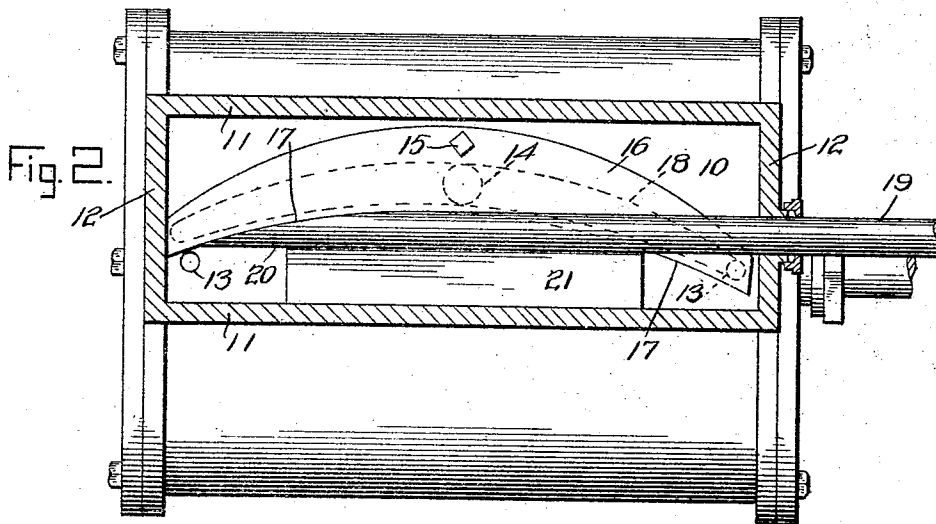
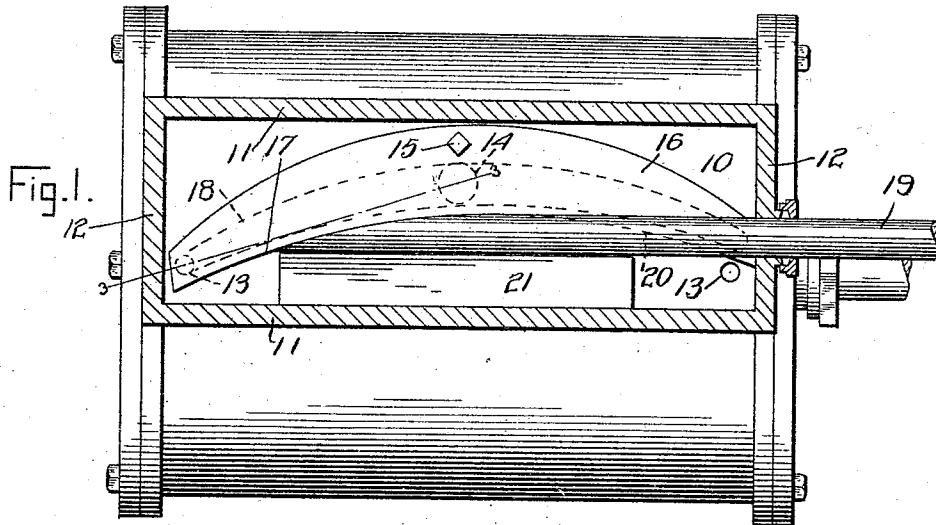


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VALVE MECHANISM FOR STEAM ENGINES.
APPLICATION FILED APR. 16, 1908.

908,478.

Patented Jan. 5, 1909.
3 SHEETS—SHEET 1.



