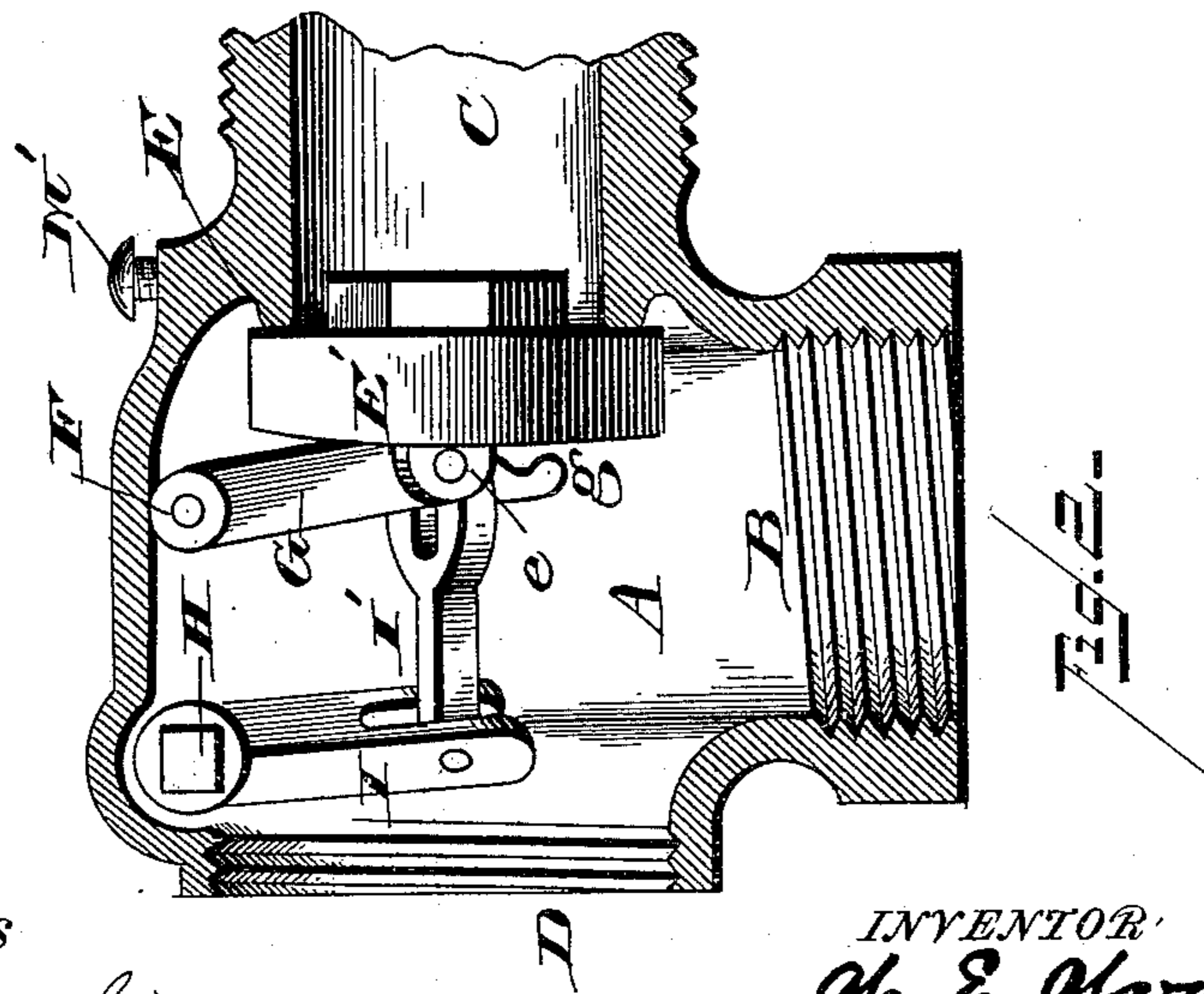
