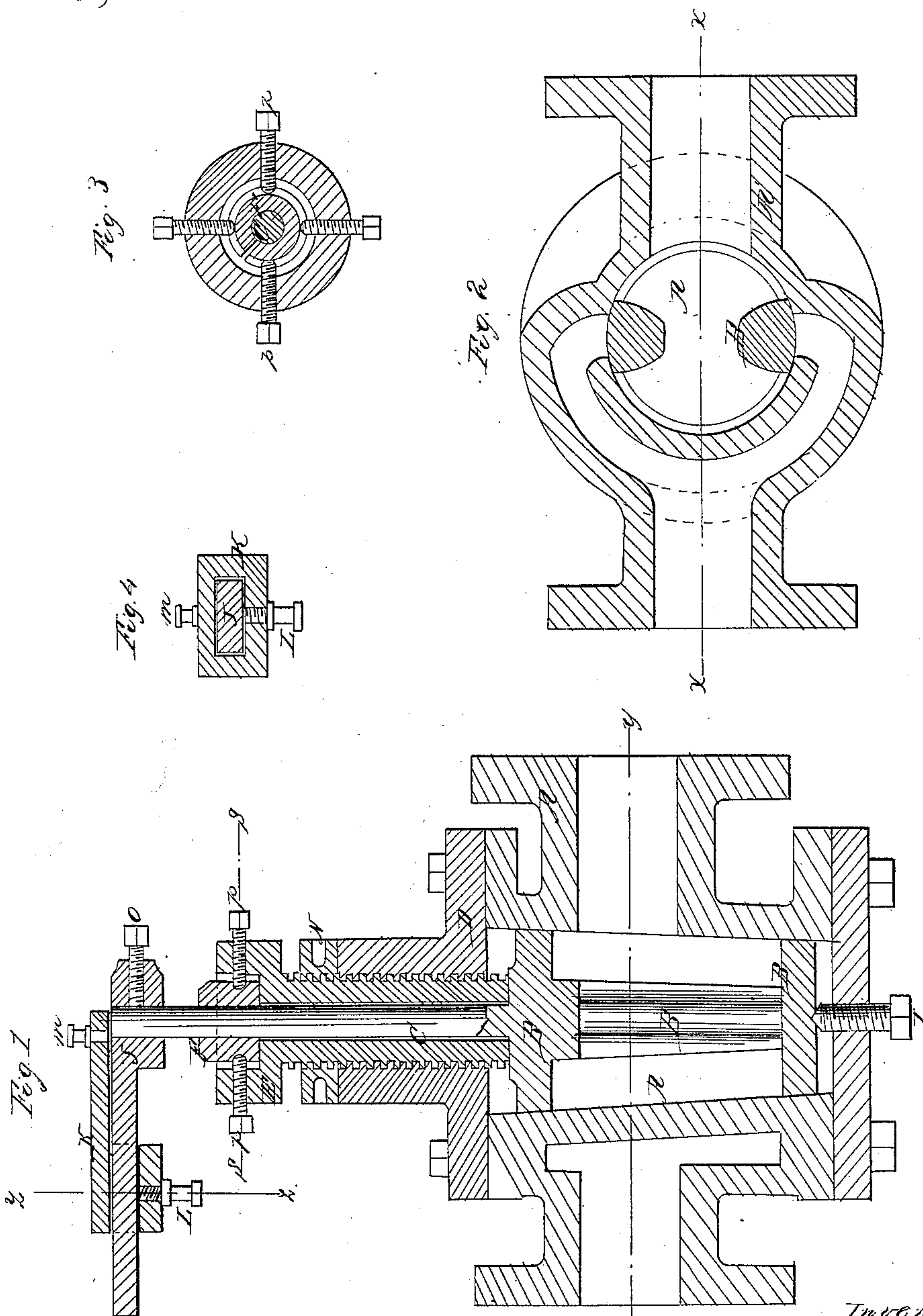


J. L. Dickinson,
Rotary Steam Valve.
No 59,565. Patented Nov. 13, 1866.



Witnesses
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J. L. DICKINSON, OF DUBUQUE, IOWA.

