

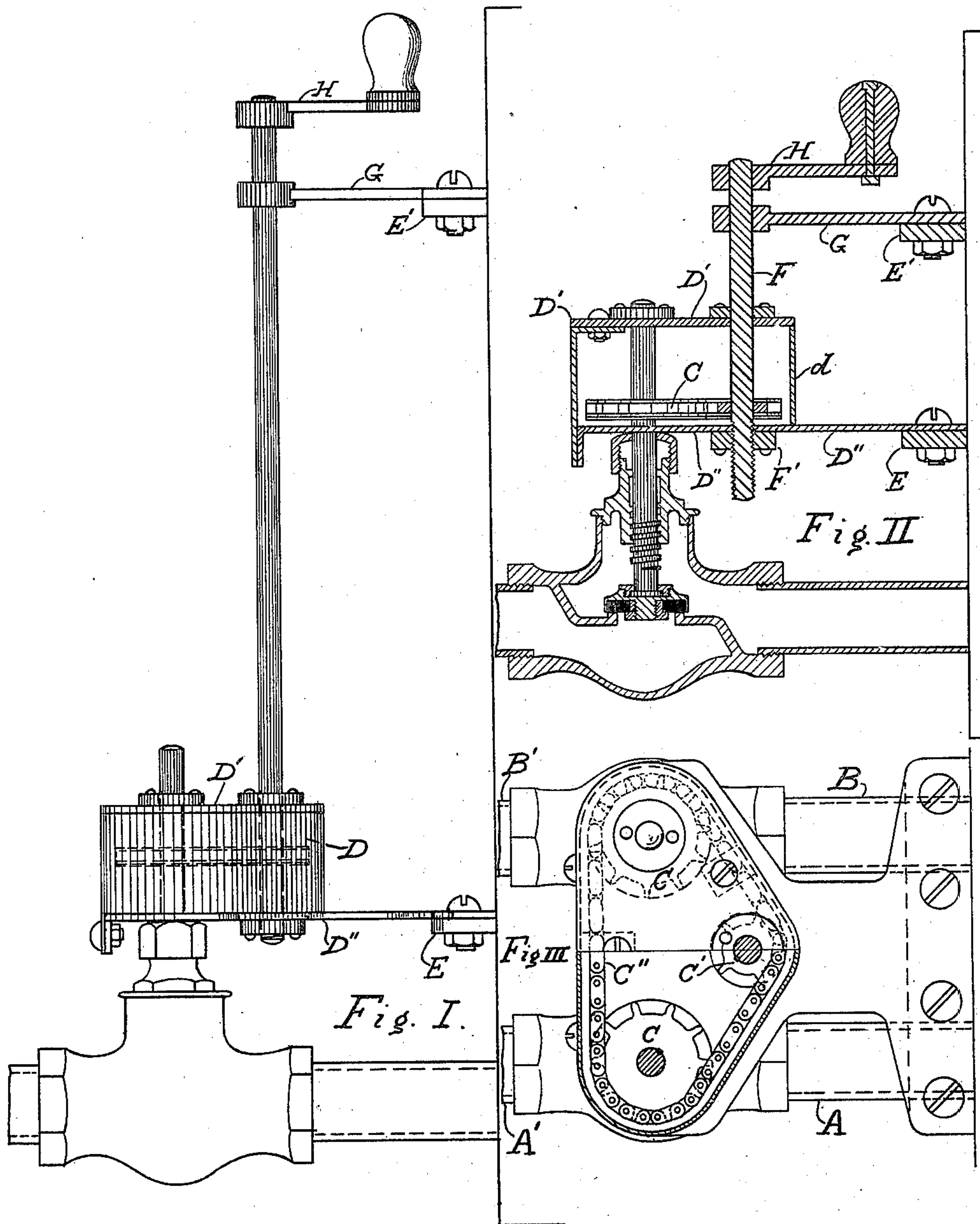
(No Model.)

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MECHANISM FOR OPERATING VALVES.

No. 600,944.

Patented Mar. 22, 1898.



WITNESSES:

C. H. Rosefield  
H. H. Burdett

INVENTOR

Fredk. A. Burdett.