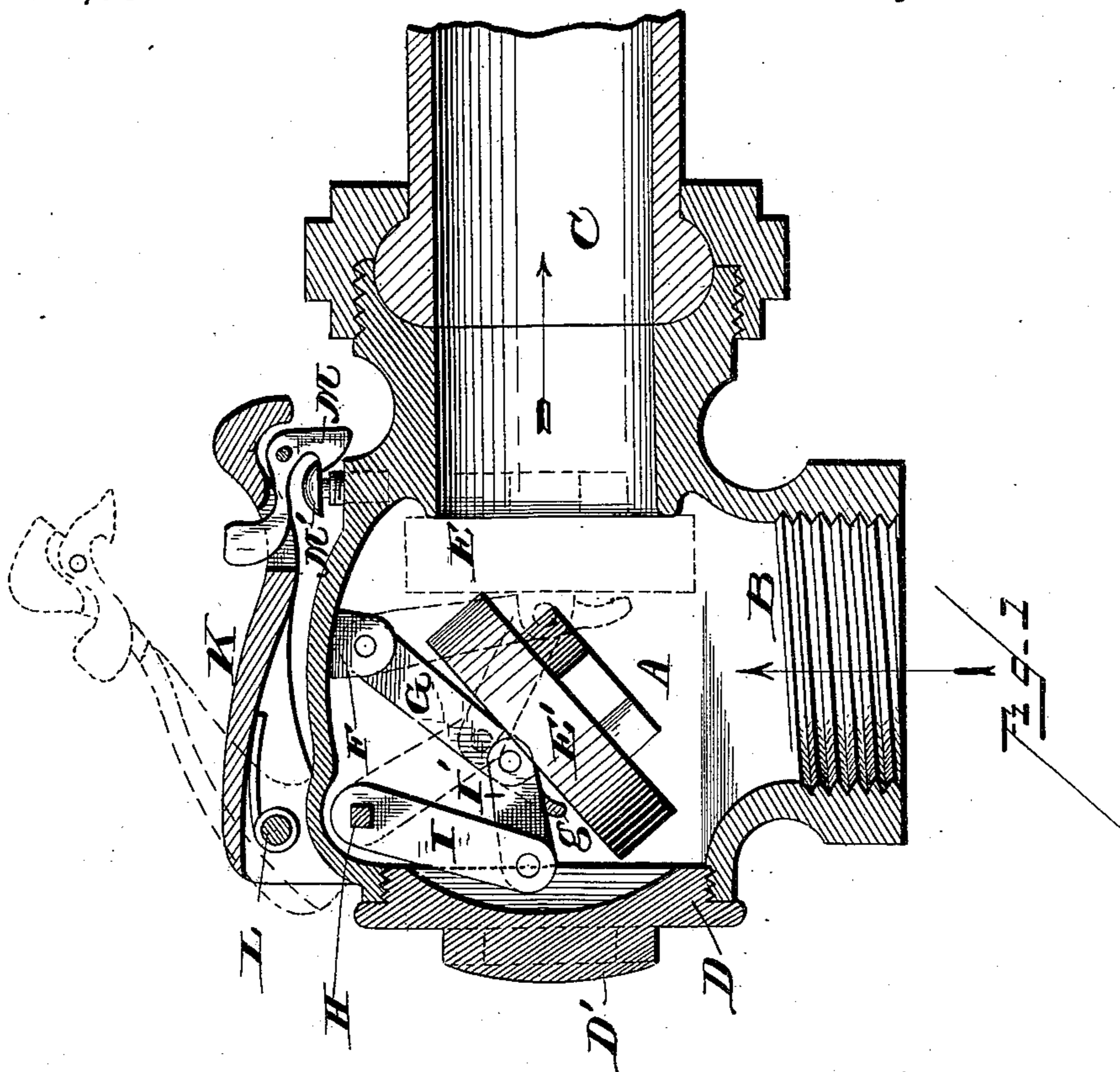


