

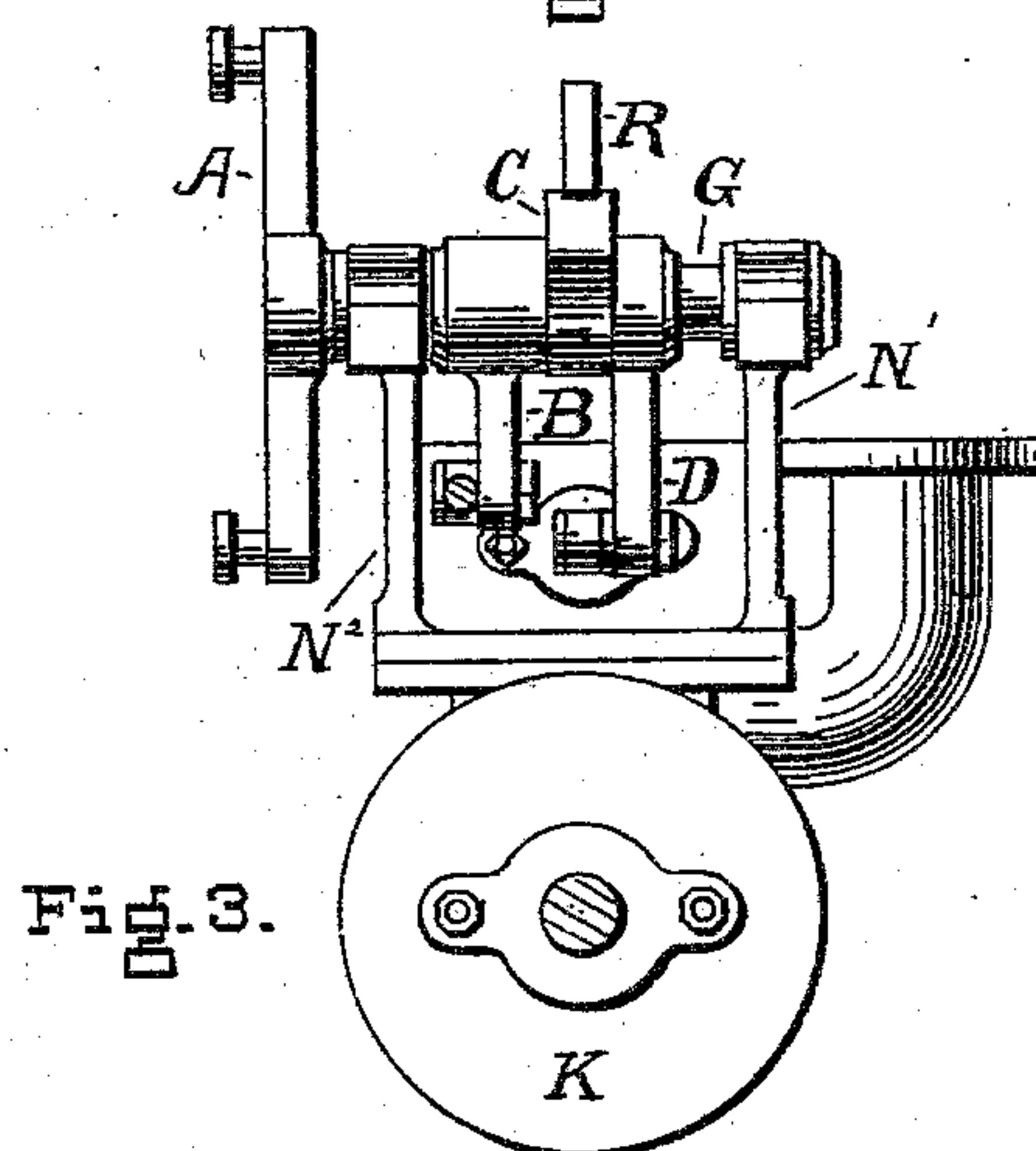
