(No Model.)

J. RODGERS.

SLIDE VALVE.

No. 561,031. Patented May 26, 1896.

Fig. 1.

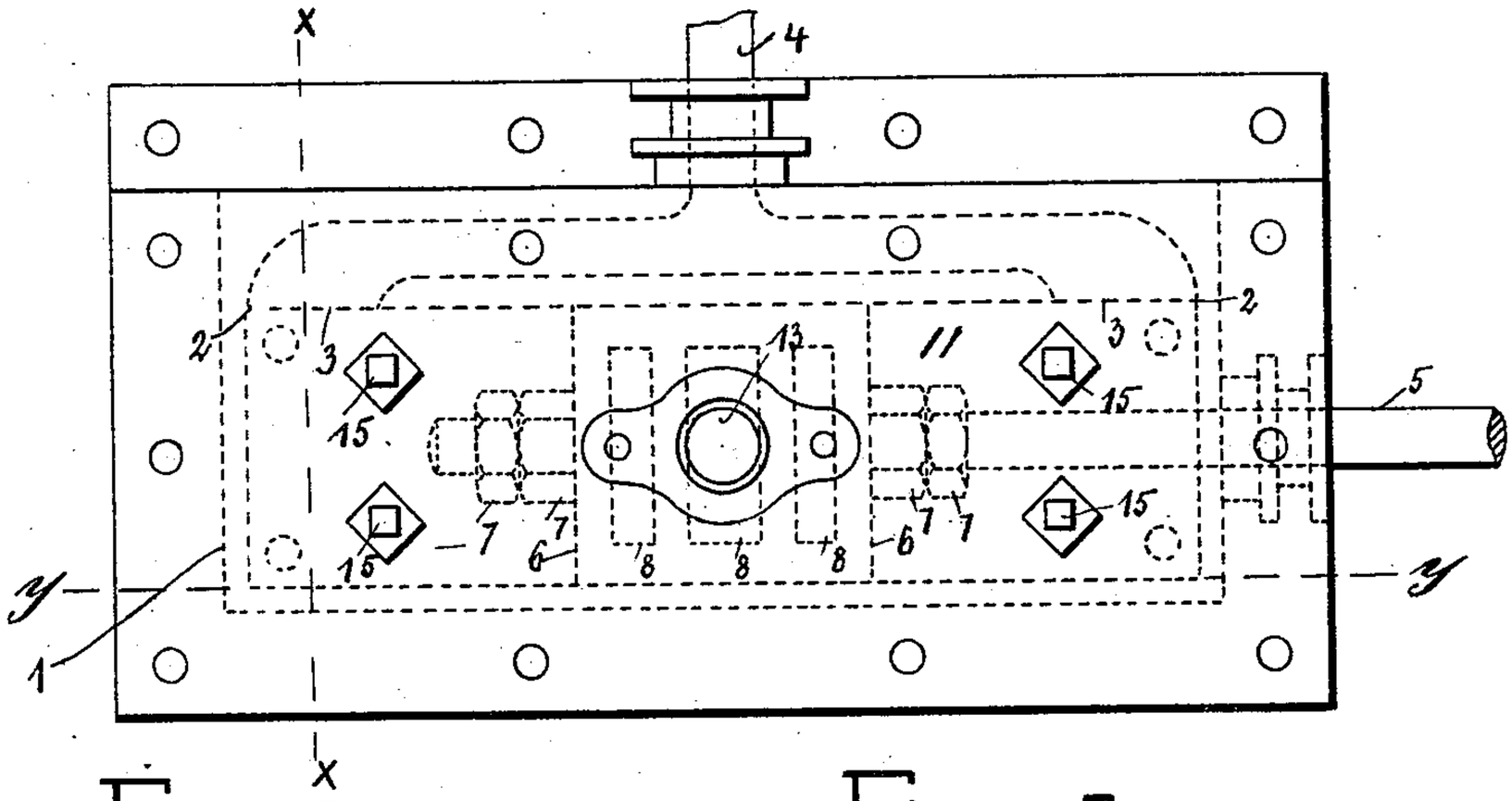

Fig. 2.

