Davis & McGill,

Slide Valve.

No. 86,650. Patented Feb. 9. 1869.

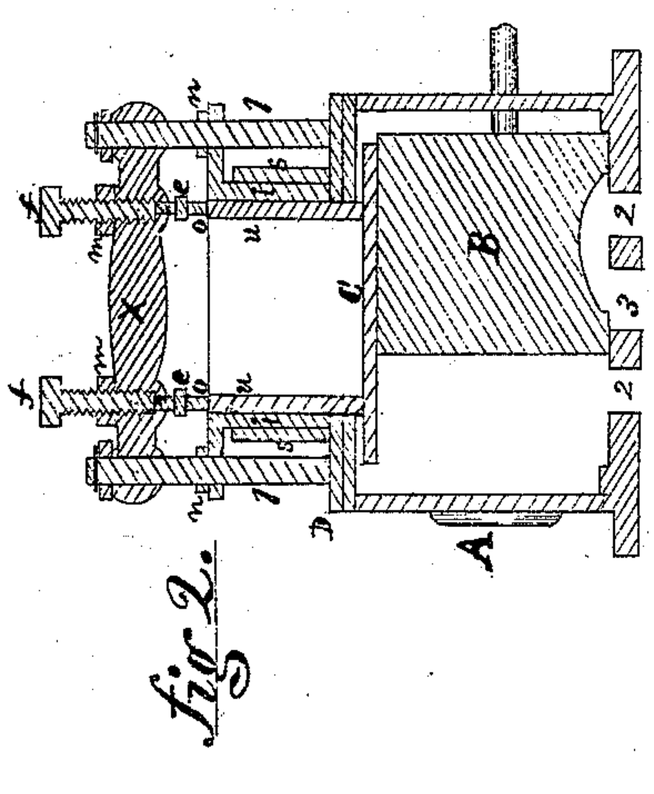

Fig 2.