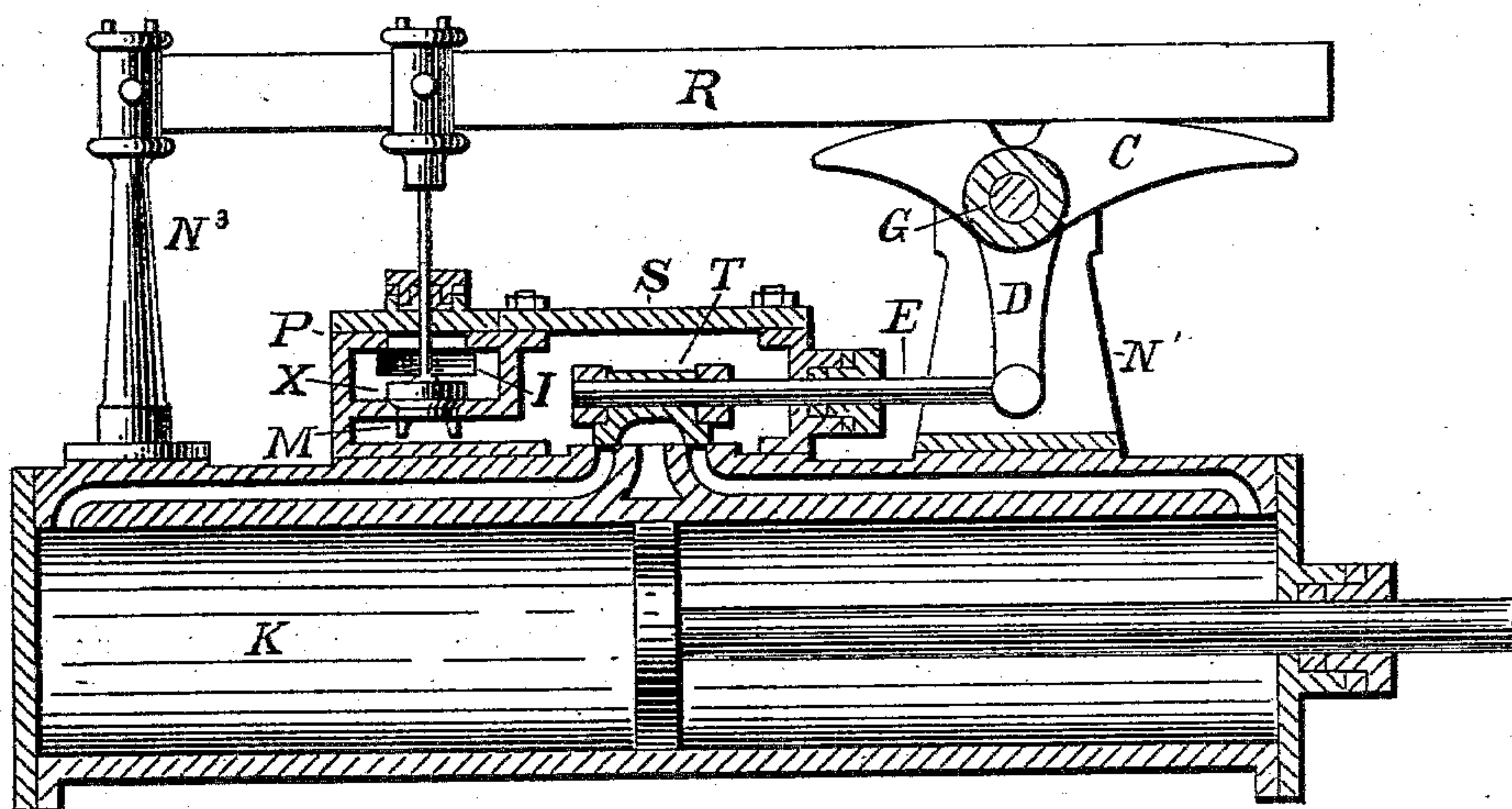