IMPROVEMENT IN VALVE DEVICES FOR STEAM-ENGINES.

Specification forming part of Letters Patent No. 59,565, dated November 13, 1866.

To all whom it may concern:

Be it known that I, J. L. DICKINSON, of Dubuque, in the county of Dubuque and State of Iowa, have invented a new and Improved Combined Governor-Valve and Variable Cut-Off; and I do hereby declare that the following is a full, clear, and exact description thereof.

This invention relates to the steam-engine; and consists in certain improvements in governor-valves and in the variable cut-off, whereby I overcome many of the obstacles which have been met with heretofore. I accomplish this by applying an adjustable follower, which is made to operate on the valve, keeping it steam-tight and firm in its place. Also, I provide an adjustable thimble box or bearing to guide the valve-rod; and in an arm attached to the valve rod or stem, having a slide upon it with wrist-pins attached, by which the action of the valve is controlled and varied as may be desired.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 represents a vertical sectional elevation of the valve and its attachments when in use, the red portion being a section of Fig. 2 through the line *xx*. Fig. 2 is a transverse section through the line *yy* of Fig. 1. Fig. 3 is a section of Fig. 1 through the line *ss*, and Fig. 4 is a section through the line *zz* of Fig. 1.

Similar letters indicate like parts in the drawings.

A represents the valve-chamber, and A' the shell forming the valve chamber and seat and steam-apertures. B is the valve. C is the valve rod or stem. D is the valve-chamber head. E is the follower; F, the adjustable thimble-box; J, the arm on the valve-rod. L is the wrist to which the eccentric-rod is attached. M is the wrist to which the connecting-rod from the governor is attached; and K is the slide upon the arm J, to which the wrists L and M are attached.

The valve B is attached to its rod in the usual manner, and when in operation it bears

slightly upon the point of the screw I to prevent its binding in its seat.

The follower E has a screw-thread upon its outside, which fits a corresponding screw upon the inside of the valve-chamber head D. At its lower end it bears upon the top of the valve B, and is adjusted to bear with any desired pressure by the jam-nut N, near its upper end.

The valve-rod C passes through the center of this follower loosely, and is guided and supported in its proper position by the thimble-box F. This box or bearing F is made of any suitable material, and may be an entire ring or it may be divided. It is adjusted by set-screws *p* to any desired position, its duty being to guide the valve-rod and keep it in a position that will allow the valve to have an easy oscillating motion without any side wear. Its position is in a recess formed in the top of the follower E, the recess being larger in diameter than the box to allow of its adjustment.

At the end of the valve-rod the arm J is attached, being fastened by the set-screw O.

The slide K, which is made to move freely upon the arm J, has a wrist-pin, L, attached to it near one of its ends, which is connected with the eccentric of the engine, and which gives the arm, and consequently the valve, an oscillating motion. Another wrist-pin, *m*, is attached to this slide, to which the rod from the governor is connected.

The operation will be readily understood by those acquainted with the steam-engine.

The throw of the valve B is governed by the movement of the arm J, and that movement is greater or less as the wrist L approaches to or recedes from the valve-rod C.

The wrist M, being connected with the governor, moves the slide K back and forth on the arm J as the speed of the engine is fast or slow, lengthening or shortening the distance of the wrist L from the valve-rod, and increasing or diminishing the throw of the valve, thus letting on or shutting off the steam.

The shell A', forming the valve-chamber, and through which the steam passes from the boiler to the engine, is made in the usual form, and needs no particular description.

The slide K may be made in any convenient

form that will allow of the firm attachment of the wrists L and M and a free motion on the arm J.

I do not broadly claim the invention of a governor-valve and variable cut-off combined, as I am aware that it has been done before; but

What I do claim as new, and desire to secure by Letters Patent, is—

The follower E, the thimble-box F, and the sliding arm K, constructed and arranged substantially as herein set forth, in combination with governor-valve of a steam-engine.

J. L. DICKINSON.

Witnesses:

W. H. AUSTIN,
J. H. HOWARD.