BY

G. Littman

ATTORNEY

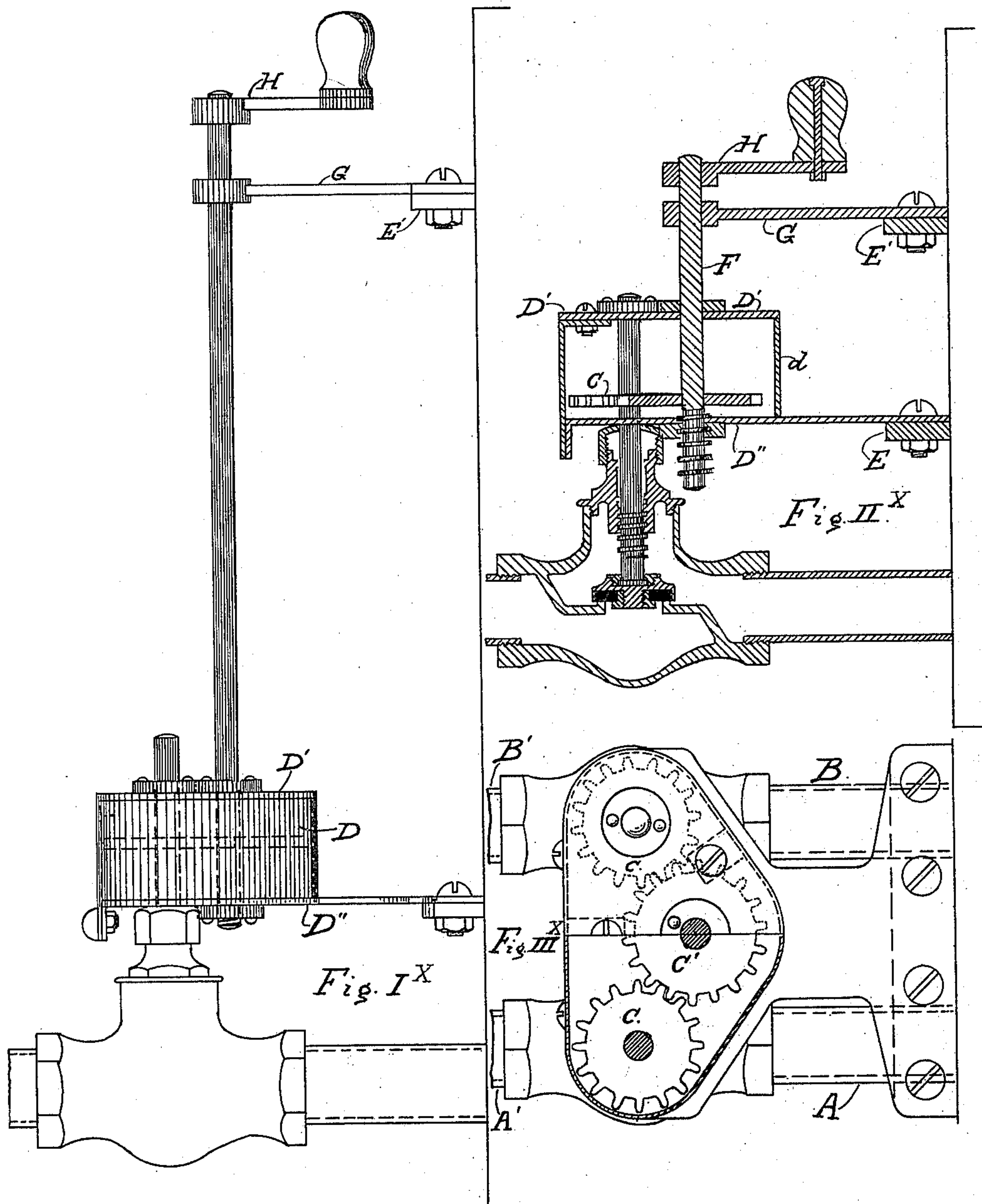
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INVENTOR

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*J. J. Pittman*

ATTORNEY



# UNITED STATES PATENT OFFICE.

FREDERICK A. BURDETT, OF NEW YORK, N. Y.

## MECHANISM FOR OPERATING VALVES.

SPECIFICATION forming part of Letters Patent No. 600,944, dated March 22, 1898.

Application filed February 6, 1897. Serial No. 622,350. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK A. BURDETT, a citizen of the United States, residing at New York city, State of New York, have invented certain new and useful Improvements in Mechanism for Operating Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the operation of valves for general use, but is especially adapted for valves in the inlet and outlet pipes of steam-radiators, having for its object to operate both valves simultaneously and to produce a simple and inexpensive construction, while at the same time the mode of operation is made more handy and convenient. To this end the inlet and outlet pipes of the radiator are arranged on one side, and the valves thereon are provided with mechanism of a peculiar construction and combination, as will be more fully set forth hereinafter and particularly pointed out in the claims.