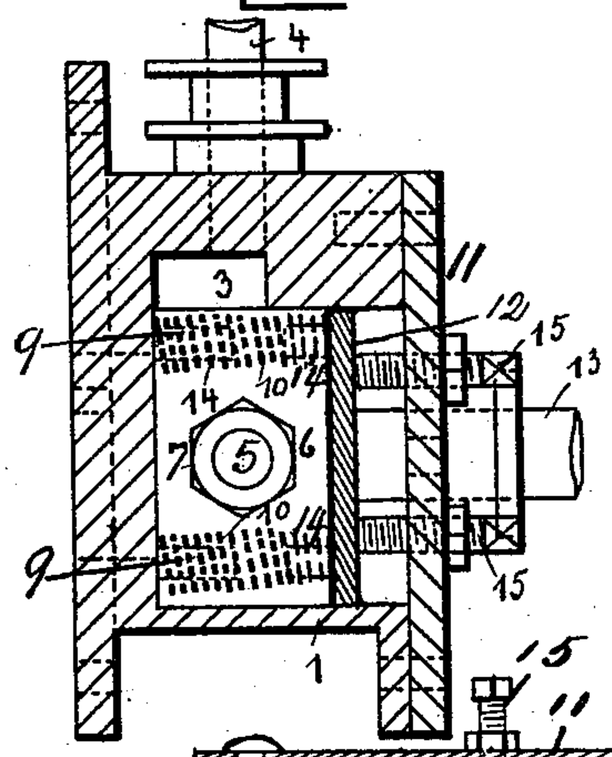

Fig. 3.

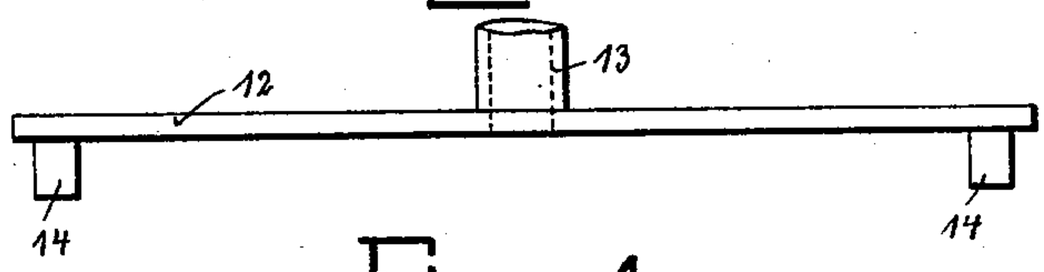

Fig. 4.

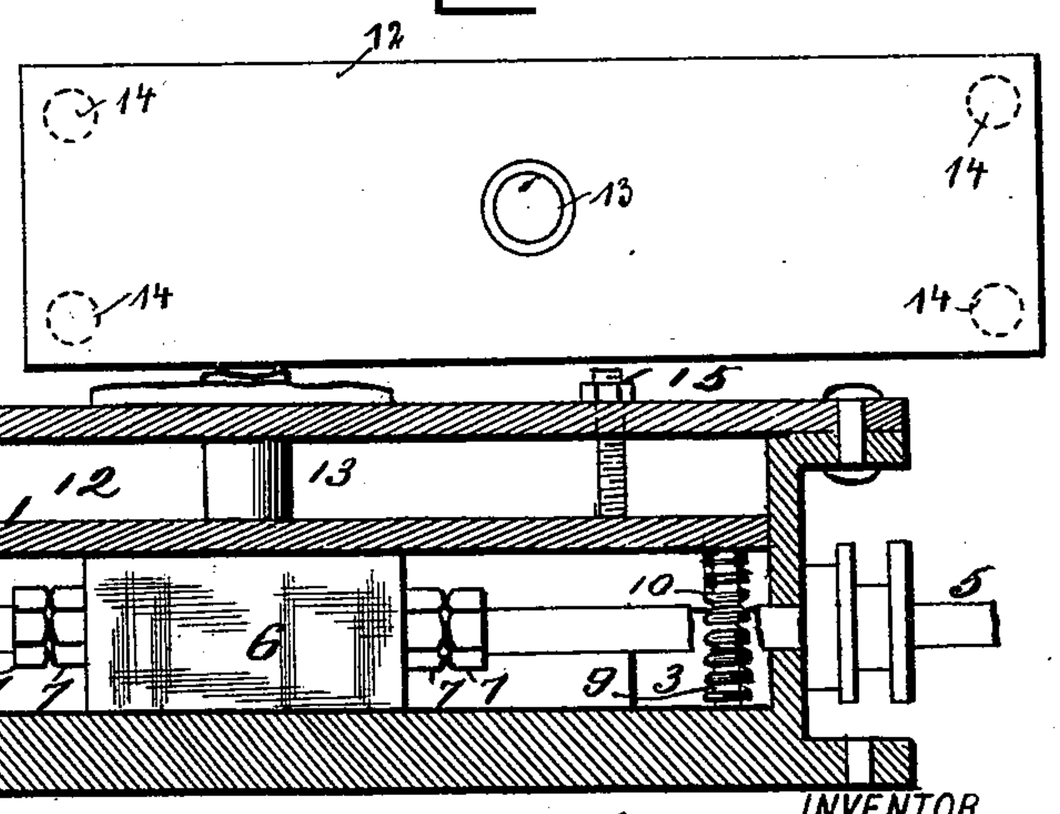

Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES RODGERS, OF ALLEGHENY, PENNSYLVANIA.

