

(No Model.)

G. COOK.  
STEAM CHEST FOR ENGINES.

No. 516.264.

Patented Mar. 13, 1894.

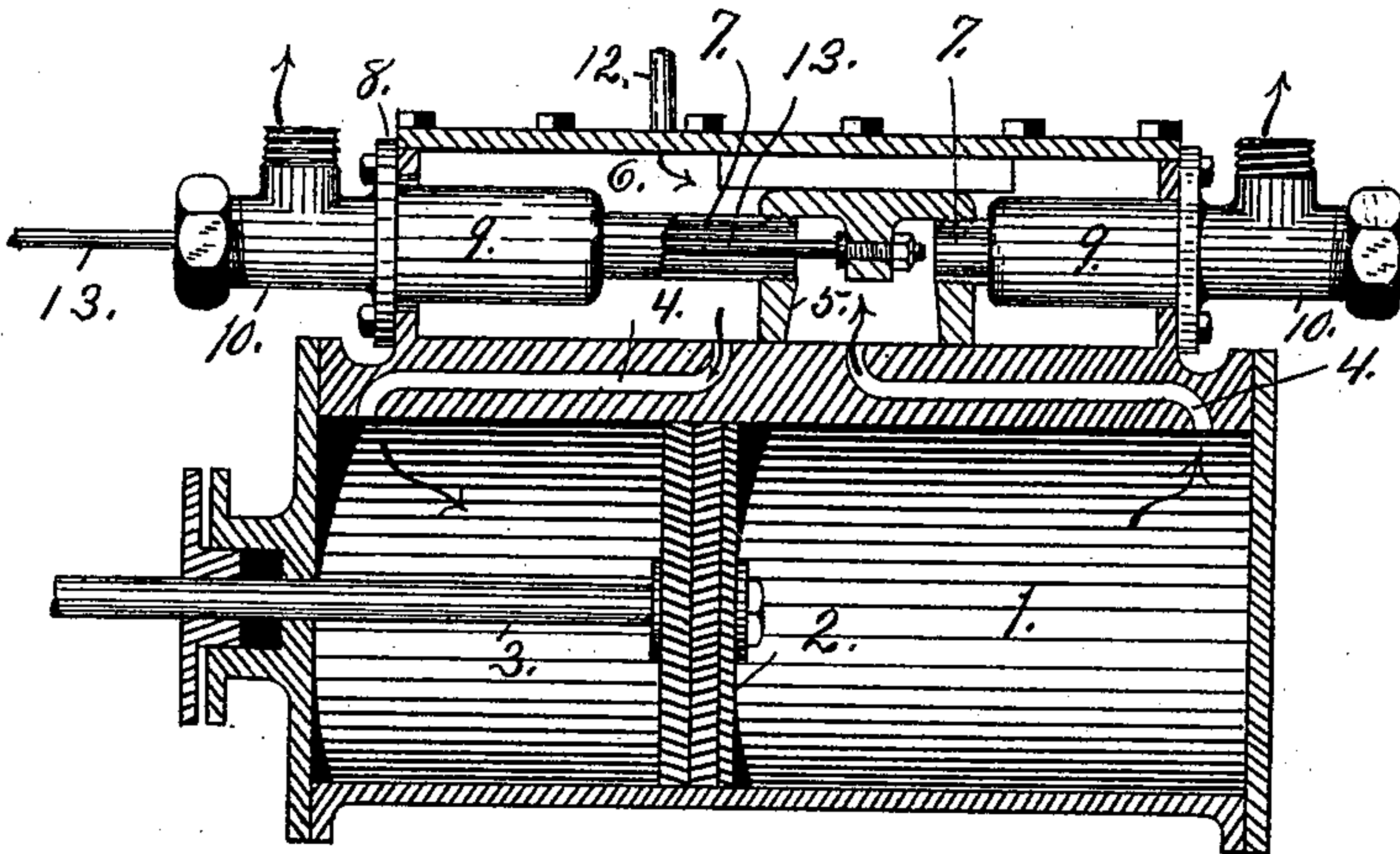


Fig. 1.