(No Model.)

W. E. WOOD.  
RADIATOR VALVE.

No. 428,031.

Patented May 13, 1890.



WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLIAM E. WOOD, OF UTICA, NEW YORK.

## RADIATOR-VALVE.

SPECIFICATION forming part of Letters Patent No. 428,031, dated May 13, 1890.

Application filed January 15, 1890. Serial No. 337,006. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM E. WOOD, a citizen of the United States, residing at Utica, in the county of Oneida and State of New York, have invented new and useful Improvements in Radiator-Valves; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in radiator-valves for heating purposes, wherein the valve is operated by lever or levers within the casing, acted upon by a foot piece or pedal upon the outside of said casing and operating in such manner that the valve shall be fully opened or closed by a single movement externally applied.

My invention consists, first, in the combination of the valve-casing, of a free valve-disk, a rocking arm or foot-piece for closing the valve, levers connecting the foot-piece and disk, a guide for directing said disk to its seat, and a spring for acting on the foot-piece to hold the disk closed, and to certain details in the arrangement and construction of parts, all as hereinafter explained.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of the improved valve, showing one manner of connecting and operating it from the foot piece or pedal, showing the valve open in full and closed in dotted lines. Fig. 2 is a similar view showing the valve connected to the rock-lever through a rock-arm and link.

The casing or valve-body A is of any usual or preferred construction, having the inlet B and outlet C, and also with an internally-screw-threaded hand-hole D and cap or cover D' for the same, through which the valve and its operating parts may be inserted and secured in their proper positions within the casing.

The valve-seat E at the outlet-pipe may be constructed in any usual or preferred manner, as also the free valve-disk E'.

Cast upon the inner face of the valve-casing at a point above and slightly in rear of the valve-seat is a lug or ear F, which has pivoted thereto and depending therefrom an arm G, to which is connected the valve-disk

E' through lug or ear e, projecting from the rear face of the disk for guiding said valve to its seat. The lower end of the arm G may project down beyond its point of connection with the disk to form a lug or toe g, or other means be provided which act to hold the disk in an upright position or cause its rear face to maintain its parallel relation relative to the arm, and thereby insure the valve being properly guided to its seat.

Mounted in suitable bearings in the casing is a rock-shaft H, passing through any steam-tight joint, and to which is rigidly connected within the casing an arm or lever I, and which arm or lever I is in turn connected to the valve-disk through a connecting arm or link I'. The rock-shaft H extends outside the casing, and has rigidly connected thereto a foot piece or pedal K, which extends up over the upper face of the casing.

Connected or mounted upon a suitable lug connected to the casing is a coil-spring L, having one arm extend out to engage the lower face of the foot piece or pedal and acting thereon in such a manner as to throw the same upward and away from the face of the casing and through said pedal to rock the shaft H, and through it the arm or lever I, and through the link I' to act to carry the valve to its seat, and, as the valve works to its seat with the pressure, the greater the pressure the tighter the disk will be forced to its seat.

Connected to the forward or free end of the foot piece or pedal is a spring-catch M, and formed with or connected to the casing is a hook or catch M', with which the spring-catch on the foot piece or pedal engages, and by such engagement holds the same down upon the face of the casing and against the pressure of the spring, thus holding the valve open, the foot piece or pedal being operated by pressure applied thereto in any preferred way.

Where the arm or lever I is connected to the disk through a short link I', as shown in Fig. 1, the lever and link act as a toggle; but where the link is made longer, as shown in Fig. 2, the arm or lever I acts as a rock-arm and the link as a connection between the same and the valve-disk. If found desirable, the link may be rigidly connected to the disk and the parts drawn back in suitable guide or bearings in a straight line, or the swinging

arm G may be connected directly to the rock-shaft and do away with the connecting-links inside the body or casing, in which case the rock-shaft would be moved nearer to a perpendicular line over the disk; but the construction shown in Fig. 1 is preferred, where the device is used with a low pressure of steam and the pressure thereof is not sufficient to force the valve to its seat.

10 The operation of the device is similar to that described in Letters Patent granted to me June 25, 1889, No. 405,861, wherein the valve is carried to its closed position by the spring acting on the pedal when the hook or  
15 catch is released and forced open by manual or foot pressure applied to said pedal, and wherein the valve is either forced fully open or closed and cannot stand at any intermediate point.

20 In the normal position of the parts the valve is held closed; but when it is desired to open the same by forcing the foot piece or pedal downward into engagement with the catch, the force will act on the rock-shaft,  
25 levers, and links, and draw the valve open

against the pressure, as shown in Fig. 1, in a manner that will be readily understood.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a valve-casing, a free valve-disk, a rocking arm or foot-piece for closing the valve, levers connecting the foot-piece and disk, a guide for directing said disk to its seat, and a spring for acting on the foot-piece to hold the valve closed, substantially as set forth. 30 35

2. The combination of a valve-casing, a foot piece or pedal, a rock-shaft leading to the inside of the casing, a free valve-disk, links or levers connected to the valve, and a swinging arm connected to the casing and to the valve acting to support and guide the same to its seat, substantially as set forth. 40

In testimony whereof I affix my signature 45 in the presence of two subscribing witnesses.

WILLIAM E. WOOD.

Witnesses:

HENRY H. TIMERMAN,

CHAS. M. BUTLER.