SLIDE-VALVE.

SPECIFICATION forming part of Letters Patent No. 561,031, dated May 26, 1896.

Application filed September 7, 1895. Serial No. 561,779. (No model.)

To all whom it may concern:

Be it known that I, JAMES RODGERS, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Slide-Valves; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in slide-valves for steam-engines, and has for its object the provision of novel means whereby the steam-pressure on the back of the valve may be reduced.

The invention has for its further object to produce an equal pressure of steam on both ends of the slide-valve, thereby acquiring a uniformity of pressure and gaining advantages that will be apparent.

A still further object of the invention is to construct a valve of the above-referred-to class that will be strong, durable, comparatively inexpensive to manufacture, and accurate in its operation.

With the above and other objects in view the invention finally consists in the novel construction, combination, and arrangement of parts, to be hereinafter more particularly described, and specifically pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like figures of reference indicate similar parts throughout the several views, in which—

Figure 1 is a top plan view of my improved slide-valve. Fig. 2 is a horizontal sectional view on the line X X of Fig. 1. Fig. 3 is a side view of the plate. Fig. 4 is a plan view of the same. Fig. 5 is a longitudinal section taken through Fig. 1.

In the drawings, 1 represents the steam cylinder or chest, which is provided on one side with a wall 2, said wall being provided at the lower corners with apertures 3 3 to allow the steam from the entrance-port 4 to pass into the cylinder or chest.

The valve-rod 5 is provided with a slide-valve 6, located in the steam-chest 1, said slide-valve 6 being secured to the rod by means of nuts 7 7 7 7 or in any other suitable manner. The steam-chest 1 is further provided on its underneath side with apertures 8 8 8, and on the base-plate of the same are secured pins 9 9 9 9 for the retention of the springs 10 10 10 10. The cover or top 11 of the steam-chest 1 is provided with a baffle-plate 12 on its underneath side, having secured thereto at its center a tube or steam-port 13, and provided near its ends with pins 14 14 14 14, adapted to engage the springs 10 10 10 10, secured on the pins 9 9 9 9 on the base-plate of the chest 1. The cover or top 11 of the steam-chest is further provided with set-screws 15 15 15 15, which are fitted in screw-threaded apertures and adapted to be screwed downward or upward to adjust the baffle-plate 12.

Operation: The advantages of the above-described valve to reduce the pressure of steam on the back of the valve will be readily apparent, the back of the valve being faced and the baffle-plate faced to the back of the slide-valve, as well as the slide-valve being faced to the steam-chest, so that when receiving steam from the boilers it only acts on both ends of the slide-valve and thereby making an equal pressure on both ends of the slide-valve. The slide-valve is preferably constructed with round edges, so that the same will not strike the edges of the steam-ports and thereby causing the bending of the valve-stem, as is often the case. The baffle-plate is made to fit as snugly as possible on the top of the slide-valve, so as to prevent the steam from escaping above the baffle-plate. It will be observed that the springs may be of any strength desired in order to conform with the boiler-pressure and serve to keep the baffle-plate from tightening on the top of the slide-valve. The tube or steam-port 13, attached to the baffle-plate, will indicate the presence of any steam between the top of the slide-valve and the baffle-plate, and when this occurs the set-screws arranged in the top or cover of the steam-chest are adjusted so as to force the baffle-plate down-

ward and snugly against the back of the slide-valve, at the same time still allowing the slide-valve to move freely and easily. If the set-screws are adjusted properly, there will be no show of steam through the tube 13, and the valve will work smoothly and freely.

It will be noted that by the use of the above-described valve the pressure on the back of the valve will be reduced considerably, and that an engine will be more easily reversed than would be the case without my improved valve, and that it will for these reasons save considerable wear and tear on the engines.

It will be noted, further, that various changes may be made in the details of construction of my improved valve without departing from the general spirit of my invention.

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

In a valve, the combination of the steam-chest, the slide-valve, the baffle-plate resting upon said slide-valve and having pendent pins near its ends, at the corners, springs fitted upon pins projecting from the bottom of said steam-chest and receiving the pins of said baffle-plate, and the adjusting-screws working in the top plate of the steam-chest and engaging said baffle-plate, substantially as set forth.

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

JAMES RODGERS.

Witnesses:
RALPH DAUB,
H. J. LEVIS.