

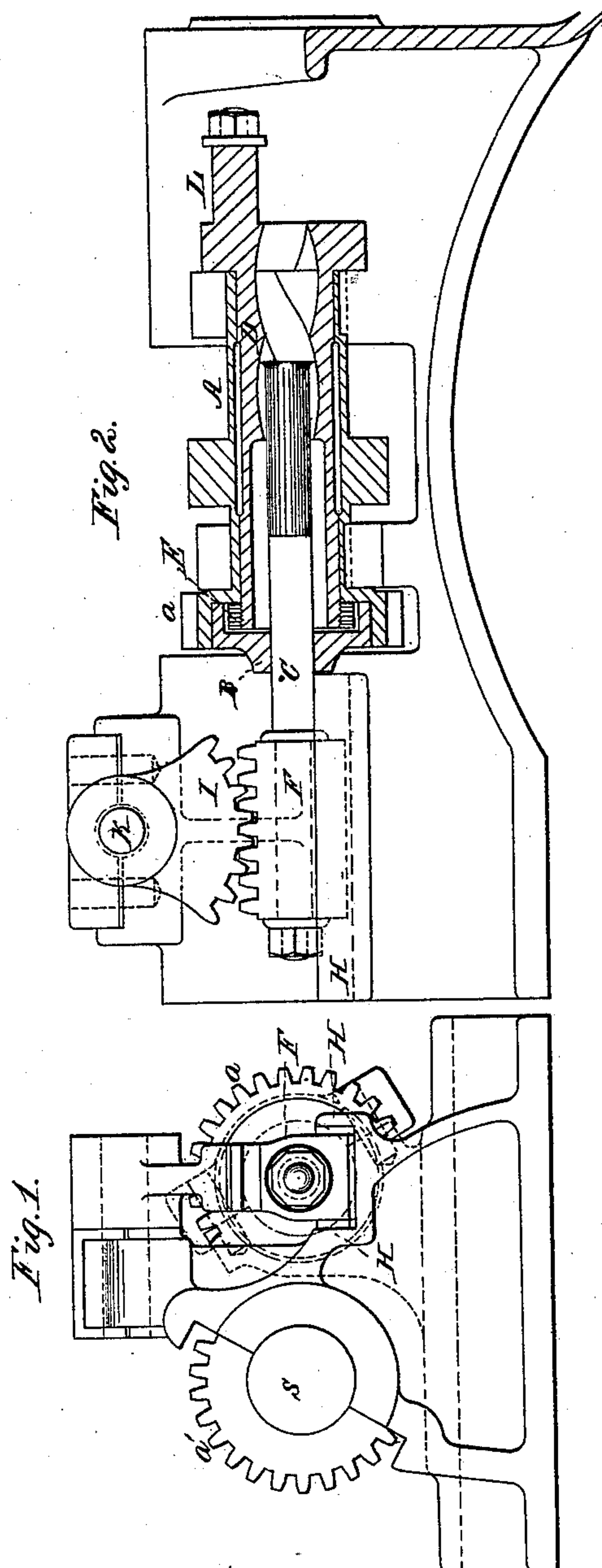
(No Model.)

M. E. HERSHEY.

REVERSING GEAR FOR STEAM ENGINES.

No. 285,812.

Patented Oct. 2, 1883.



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UNITED STATES PATENT OFFICE.

MARTIN E. HERSHEY, OF HARRISBURG, PENNSYLVANIA.

REVERSING-GEAR FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 285,812, dated October 2, 1883.

Application filed August 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, M. E. HERSHEY, of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a certain new and Improved Reversing-Gear for Steam-Engines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and to the figures and letters of reference marked thereon.

My invention consists of improved reversing-gear for steam-engines, constructed and operating substantially as hereinafter described and claimed.

Referring to the accompanying drawings, Figure 1 is an end view; and Fig. 2, a side view, partially in section, of my improved device.

Like letters of reference in the several figures denote the same parts.

The letter A represents an outer shell having gear-teeth *a*, which are adapted to mesh with the teeth of the corresponding gear, *a'*, on the engine-shaft S. Located within the geared portion of the shell A, and secured thereto, is a carrier-cap, B, having a square hole at its center, within which fits the squared portion of a central shaft, C. One end of this shaft C is made cylindrical, and upon it fits a rack-toothed slide, F, which is confined within guides H H, so that while it is prevented from rotating with the shaft C it is free to slide in said guides when the shaft C is moved longitudinally in either direction. With the slide F meshes a cogged segment, I, mounted on a shaft, K, and adapted to be shifted by means of a lever applied to said shaft or otherwise. The opposite end of shaft C is of spiral form, and works in a spiral channel formed to receive it in the inner sleeve, D, upon which the outer sleeve or shell, A, is mounted, and to a crank, L, on which the valve-shifting mechanism is connected. Upon the inner end of the sleeve D is screwed a ring or nut, E, the function of which is to keep the parts A D in their proper relative position and prevent their moving longitudinally upon each other.

When motion is imparted to the outer shell,

A, through the medium of the gear on the engine-shaft, the cap B and shaft C are rotated, and through the medium of the spiral end of the shaft the inner sleeve, D, carrying the crank, is also rotated. To shift the position of the crank, it is only necessary to move the gear-segment I, so as to cause it to move the rack-toothed slide F in one direction or the other, and thus cause the shaft to be projected or retracted and its spiral end to co-operate with the spiral groove in the sleeve D, and cause said sleeve to be turned on its axis in one direction or the other, as the case may be, so as to properly position the crank.

It will be observed that this contrivance is very simple and compact, yet entirely effective.

I claim as my invention—

1. The outer shell or sleeve and the inner sleeve, the former driven from the engine-shaft and the latter carrying the crank and having the spiral groove or channel, in combination with the central shaft having the spirally-shaped end and the squared portion, the cap by which the motion of the outer shell is communicated to the shaft, and means for shifting the shaft longitudinally, so as to change the position of the crank, substantially as described.

2. The combination of the outer shell having the gear-teeth meshing with the gear on the engine-shaft, the inner sleeve having the spiral groove or channel and the crank, the longitudinally-adjustable shaft having the spiral end, the cap by which the shaft is rotated from the outer shell, the rack-toothed slide, and the segment operating upon it to shift the position of the crank, substantially as described.

3. In a reversing valve-gear, the combination, with the outer shell and the inner sleeve, of the nut or ring upon the inner sleeve for preventing longitudinal movement of the outer sleeve upon the inner sleeve, substantially as described.

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