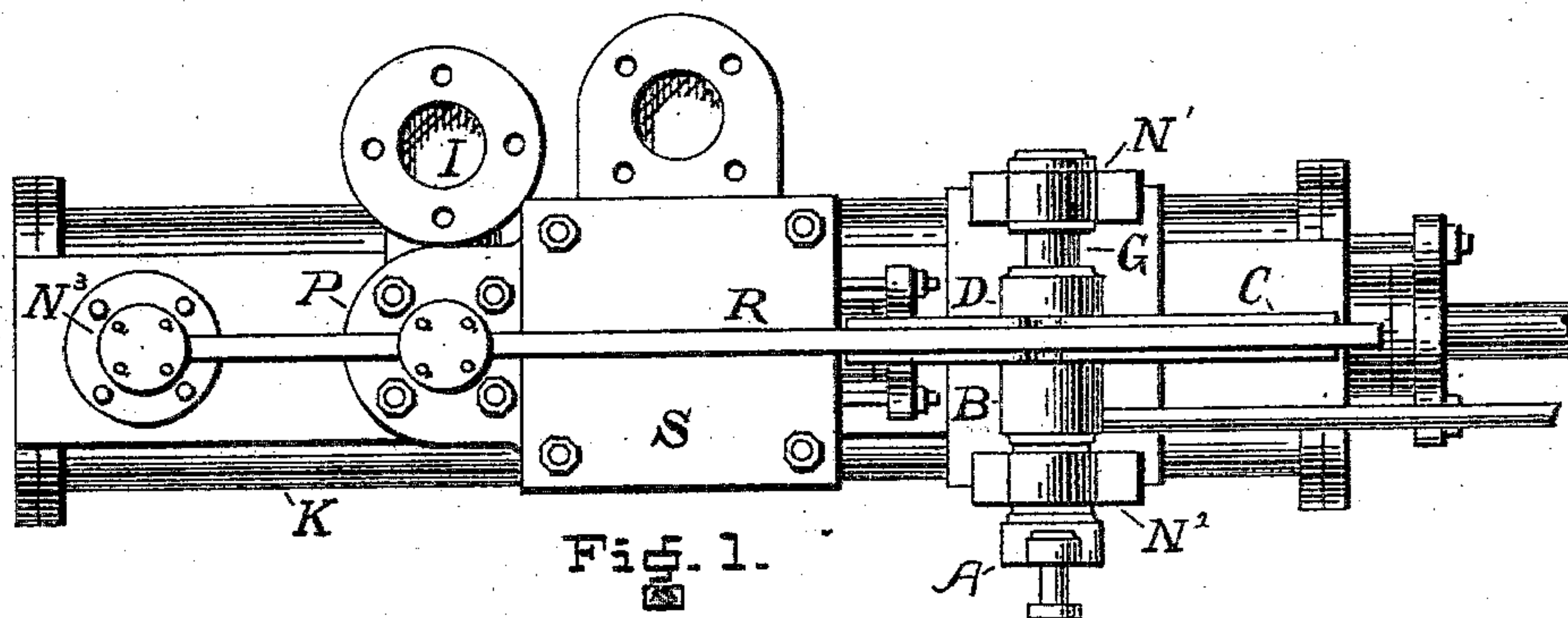
(No Model.)

