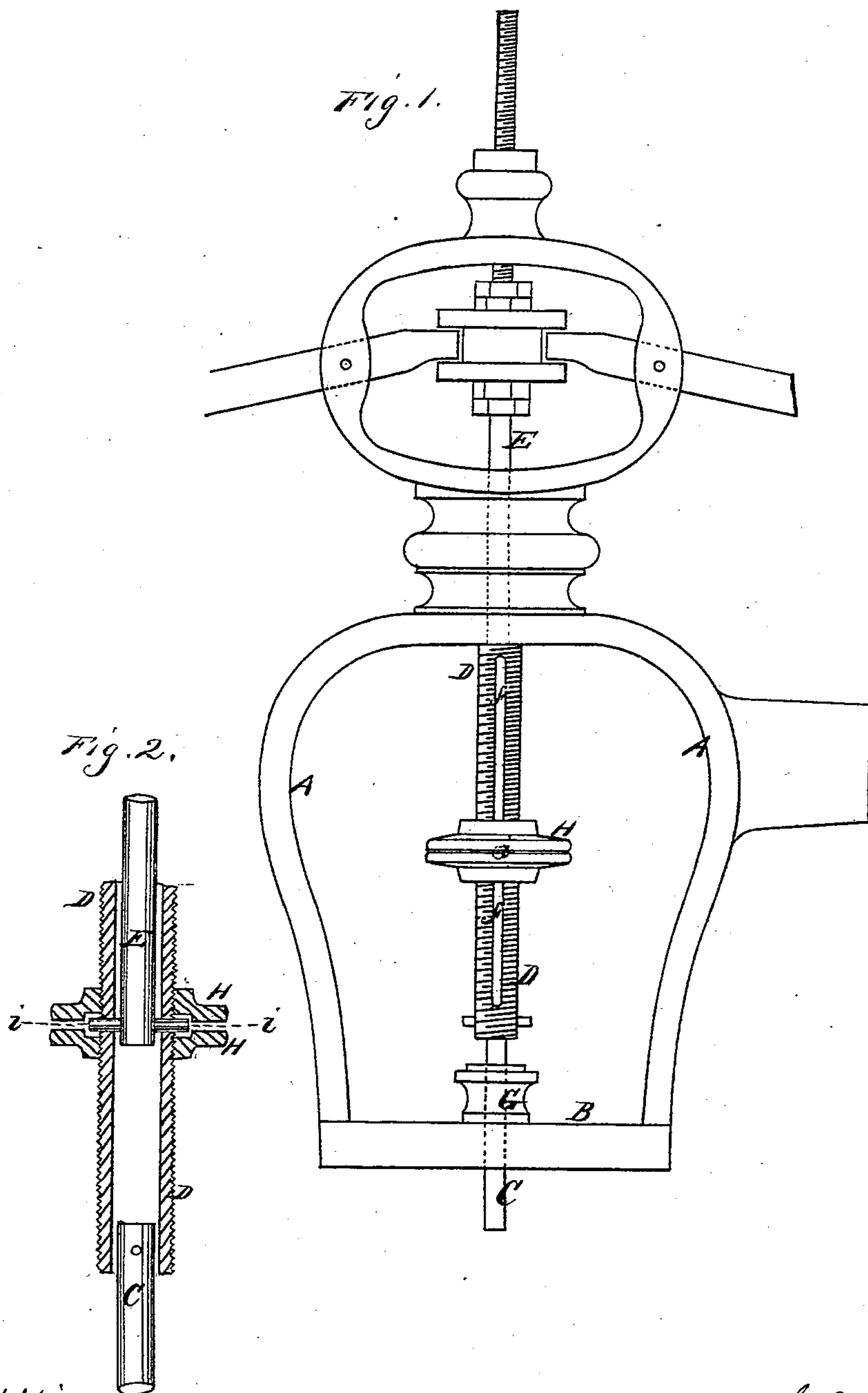


W. L. B. COLLINS & J. DONALDSON.

Regulators for Governors to Steam-Engines.

No. 148,670.

Patented March 17, 1874.



Witnesses.  
A. L. Anthony.  
J. H. Brown.

William L. B. Collins.  
Joshua Donaldson.  
By L. W. Smith, atty.

# UNITED STATES PATENT OFFICE.

WILLIAM L. B. COLLINS AND JOSHUA DONALDSON, OF VACAVILLE, CAL.

## IMPROVEMENT IN REGULATORS FOR GOVERNORS TO STEAM-ENGINES.

Specification forming part of Letters Patent No. 148,670, dated March 17, 1874; application filed January 10, 1874.

*To all whom it may concern:*

Be it known that we, WILLIAM L. B. COLLINS and JOSHUA DONALDSON, of Vacaville, county of Solano and State of California, have invented an Improved Regulator for Governors of Steam-Engines; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and letters marked thereon.

Our invention relates to certain improvements in governors; and it consists, principally, in a novel construction whereby we are at all times enabled to regulate the valve-spindle and move it up and down without stopping the governor, and thus open or close the valve more or less.

This is effected by means of a sort of double nut, which moves up and down upon a screw which unites the valve-spindle with the governor-stem.

This nut can be turned so as to bring the two stems nearer together or separate them more, as may be desired.

Referring to the accompanying drawings for a more complete explanation of our invention, Figure 1 is a side elevation of our governor. Fig. 2 is a section, showing the nut and screw uniting the two stems.

In the present case we have only shown a sufficient portion of the governor to illustrate the invention, and have omitted the driving-gears and the weights or balls, as these are common to all governors.

A is the frame of our governor, the base-plate B of which may serve as a cover or top to the valve-chamber. The spindle C passes up through this cover and the stuffing-box G, and its upper end is secured to the bottom of

a hollow screw, D, as shown. The governor-stem E passes down inside this screw, and a pin, *i*, projects from its lower end through the slot *f*, which is made at one side of the screw and extends from the top to near the bottom, so that the pin can move up and down in the slot. A double nut, H, is fitted to the screw D, and the two halves of this nut are placed one above and one below the pin *i*, which fits in a groove cut in the two parts, so that when the nut is turned around the pin will hold it in the same relative position to the governor-stem E, and the screw D will thus be forced to move up or down along the stem E. By this means it will carry with it the spindle C, and thus raise or depress the valve, so that when the governor is running it will not be necessary to stop it at any time for the purpose of regulating or changing the speed of the engine.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The screw D, slotted as shown, and provided with the nut H, in combination with the governor-stem E, with the pin *i*, for the purpose of adjusting the valve stem C without stopping the engine, substantially as herein described.

In witness whereof we have hereunto set our hands and seals.

WILLIAM L. B. COLLINS. [L. S.]  
JOSHUA DONALDSON. [L. S.]

Witnesses to COLLINS' signature:

JOHN B. MERCHANT,  
JOHN N. ALBIN.

Witnesses to DONALDSON's signature:

M. G. UPTON,  
C. W. M. SMITH.