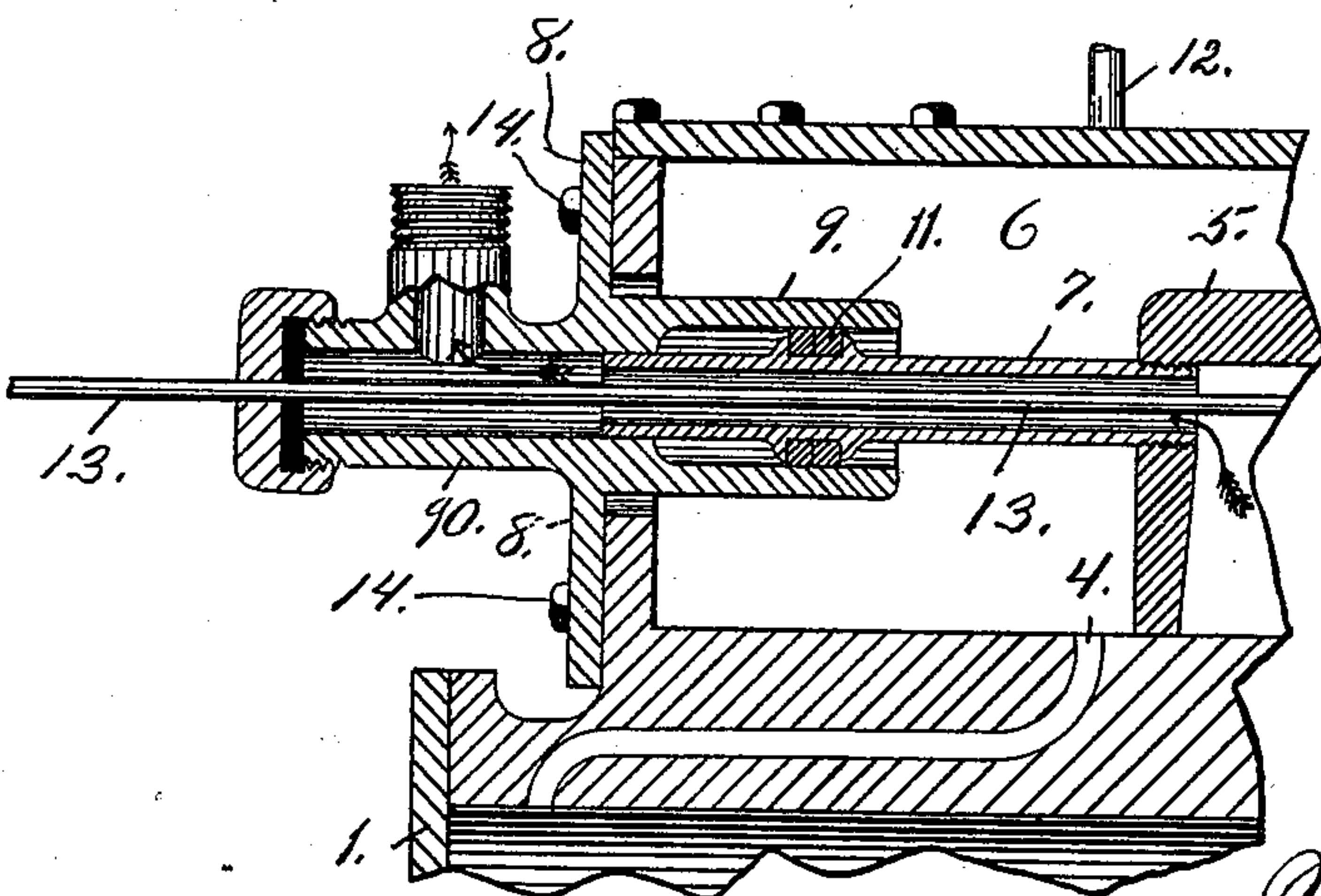


Fig. 2.

