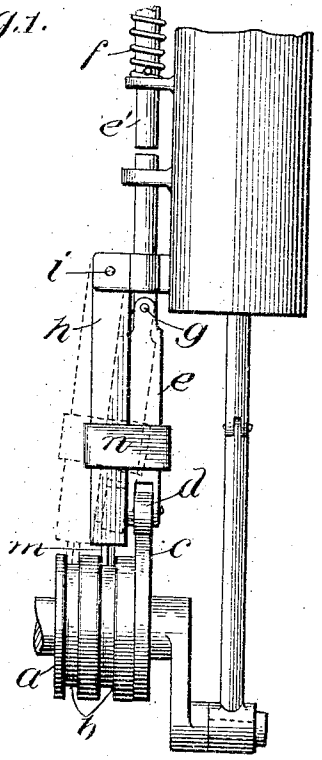


Fig. 2.

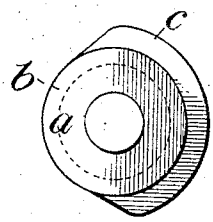


Fig. 3.

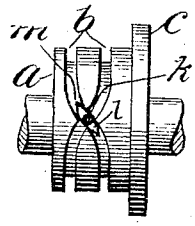


Fig. 4



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UNITED STATES PATENT OFFICE.

HENRY M. SVEBILIUS, OF CHICAGO, ILLINOIS.

MECHANICAL MOVEMENT FOR GAS-ENGINES.

SPECIFICATION forming part of Letters Patent No. 779,328, dated January 3, 1905.

Application filed February 8, 1904. Serial No. 192,569.

To all whom it may concern:

Be it known that I, HENRY M. SVEBILIUS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Mechanical Movements for Gas-Engines, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part hereof, and in which—

Figure 1 shows a gas-engine in plan view provided with my said new mechanical movement seen from the rear of the cam. Fig. 2 shows the part of my mechanism forming a fixed part of the engine-shaft in end elevation. Fig. 3 shows Fig. 2 on the side opposite to that shown in Fig. 1. Fig. 4 shows the switch which moves in the grooves of the cam in side elevation, the same being shown in end elevation in Fig. 1 and in plan in Fig. 3.

Like reference-letters denote like parts in all figures.

The object of my invention is to produce a more compact, simple, and cheaper device for operating the valve or valves of a gas-engine than has heretofore been produced. In said object I have reference to the mechanism which actuates the valve at every second revolution of the main shaft of the engine. To accomplish said end, it is the usual custom to have a second shaft provided with a crank or cam, with intermediate mechanism to reach the valve, and a gear-wheel meshing into a pinion on the main shaft of just half the diameter of said gear-wheel. Such gearing takes up a great deal of room and is in many ways objectionable. To attain said desirable ends I construct my said new device in substantially the following manner, namely: In a drum *a* are cut a pair of parallel and nearly circumferential grooves *b*, which at opposite points diverge from the parallel toward each other, intersect, and cross over slantingly each into the other groove or channel, as clearly indicated in Fig. 3. At one end of said drum is a cam *c*, upon which runs a roller *d*, which forms a part of the reciprocating valve-rod *e*, here shown in two separate parts, whereof the upper part *e'* is provided with a spring *f*, which keeps the ends of the rods in contact and which by said parts makes one to-and-fro motion for every revolution of the crank-shaft. In my construction, however, it is desired to omit one such to-and-fro motion for every revolution of the crank-shaft. I therefore provide mechanism by means of which said end may be attained as follows, namely: a joint *g* in the rod *e* for lateral motion, a bar *h*, parallel to the rod *e*, and a joint *i* near *g*, and in the end of said bar *h* is placed an automatic switch mechanism *j*, consisting of a stem *k*, which turns freely in the end of the bar *h*, and a double-pointed switch *l* with front and back edges *m*, which permits turning the shaft in either direction. The bars *h* *e* are connected by a strap *n*. The device *j*, Fig. 4, is also shown in top view in Fig. 3, crossing over from one groove into the other. The crank is shown connected to an ordinary gas-engine cylinder. From the construction shown it is evident that any number of revolutions desired may be made to omit action on the valve-rod. This device is therefore specially adapted to the gas-engine in this form. By crossing the grooves there are formed cams in every necessary place to turn the switch *l* and cause it to play from one groove into the other, as clearly indicated by the position of the part *j* in the crossing from left to right of the grooves, as shown in Fig. 3.

What I claim is—

The combination with a shafted revoluble drum provided with partly-circumferential parallel grooves, each groove completing the circumference by intersecting and crossing into the opposite groove and a cam on said drum, of a jointed valve-stem, and a hinged stem parallel to said valve-stem, and connected to it, provided with a switch playing in said grooves.

HENRY M. SVEBILIUS.

Witnesses:
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