J. M. SWEENEY.

CUT-OFF VALVE FOR STEAM ENGINES.

No. 274,530.

Patented Mar. 27, 1883.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN M. SWEENEY, OF WHEELING, WEST VIRGINIA.

CUT-OFF VALVE FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 274,530, dated March 27, 1883.

Application filed November 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. SWEENEY, a resident of Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in Cut-Off Valves for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates specially to the construction and arrangement of the puppet cut-off valve in connection with the slide-valve in general use on steamboat-engines of this class, and to certain improvements and modifications of the construction of the operating mechanism used to operate the valves in combination.

Heretofore it has generally been the practice in the construction of puppet cut-off slide-valve engines to place the puppet-valves on one side of the steam-chest in a projecting chamber arranged specially for it, and the valve was operated by separate mechanism from that used to work the slide-valve. It has also been the practice to place the supports or stands for the rock-shaft which operate the
30 slide-valve on the timbers or frame supporting the cylinder. This mode of construction is objectionable in many ways. First, the puppet cut-off valve, being placed on one side of the steam-chest, has an unequal bearing, requires
35 separate operating mechanism, and is inconvenient to get at for repairs, and from its peculiar shape, the steam-passage from the valve being below the opening in the steam-chest, it forms a water-seal in the manner of a trap,
40 and is expensive to build; second, in the construction of the bearings for the rock-shaft it is impossible to secure a firm and rigid foundation, especially on wooden steamboats, by placing the stand on the timbers, and they
45 interfere with the ready manipulation of the rod-glands, packing, keys, &c. To overcome these difficulties and remove these objectionable features in the construction of puppet cut-off slide-valve engines, I propose to attach the
50 puppet cut-off-valve chamber to one end of the steam-chest, directly over the center of the cylinder, as will hereinafter more fully appear,

and also attach the stands carrying the rock-shaft to the top of the steam-cylinder, arranging the cut-off lever over the center of the cylinder, instead of one side, as heretofore. 55

In the drawings, Figure 1 is a plan or top view; Fig. 2, a vertical central section lengthwise of the cylinder; Fig. 3, an end view.

Like letters of reference refer to similar parts. 60

The letter K represents the steam-cylinder; S, the steam-chest; T, the slide-valve; P, the cut-off-valve chamber attached to the steam-chest; X, cut-off valve; *a*, valve-rod; I, an opening on the top of the cut-off valve for the admission of live steam, which passes through the valve-chamber P, through the valve-opening *m* into the steam-chest, thus avoiding any water collected by condensation or otherwise, as the steam, by this mode of construction, can readily pass from the top of the valve through the valve-opening into the steam-chest direct, without liability of obstruction from an accumulation of water in the manner of a water-seal, as shown in the old style of construction, where the passage is below the opening in the steam-chest. 70 75

N' N² are stands to support rock-shaft secured to suitable bearings on the top of the cylinder. 80

G is the rock-shaft.

A and D are arms secured to the rock-shaft, so that the movement of the lower arm, D, is incident with the upper arm, A. The arm A is operated by an ordinary full-stroke cam, and communicates its movement through shaft G, arm D, and stem E to the slide-valve T. Arm B and lifter C are in one casting working loosely on the shaft G, the oscillating movements of each being independent of the other. The arm B is actuated by an independent cut-off cam, and communicates its movement to the cut-off valve X through the medium of the lever R, arranged directly over the center of the cylinder and attached to a standard, N³, secured to the top of the cylinder. 85 90 95

Having described my invention, what I claim in the construction of puppet cut-off slide-valve engines, and desire to secure by Letters Patent of the United States, is— 100

1. The combination, with the cylinder and steam-chest, of a puppet-valve chamber, P, located within the steam-chest, and having an

opening for the admission of steam above the valve-seat, and a lower opening communicating with the interior of the steam-chest, a slide-valve, T, and mechanism, substantially as described, mounted upon the steam-cylinder, for operating the said slide and puppet valves, substantially as described.

2. The combination of the cylinder K, the steam-chest S, the slide and puppet valves, with connected mechanism for operating both of such valves, mounted directly upon the cylinder, substantially as described.

3. The combination of the cylinder K, standards N' N² N³, rock-shaft G, arms A B D, lever R, lifter C, slide-valves I, and puppet-valves X, arranged substantially as herein shown, and for the purposes set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

JNO. M. SWEENEY.

Witnesses:

GEO. K. STORM,
E. B. HOWARD.