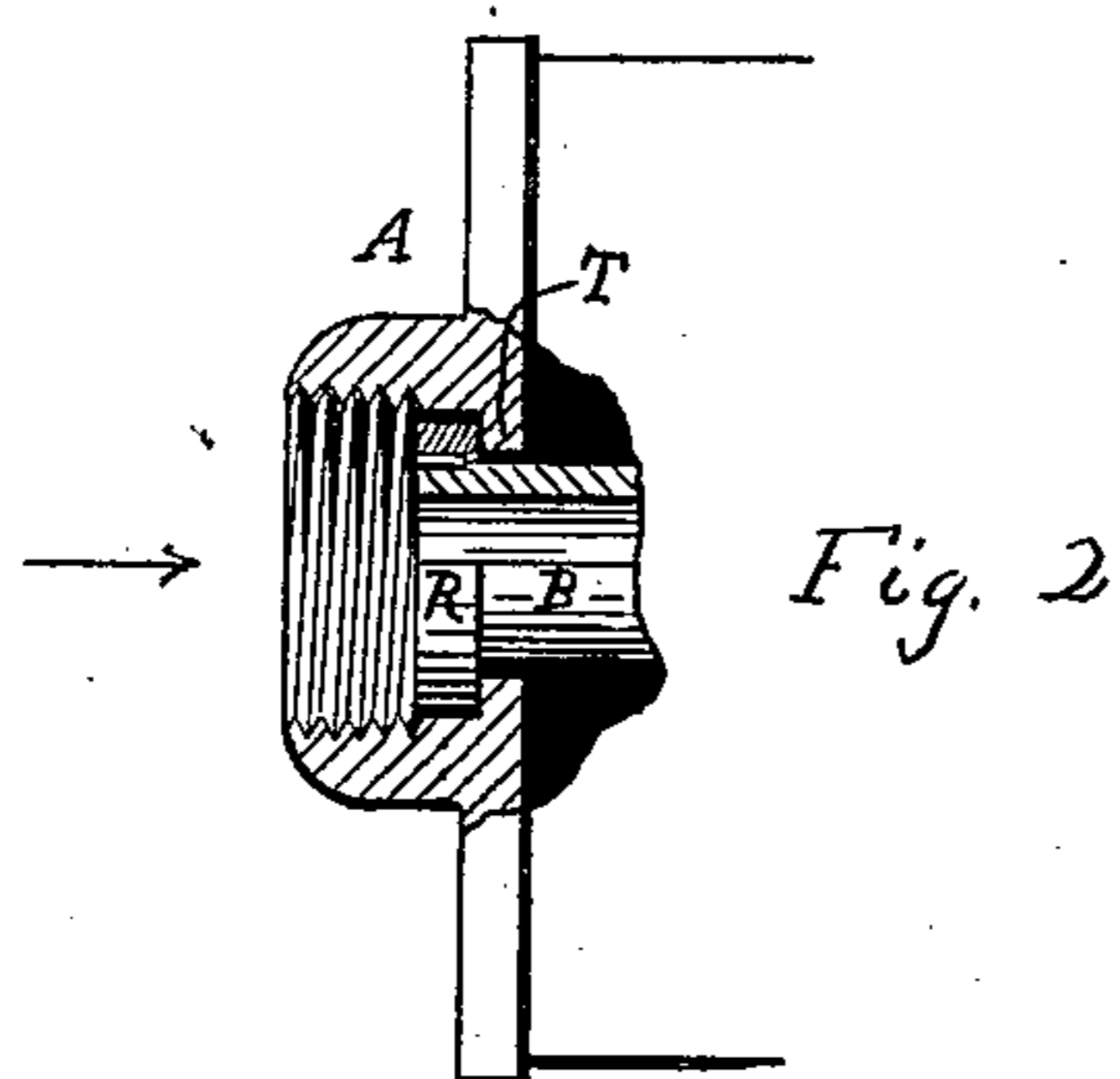
