(No Model.)

J. ARTHUR.

SAFETY VALVE.

No. 249,218. Patented Nov. 8, 1881.

Fig: 1

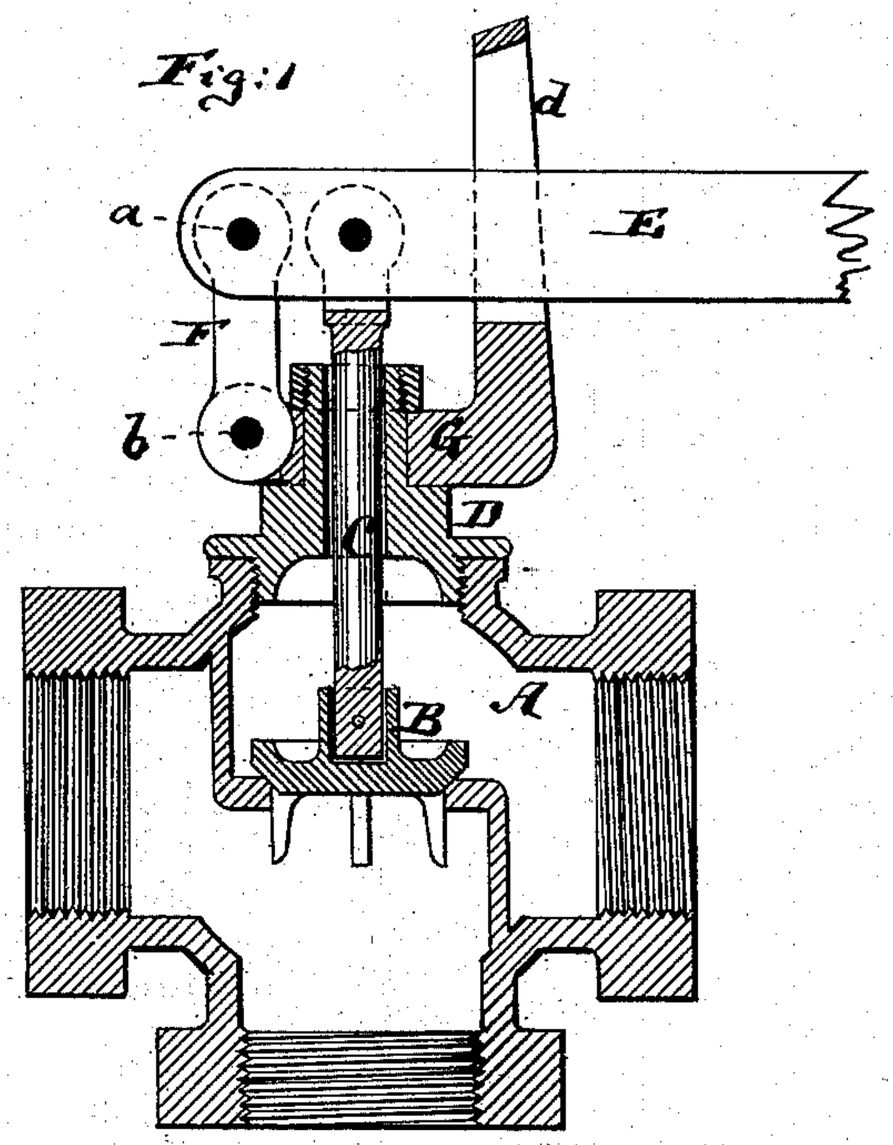


Fig: 2

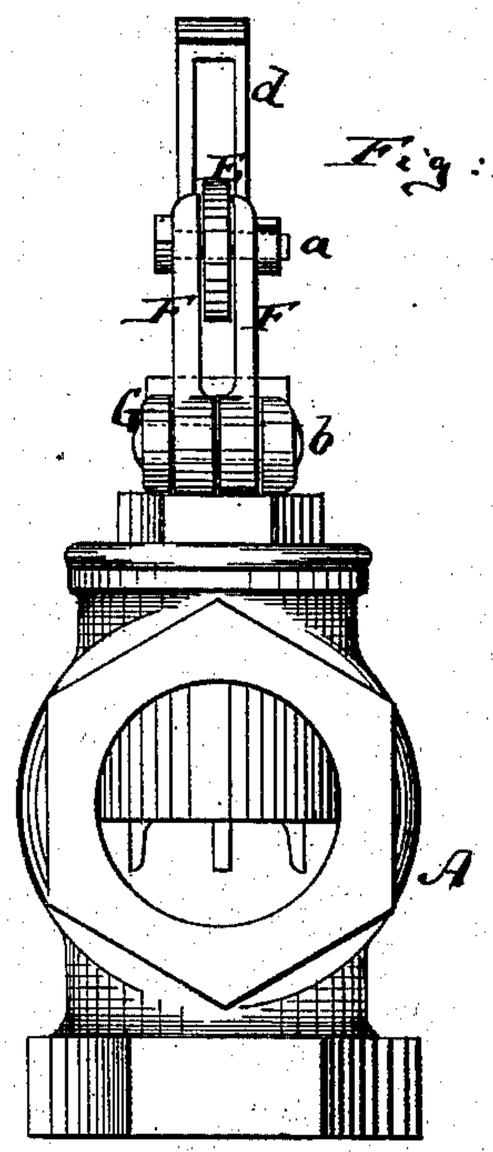
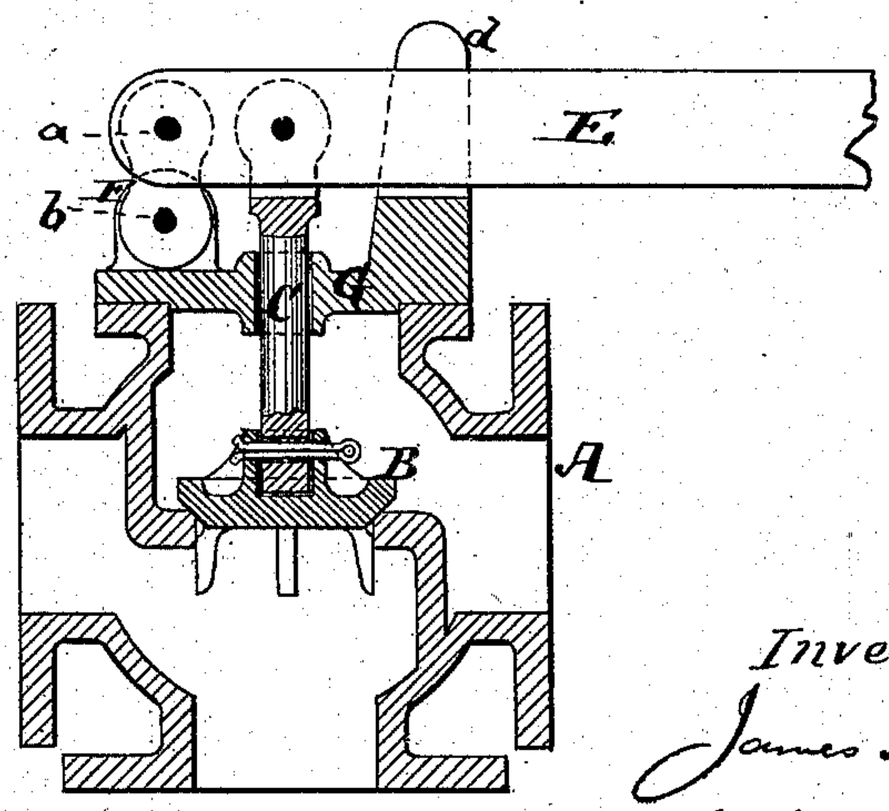