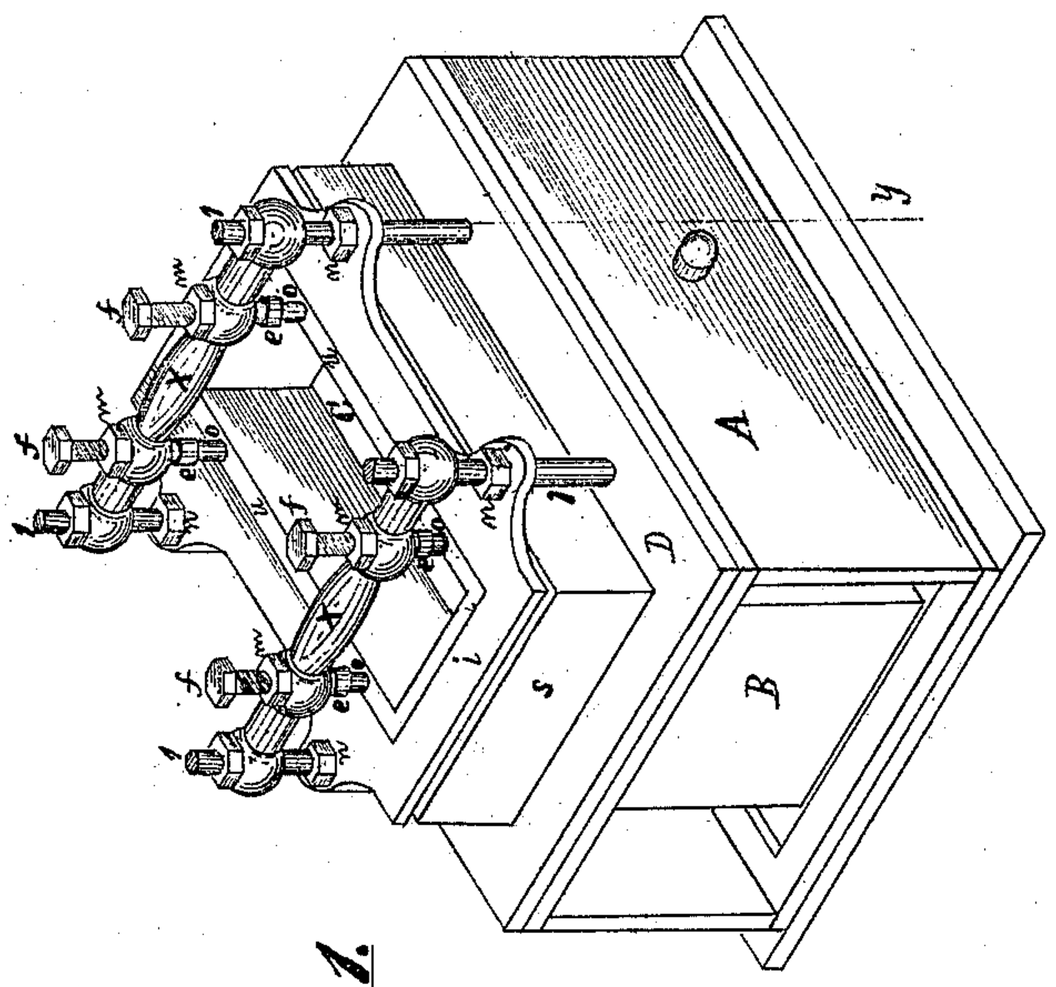

Fig 1.

Witnesses
A. C. Johnston
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By their attorney J. J. Johnston

UNITED STATES PATENT OFFICE.

ANDREW J. DAVIS AND JOHN J. McGILL, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN STEAM-ENGINE SLIDE-VALVES.

Specification forming part of Letters Patent No. **86,650**, dated February 9, 1869.

To all whom it may concern:

Be it known that we, ANDREW J. DAVIS and JOHN J. McGILL, of the city of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Slide-Valves for Steam-Engines; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our invention consists in so constructing a balance slide-valve for steam-engines that the plate used for relieving the valve from the pressure of steam will yield to the variation in the expansion of the valve and the plate which covers it.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

In the accompanying drawings, which form part of our specification, Figure 1 is a perspective view of a steam-chest and slide-valve of a steam-engine provided with our improvement, representing one end of the steam-chest removed. Fig. 2 represents a transverse section of the same, cut through at line *y* of Fig. 1.

In the drawings, A represents an ordinary steam-chest of a slide-valve engine. D represents the lid or cap of the steam-chest. The lid is provided with a flange, *s*, and four standards, 1, which are provided with screw-nuts *n*. The standards 1 are used for supports for the cross-pieces *x*, in which are set-screws *f*, provided with jam-nuts *m*.

The plate C, which is used for the purpose of relieving the slide-valve B from the pressure of steam, is provided with a flange, *u*, which projects up inside of the packing-ring *i*, which is placed inside of the flange *s* of the lid D.

The packing-ring *i* is forced and held down in the desired position by means of screw-nuts *n* on the standards 1.

In the upper edge of the flange *u* of the plate C are placed four glass pins, *o*, which are arranged so as to come directly under the points of the set-screws *f;* and between the set-screws *f* and glass pins *o* are placed small pieces of gum, (marked *e*.)

The gum pieces *e* are used for the purpose of allowing the plate C to yield to the variation or difference between the expansion of the plate C and valve B, and at the same time hold the plate C in close contact with the top of the valve B without undue friction between the plate and valve.

By the arrangement of the set-screws *f* and gum pieces *e*, placed between the plate C and the points of the set-screws, the plate C will have that sensitive action which is necessary for relieving the valve from undue friction and compensating for the variation in the expansion of the several parts of the steam-chest, slide-valve, and the parts connected therewith.

The glass pins are used for non-conductors of heat, so as to relieve the gum pieces *o* and set-screws *f* from the heat caused by the hot steam in the steam-chest.

The steam-ports are marked 2 and 3. The steam may be admitted to the steam-chest in the ordinary manner.

The skillful mechanic will readily understand the construction and operation of our improvement from the foregoing description, and by reference to the accompanying drawings, without further description of its construction, and will readily see and understand that its construction can be varied in form and proportion, and the same good result obtained.

Having thus described the nature, construction, and operation of our improvement, what we claim as our invention is—

1. The combination of the yielding material between the cap or diaphragm of the slide-valve and the set-screws used for adjusting and holding it to the valve, substantially as herein described.

2. In combination with the above, the non-conductors *o*, substantially as herein described.

ANDREW J. DAVIS.
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Witnesses:
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