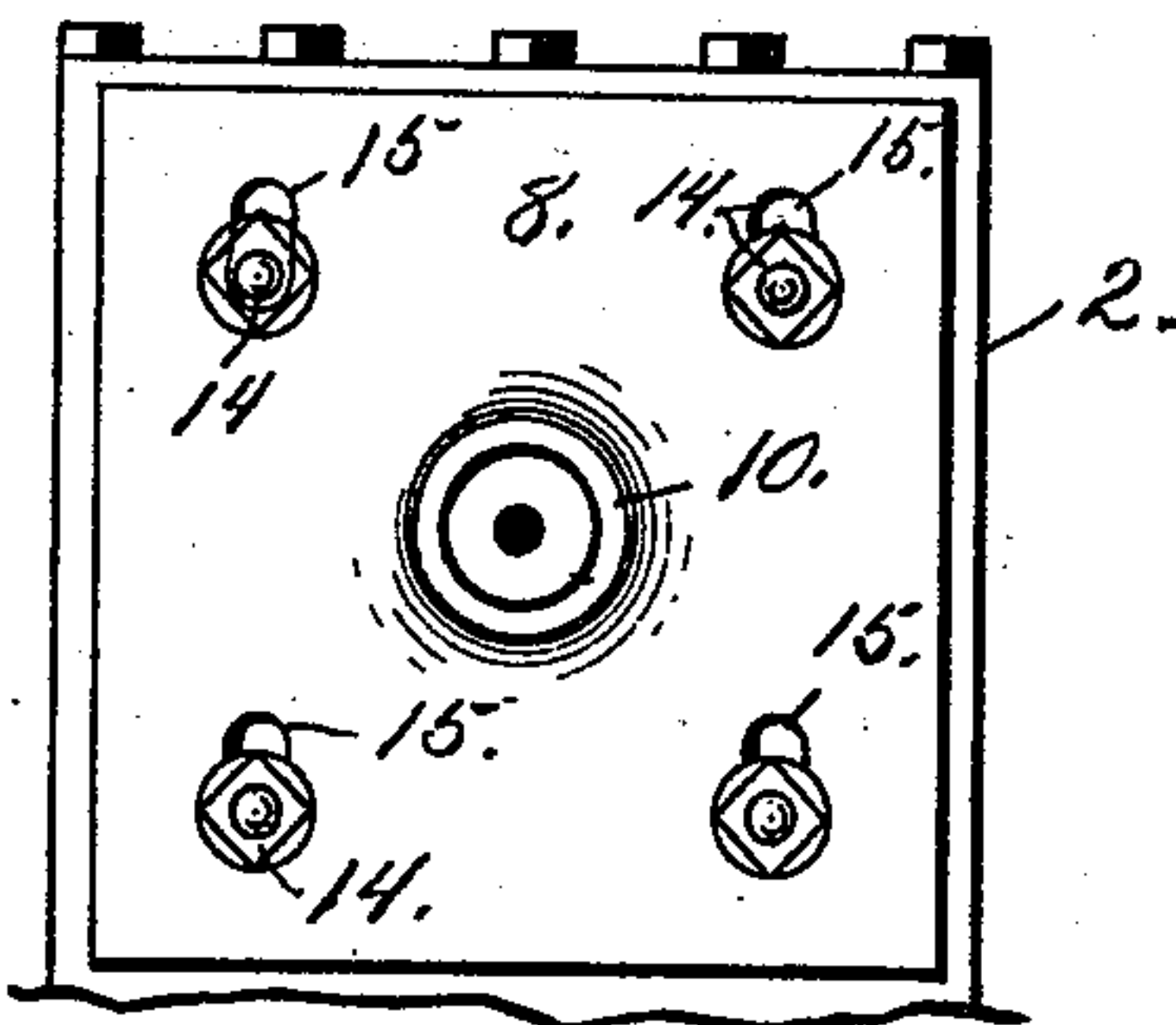


Fig. 3.

Witnesses:  
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# UNITED STATES PATENT OFFICE.

GEORGE COOK, OF BUFFALO, NEW YORK.

## STEAM-CHEST FOR ENGINES.

SPECIFICATION forming part of Letters Patent No. 516,264, dated March 13, 1894.

Application filed October 31, 1892. Renewed January 8, 1894. Serial No. 496,188. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE COOK, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on Steam-Chests for Engines; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in steam-engines and more particularly to an adjustable plate for steam chests of engines.

Its object is to provide the steam-chest of an engine with a plate which is adjustably secured in position so as to compensate for the wear of the valve and prevent the live-steam from entering the exhaust passages.