Fig: 3



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UNITED STATES PATENT OFFICE.

JAMES ARTHUR, OF JERSEY CITY, ASSIGNOR OF ONE-HALF TO WILLIAM S. CARR, OF PATERSON, NEW JERSEY.

SAFETY-VALVE.

SPECIFICATION forming part of Letters Patent No. 249,218, dated November 8, 1881.

Application filed July 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES ARTHUR, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improved Safety-Valve, of which the following is a specification.

Figure 1 is a vertical central section of my improved safety-valve. Fig. 2 is an end elevation of the same, and Fig. 3 a vertical central section of a modification of the same.

This invention relates to a new combination of parts which support the lever of a safety-valve; and it consists in combining said lever with a link or pair of links, and with a supporting L-shaped plate one arm of which constitutes the guide-yoke, in such manner that said links are pivoted to said lever and to said plate, as hereinafter described.

My invention produces a most compact combination of parts, which enables even an unskillful person to apply a safety-valve properly to the boiler.

The modification shown in Fig. 3 represents the usual form of apparatus for larger valves, and that shown in Figs. 1 and 2 for smaller valves.

In these figures, the letter A represents that part of the boiler or steam-pipe to which the safety-valve B is to be applied. This valve is attached in suitable manner to the stem C, that passes through the top guide piece or bonnet, D, of the structure A. The upper end of the stem C is pivoted to the lever E, which is weighted in usual manner. The end of the lever E is, by a pin, *a*, pivoted to a link or two links, F F, which, when two are used, straddle said lever, as shown in Fig. 2, and which at their lower ends are, by a pin, *b*, pivoted in the forked end of an L-shaped plate, G, the horizontal part of which embraces and rests upon the bonnet D. The vertical part of the plate G constitutes the forked or slotted guide *d* of the lever E.

The links F F, when used in pairs, are made with enlargements or hubs at their lower ends, as shown in Fig. 2, so that they will be in contact with each other at the lower part; but if desired they may be rigidly united at their lower ends, in which case they would be a single forked link, straddling the lever E from below. But instead of a double or forked link, a single link may be used. As the lever E plays up and down the links F share in the movement and permit the valve-stem C to move vertically, thus doing away with the objectionable side play of said valve-stem.

The valve, lever, and connecting-piece G and links can be manufactured as a compact structure and furnished to a boiler-maker, so that the latter can readily place this compact structure upon the boiler or part A, thereby completing the entire attachment and doing away with the necessity of providing a seat or bearing for the pivot *b* in any part of the body of the boiler or of the dome or structure A. The modification shown in Fig. 3 contains precisely the same elements as that shown in Fig. 1; but the horizontal part of the plate G in Fig. 3 performs the additional function of constituting the covering plate or cap for the structure A, which is customary in larger valves.

I am aware of the fact that the levers of safety-valves have been combined with links and guides, and that such guides have been secured adjustably to plates, and that the links have been hung to such plates and to attachments on the boiler, and that the valve-casings have been constructed with arms for pivoting and guiding the lever; and I do not claim any of these features, my invention being limited to the combination, with the lever, valve, stem, and casing, and links, of the ⌊-shaped part, constructed in one piece in the manner described, whereby I am enabled to effect the same results as heretofore, but by means of a structure made more simple and less expensive and more easily applied than those previously used.

I regard the special construction of links F when made in pairs so as to embrace the end of the lever E as of advantage, as it assists in keeping the lever E properly aligned, and gives the requisite support and guidance, without requiring expensive mechanism.

I claim—

The attachment for safety-valves, consisting of a plate, G, centrally perforated and provided at one end with ears for the connection of the links F, and with an arm, *d*, at the other end, forming part of the plate and slotted to receive the lever E, as specified.

JAS. ARTHUR.

Witnesses:
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