JOSEPH M. COALE.

Improvement in Slide-Valves.

No. 115,706. Patented June 6, 1871.

Fig. 1

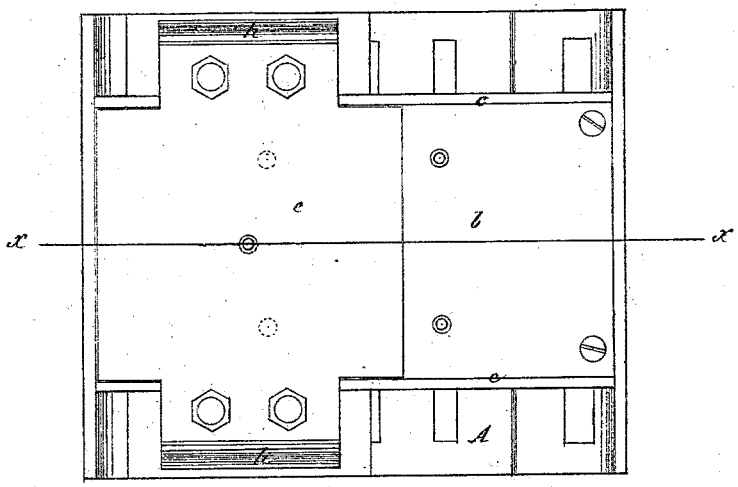
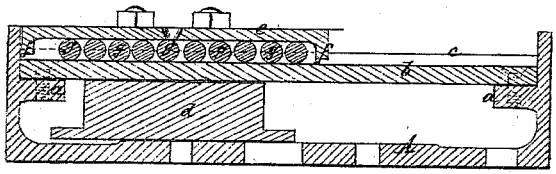


Fig. 2.



Witnesses:

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JOSEPH M. COALE, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN SLIDE-VALVES.

Specification forming part of Letters Patent No. 115,706, dated June 6, 1871.

To all whom it may concern:

Be it known that I, JOSEPH M. COALE, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and useful Improvement in Slide-Valves; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a top view, and Fig. 2 is a section lengthwise of the bridge and crosswise of the valve and rollers.

This invention is an improvement on slide-valves for steam-engines of the class in which anti-friction rollers are employed to support the valve. The invention aims at simplifying the construction of such valves, thereby lessening their cost and liability to get out of order while increasing their facility of repair. To this end I employ a bridge-plate, resting on lugs of the steam-chest, for supporting the rollers, in conjunction with a plate resting thereon, and which is extended on each side to adapt it to be attached to the valve below. The bridge has longitudinal flanges, which, with transverse flanges on the aforesaid plates, keep the rollers always in place or position. The flanges of the bridge also serve to stiffen or strengthen it, so that no considerable thickness of the same is necessary to enable it to withstand the strain when the valve rises in reversing the engines. According to my improvement the parts are few in number, simple in construction, occupy a minimum of space, are economical of manufacture, easily put together and taken apart, and exceedingly efficient and satisfactory in operation.

It will be understood from the foregoing that I desire to claim only the construction and arrangement of the flanged bridge and plate in relation to each other and the parts connected therewith, being well aware that anti-friction rollers have been before used for the same or essential purposes as they are in my invention.

Referring to the drawing, A is a steam-chest. *a a* are ledges, which are cast with and extend inwardly from the sides of the chest, and are placed parallel to and at the same height above the valve-seat. *b* is a bridge, fastened at its ends upon the ledges *a*, and extending across the chest, said bridge having upwardly-projecting flanges *c* at its sides. *d* is the valve, which is partially suspended from the bridge *b* by means of a plate, *e*, bolted at its ends upon blocks *h* that are secured to the valve at each end thereof so as to extend above the tops of the flanges *c* at each side of the bridge *b*, the plate *e* being above the bridge and the valve below it, and said plate being furnished with flanges at each side which project downward between the flanges *e* and approach so near the upper side of the bridge *b* as to prevent the rollers from escaping between said bridges and said flanges *f*. *g* are the anti-friction rollers placed between the bridge *b* and the plate *e*, and kept in position by means of the flanges *c* and *f*, said rollers being of a diameter sufficient to prevent the face of the valve from more than barely touching its seat, thereby preventing undue friction thereof.

Where the valves are very large, as in marine engines, it will be necessary to bolt the plate *e* at its center, also to the valve, so as to prevent the plate from springing; and in such case two bridges will have to be employed, placed at a sufficient interval apart to allow the center-bolts to pass between them.

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

The bridge *b*, having upwardly-projecting side flanges *c*, and secured at each end to the ledges *a a* of the steam-chest A, the plate *e*, provided with pendent end flanges *f*, and extended laterally to unite with blocks *h h* of the valve *d*, the anti-friction rollers *g g* being arranged between said bridge and plate, as herein shown and described, for the purpose specified.

JOSEPH M. COALE.

Witnesses:

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