Witnesses

E. H. Rickenbach
M. J. Miller

Inventor

Luther Miller

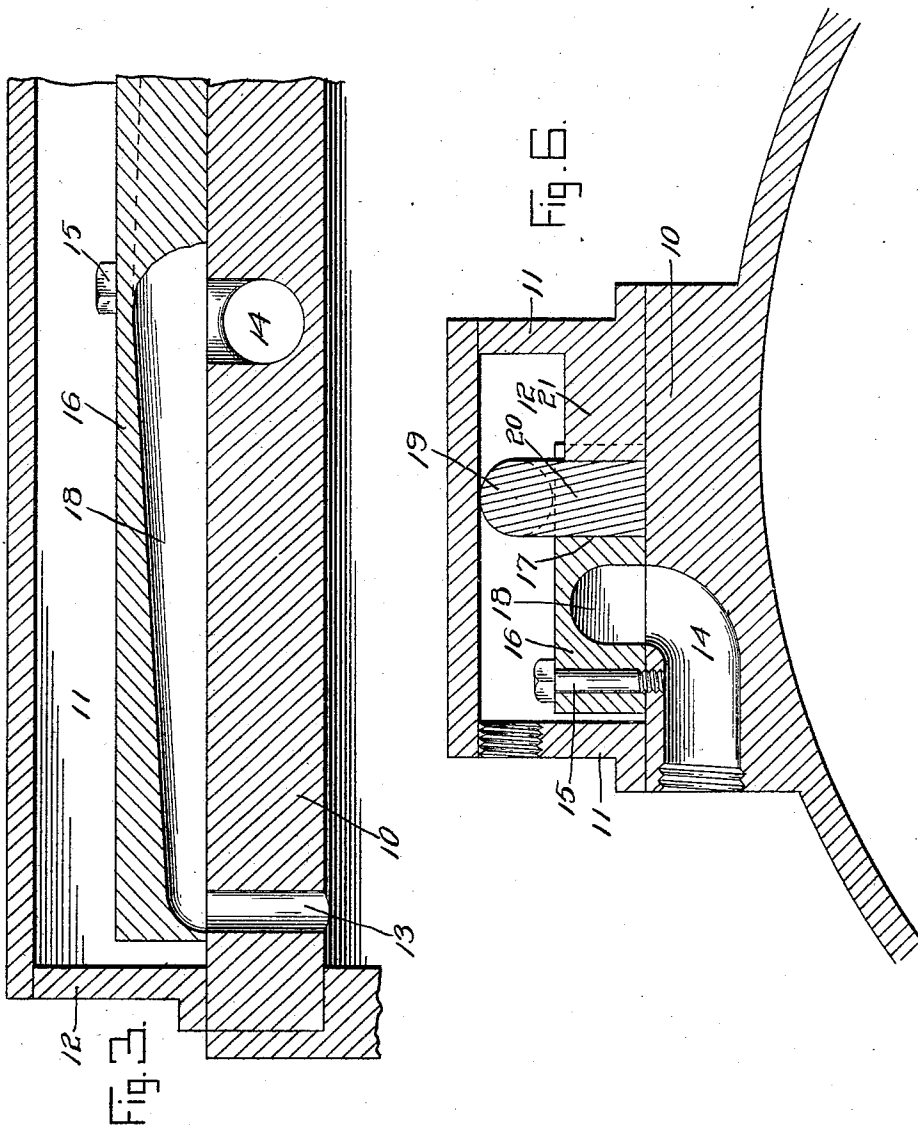
By *Charles Chandler*

Attorney

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Witnesses

C. H. Reichenbach
M. F. Miller

Inventor
Luther Miller

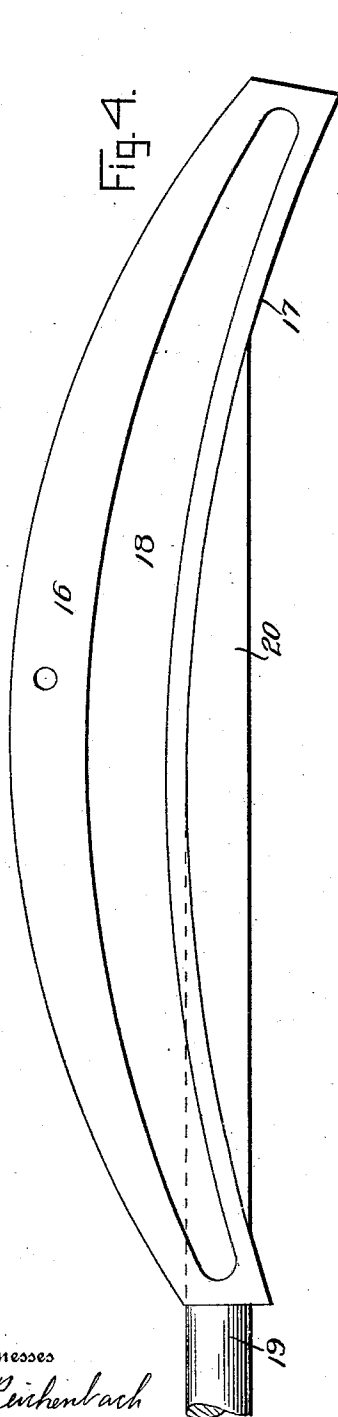
By *Charles Canale*

Attorneys

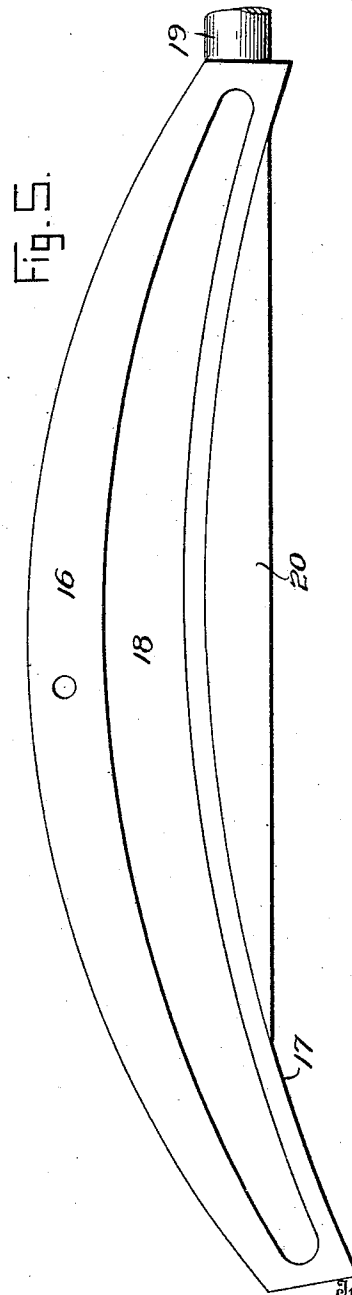
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3 SHEETS—SHEET 3.



Witnesses
C. K. Reinhardt
M. T. Miller



Inventor
Luther Miller.

By *Charles Chandler*

Attorney

UNITED STATES PATENT OFFICE.

LUTHER MILLER, OF BEAVER DAM, KENTUCKY.

VALVE MECHANISM FOR STEAM-ENGINES.

No. 908,478.

Specification of Letters Patent.

Patented Jan. 5, 1909.

Application filed April 16, 1908. Serial No. 427,459.

To all whom it may concern:

Be it known that I, LUTHER MILLER, a citizen of the United States, residing at Beaver Dam, in the county of Ohio, State of Kentucky, have invented certain new and useful Improvements in Valve Mechanisms for Steam-Engines; and I do hereby 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.

This invention relates to valve mechanisms for steam engines and has as its object the provision of an extremely simple and quick acting valve mechanism of the class described.

The mechanism embodied in my invention comprises, in combination with a steam chest having inlet and exhaust ports through its floor, an oscillating valve plate which is arranged upon the floor of the chest, and which, when it oscillates, alternately uncovers the inlet ports and permits exhaust of the steam through the exhaust ports, the said valve plate having a cam edge and there being a cam element upon the valve rod and riding over said edge to oscillate said valve plate.