In the accompanying drawings, illustrating the present invention, Figure 1 is a side elevation of my improved attachment serving to operate both valves of a steam-radiator simultaneously. Fig. 2 is a cross-section through the same. Fig. 3 is a plan view, partly in cross-section. Fig. 1<sup>x</sup> is a side elevation of a modified form of my device. Fig. 2<sup>x</sup> is a cross-section through the same; and Fig. 3<sup>x</sup> is a plan view, partly in cross-section.

Referring to the drawings, in which like letters of reference denote corresponding parts throughout the several views, A is the inlet-pipe of a steam-radiator, (not shown,) and B the outlet-pipe. The steam passes from a supply-pipe A' into the inlet A through a valve and passes out through B to the exhaust B' through a similar valve in the ordinary well-known manner.

The valve-stems according to the form represented in the drawings are provided with chain-wheels C, having any suitable number of sprockets. Said chain or sprocket wheels are well secured on the valve-stems and are surrounded by a casing D, composed of two horizontal plates D' and D'', being united by a rim d, secured to the plates by rivets, screws, or in any other suitable manner. The valve-

stems pass through openings in the plates D' D'', which contribute to guide them in their rotatory and longitudinal motion. The lower plate D'' is secured to a lug E, projecting from the body of the radiator, as indicated in the figures, by screws or otherwise.

Through the casing above described, about midway between the valve-stems, but considerably out of line, as clearly shown in the plan view, a shaft F is passed through a suitable bearing in the upper plate D' into the lower plate D'' through a screw-threaded opening F', the lower end of said shaft being correspondingly screw-threaded for this purpose, the screw-thread having a pitch suitable to cause the shaft to move longitudinally at the same rate as the valve-stems. A sprocket-wheel C' is keyed upon the shaft F, and a chain C'' is placed around the sprocket-wheels C and C'.

The shaft F extends upwardly to the top of the radiator or near the top thereof, being guided in an eye at the end of an arm G, which is secured to a lug E', projecting from the body of the radiator. A crank H is secured to the upper end of the shaft, serving to operate the same and the valves by means of the sprocket-wheels and chain, as will be readily understood.

It is evident that by my arrangement the inconvenience of stooping down experienced in operating ordinary valves for steam or other radiators is entirely dispensed with. The crank is located in a convenient position to operate both valves simultaneously. By turning the crank the rotary motion of the shaft is transferred by the sprocket-wheel C' to the chain, which compels the sprocket-wheels C C to turn simultaneously in the same direction, thereby opening the valves and screwing up their stems. The shaft F, by means of its lower screw-threaded end, rises in the same manner, thus maintaining the sprocket-wheel C' always at a level with the sprocket-wheels C C and the chain, which is elevated with the sprocket-wheels to the top of the casing near the upper plate D', as indicated in Fig. 1. When the crank is turned in the opposite direction to close the valves, the shaft F is screwed down in its nut F', and the sprocket-wheels C C in screwing down the valve-stems follow in level with



the sprocket-wheel C' until they come down near the bottom plate D'' of the casing, as indicated in Fig. 2.

I do not limit myself to the use of my device for the valves of radiators, as evidently it can be employed with other valves; nor do I limit myself to the exact details of construction illustrated and described, as many variations may be made in the same without departing from the nature of the invention. Thus the mechanical means of the sprocket-wheels and chain may be substituted by gear-wheels meshing with each other, as shown in the modified form of construction, Figs. 1<sup>x</sup>, 2<sup>x</sup>, and 3<sup>x</sup>, or other devices.

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

1. The combination with the stems of two or more valves adapted to reciprocate, of a shaft screw-threaded at its lower end and guided in a corresponding nut, said screw-threaded shaft being provided with means to transfer motion upon the valve-stems, said

shaft being extended upwardly to a convenient height and carrying at the upper end a crank, substantially as described and for the purpose set forth.

2. In radiators the combination with reciprocating valve-stems, carrying gear-wheels, of a shaft having a screw-thread at its lower end of the same pitch as the screw-thread of the valve-stems and guided in a corresponding nut, said screw-thread being provided with a gear-wheel adapted to mesh with the gear-wheels on the valve-stems, said shaft extending upwardly to a convenient height near the top of the radiator and provided at its upper end with suitable means for operating the valves, substantially as described and for the purpose set forth.

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

FREDERICK A. BURDETT.

Witnesses:

W. RALPH SQUIRE,  
WALTER C. COUCH.