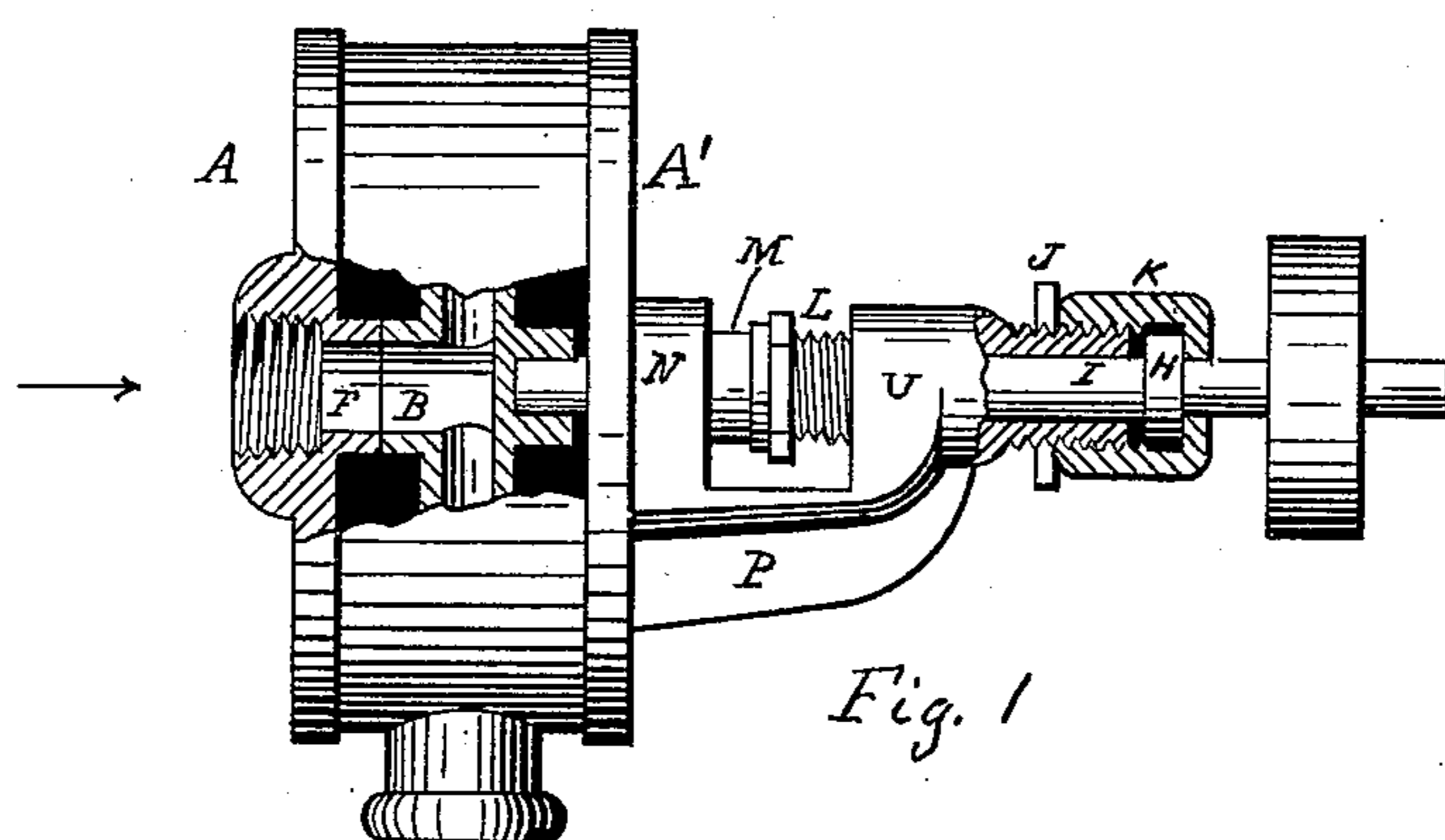