In the accompanying drawings, Figure 1 is a top plan view of the mechanism embodying my invention showing the several parts thereof in one position, Fig. 2 is a similar view showing the parts in a second position, Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1, Fig. 4 is a bottom plan view in detail of the valve plate and the valve rod showing the two elements in one of their positions, Fig. 5 is a similar view showing the two elements in their other position, and, Fig. 6 is a vertical sectional view taken transversely of the chest.

In the drawings, there is shown the steam chest of an engine, the floor of the chest being indicated by the numeral 10, its side walls by the numeral 11 and its end walls by the numeral 12, the top wall of the chest being broken away in the several views. Formed through the floor 10 of the chest are inlet ports 13 and an exhaust port 14, the inlet ports being located adjacent the end walls 12 of the chest and the exhaust port adjacent one of the side walls 11 and at a point midway of the ends of the chests.

Pivoted by means of a bolt 15 upon the floor 10 of the steam chest is the valve plate embodied in my invention, the said plate be-

ing indicated by the numeral 16 and the bolt being passed therethrough midway of the ends thereof and at one lengthwise edge. This plate 16 has its edge adjacent which the bolt 15 is located, convexed and its opposite edge concaved as indicated by the numeral 17, this latter edge forming in effect a cam surface over which the operating element for the valve plate rides, as will be presently explained. The valve plate 15 is formed in its under side with a groove 18 which extends nearly throughout the entire length of the plate and is parallel with the convexed edge thereof, the said groove being of such length that when the plate is oscillated, it will be brought at its ends directly above the inlet ports 13 alternately, it being in communication at its middle with the exhaust port 14 at all times.

The valve rod is indicated by the numeral 19 and formed integral with the rod is a cam 20 which extends longitudinally thereof and has its working face received against the concaved edge 17 of the valve plate, it being confined in this position by means of a guide rib 21 which is formed upon the upper face of the floor 10 of the steam chest.

From the foregoing description of my invention, it will be understood that upon reciprocation of the valve rod 19, the cam 20 riding over the concaved edge 17 of the valve plate will serve to oscillate the said plate and alternately uncover the inlet ports 13 which are formed through the floor 10 of the steam chest, it being understood that when one port is uncovered, the other is covered and is in communication with the groove 18 in the under side of the said plate, this groove being, as heretofore stated, at all times in communication with the exhaust port 14 so that when steam is admitted to one end of the cylinder, it is being exhausted from the other end as is the case in an ordinary steam engine. As a matter of fact, the valve mechanism embodying my invention accomplishes the same result as the ordinary slide valve of a steam engine but in a better manner and much more rapidly or in other words the inlet ports are quickly uncovered and covered due to the quick change made in the position of the valve plate.

What is claimed, is:—

1. In a valve mechanism, the combination with a steam chest having inlet ports opening through the floor thereof, of an oscilla-

tory valve plate mounted upon the floor, a valve rod working through one end of the steam chest, and cam means carried by the valve rod for oscillating said valve plate.

5 2. In a valve mechanism, the combination with a steam chest having inlet ports formed through the floor thereof, of a valve plate mounted upon the floor of the chest and provided with a cam edge, and means carried by
10 the valve rod and riding against said edge to oscillate said valve plate.

3. In a valve mechanism, the combination with a steam chest having inlet ports formed through its floor, of an oscillatory valve
15 plate mounted upon the floor and formed with a cam edge, a valve rod working through one end of the steam chest, and cam means carried by the valve rod and riding

over said cam edge of the valve plate for oscillating the same.

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4. In a valve mechanism, the combination with a steam chest having inlet ports formed through its floor, of an oscillatory valve plate pivoted upon the floor of the chest and formed with a concaved edge, a valve rod
25 working through one end of the steam chest, and cam means carried by the valve rod and riding over said concaved edge of the valve plate for oscillating the same.

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

30

LUTHER MILLER.

Witnesses:

S. H. SEIBERT,
ISAAC FOSTER.