It consists in the novel and peculiar arrangement of parts and details of construction all of which I will now proceed to definitely describe and claim.

In the drawings before referred to, which serve to illustrate my said invention more fully Figure 1 is a longitudinal section of a steam engine equipped with my improvement. Fig. 2. is a detail sectional view of the same and Fig. 3. is a detail view showing one of the ends of the steam chest.

Referring to the drawings 1. is the steam cylinder having the piston-head 2. piston-rod 3. and steam ports 4. (The construction as far as described is of old and well known form.) The valve 5. which travels within the steam-box 6. is of hollow form and has threaded into its upper end the short sleeves or passages 7. At the ends of the steam-box or chest 6. are arranged the plates 8 having the inwardly projecting sleeves 9. and outwardly projecting sleeves 10. The short sleeves 7 are provided with packing rings 11. and travel within the sleeves 9.

In operation the live steam is fed into the steam-box or chest through the pipe 12. from whence it alternately passes into the cylinder 1. through the passages 4. these passages 4 being opened and closed by the movement of the valve 5. which is reciprocated by means of the valve-rod 13, said rod having

its inner end fastened to the valve 5. and extending out through the sleeves 7. 9. and 10. where it may be connected to the power-shaft (not shown) by eccentric or otherwise. As the steam is passing into the cylinder through one of its passages 4. the exhaust passes out through the other passage and enters the hollow valve 5. from whence it is carried out through the sleeves 7. 9. and 10. arranged at either end of the steam-box.

As the valve 5 becomes worn, the bolts 14 passing through the plates 8. are loosened and as the openings 15 through which they pass are elongated, the plates together with their sleeves and valve are permitted to be moved down taking up the wear of the parts; thus preventing any of the live-steam from entering hollow portion of the valve which would otherwise form a more or less resistance against the exhaust steam.

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

1. In a steam engine consisting essentially of a steam-cylinder, piston and piston-rod, a steam-box having a hollow valve movably connected to the ends of the steam-box, by sliding sleeves adjustably secured in place, the whole arranged to compensate for the wear of the valve, substantially as and for the purpose stated.

2. A steam engine consisting essentially of the cylinder 1, piston 2, piston-rod 3, and steam-passages 4; the steam-box 6 having the hollow valve 5. movably connected to the ends of the steam-box by the sleeves 7, 9, and 10, the sleeves 9, and 10, being adjustably secured by the bolts 14 passing through the elongated openings 15, in the plate 8, the whole arranged and operating substantially as shown and described.

3. The combination with a cylinder, and a slide valve, of an exhaust tube fixed to the valve-chest, and a sliding exhaust tube movable with said valve and fitted in said fixed exhaust tube to discharge thereto, substantially as and for the purposes described.

4. The combination with a piston cylinder, and a slide valve, of an exhaust tube fixed to the valve-chest, a sliding exhaust-tube at-



5 tached to and movable with said valve and fitting in said fixed exhaust tube, and a packing between the fixed and movable tubes, substantially as and for the purposes described.

10 5. The combination with a piston cylinder, and a slide valve, of the connected exhaust tubes which are attached respectively to the valve and valve-chest and said valve and  
10 connected tubes being adjustable toward the valve seat, for the purposes described, substantially as set forth.

15 6. The combination with a piston cylinder, and a slide valve, of the exhaust tubes adjustably fixed to the valve-chest, and the sliding exhaust tubes attached to the valve to communicate therewith and having tight slide joints within the fixed exhaust tubes, whereby the valve and the tubes can be adjusted  
20 to compensate for wear and the steam is exhausted from said valve through the connect-

ed tubes, substantially as and for the purposes described.

7. The combination with a piston cylinder, a valve chest, and the slide valve, of the exhaust tubes adjustably fixed to the heads of the valve chest and having the enlarged ends within said valve chest, the sliding exhaust tubes fixed to and movable with said valve and fitted within the enlarged inner ends of the exhaust tubes, the steam-tight packing between the fixed and movable tubes, and a valve rod extending through the exhaust tubes and attached to the valve, substantially as and for the purposes described. 35

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

GEORGE COOK.

Attest:

O. E. HODDICK,  
W. T. MILLER.