(No Model.)

D. L. F. CHASE.
STEAM GOVERNOR.

No. 245,276.

Patented Aug. 9, 1881.



Witnesses
Lewis E. Chase
W. G. Young

Inventor
Daniel L. F. Chase.

UNITED STATES PATENT OFFICE.

DANIEL L. F. CHASE, OF SOMERVILLE, MASSACHUSETTS.

STEAM-GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 245,276, dated August 9, 1881.

Application filed November 19, 1880. (No model.)

To all whom it may concern:

Be it known that I, DANIEL L. F. CHASE, of Somerville, Middlesex county, Massachusetts, have invented a new and useful Improvement in Steam-Governors; and I hereby declare that the following specification and the accompanying drawings give a full and correct description of the same.

My present invention is an improvement upon the steam-governor for which I already hold Letters Patent No. 160,572, March 9, 1875. The general principle of the machine requires that the steam shall pass through the inlet of a stationary chamber or case directly into a hollow revolving steam conductor or "flier" inclosed in said case; and my invention consists in a new method of effecting such passage of steam without undue leakage and without undue friction of bearing-surfaces.

Figure 1 is a side view of the machine with partial vertical sections, showing the form and arrangement of the parts concerned in the present invention. Fig. 2 is a similar view of the corresponding parts as heretofore made.

The general construction is as follows: The cylinder-case A, Fig. 1, contains a centrifugal mechanism consisting of a hollow revolving flier, B, a pair of centrifugal valves, springs, &c. None of the internal parts, except the flier B, are shown, because they do not directly pertain to the present matter. The steam enters the case A, as shown by the arrow, thence passes into the flier B with its two branching passages, thence through valve-ports (not shown) to the interior of the case A, (shown by the dark parts surrounding the flier B,) and so out at the bottom. My present purpose relates only to managing the contact of the revolving flier B with the stationary case A.

The former practice has been to make the hub of the flier B long enough to extend some distance into the hub of the case A, as in Fig. 2. Then a packing-ring, R, was fitted to the outer end of said long hub, which ring R revolved in contact with a circular rim or lip, T, formed in the case. The ring R was keyed to the hub of B, as shown in section, in its upper half, so as to revolve with it, but loosely enough so that the pressure of steam in the direction of the arrow kept the said ring constantly pressed against the lip T. This made

a self-adjusting packing, since the ring R could slip forward on its hub as fast as its bearing-surface wore away. The disadvantages of this method were as follows: First, the packing-ring R was necessarily of large diameter in comparison with the inlet of the flier B, thus requiring a larger and quicker-moving bearing-surface than the new plan which I shall explain; second, the constant pressure of steam on the ring R caused a troublesome amount of friction, which necessitated more driving-power than would otherwise be required; third, when the internal parts of the governor were removed from the case for repairs the ring R was left behind in its recess, and it was a difficult and vexatious matter to get the hub of the flier back into the ring.

Now my present method (shown in Fig. 1) is simply to make the hub of the revolving flier B to abut against a corresponding stationary hub, F, in the case A. The driving-shaft I, which is fixed rigidly to the flier B, carries a collar, H, which bears against the inside of the cap K, which cap is screwed onto the end of the boss forming the shaft-bearing. The collar H and screw-cap K form an adjustable thrust-bearing for adjusting the contact between B and F. When the cap K is screwed on the collar H, shaft I and flier B are thrown forward together, so that the hub of B may be made to revolve in contact or nearly in contact with the hub F, as may be desired. A check-nut, J, holds the cap K in place when it is adjusted. The relative length of the hubs B and F is immaterial. In fact, the whole length of hub may be entirely on the stationary part or entirely on the revolving part.

Instead of the collar-and-cap thrust-bearing, an equivalent step-bearing may be arranged on the end of the shaft.

The useful results which I gain are as follows: first, the bearing-surfaces between B and F are the smallest possible in diameter as compared with the inlet-passage, and much smaller than in the case of Fig. 2; second, the steam-pressure in the direction of the arrow tends to press the bearing-surfaces between F and B apart, (instead of together, as R and T, Fig. 2,) thus transferring all pressure and friction to the collar H, where they are easily manageable as to lubrication, &c.; third, there

is no difficulty in replacing the internal parts in the case after they have been removed for repairs.

5 The letters N M L, Fig. 1, denote respectively a stuffing-box, gland, and follower-nut, which need no description.

What I claim as my invention, and desire to secure by Letters Patent, is—

10 In a steam-governor consisting, essentially, of a chamber or case inclosing a centrifugal mechanism, the arrangement of the revolving

flier B, with its hub abutting against the stationary hub F in the case A, in combination with an adjustable thrust-bearing on the driving-shaft for regulating the contact of the two hubs, the whole arranged substantially as described, and for the purposes explained. 15

DANIEL L. F. CHASE.

Witnesses:

LEWSON E. CHASE,
N. G. YOUNG.