Oct. 27, 1925.

1,559,417

P. H. GENTZEL

STEAM CYLINDER RELIEF FOR ENGINES

Filed Oct. 24, 1919

Fig. 1.

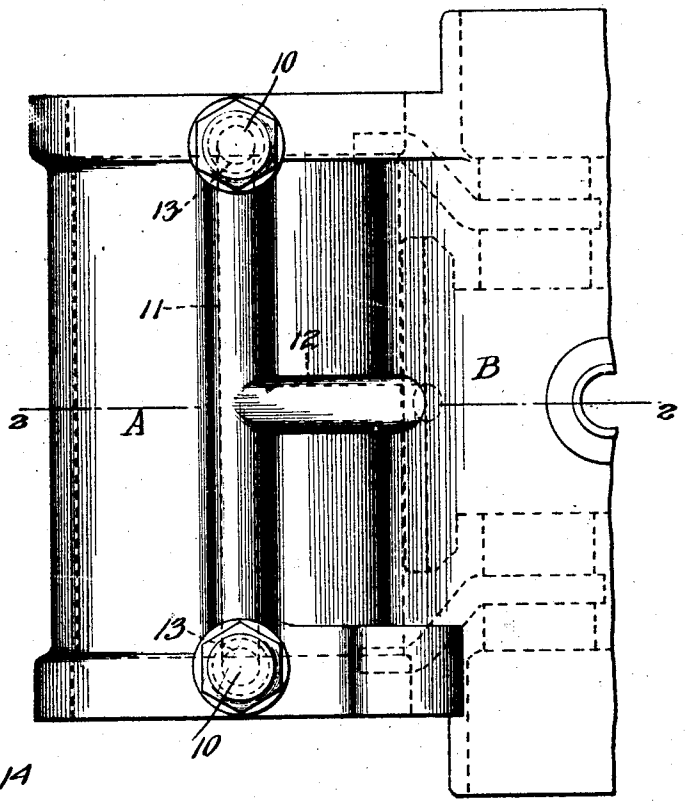


Fig. 3.

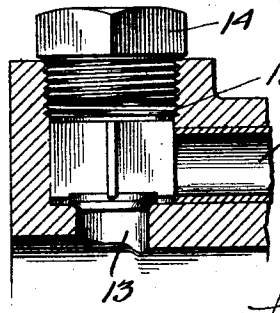
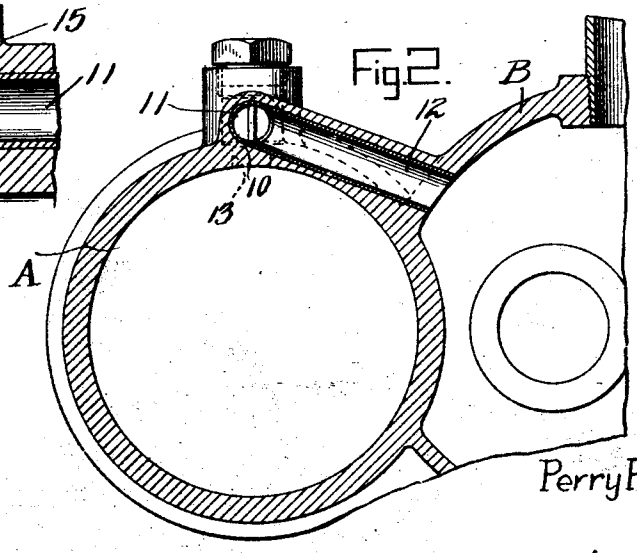


Fig. 2.



Inventor

Perry H. Gentzel

By Bradford, Morrill & Bierman

Attorneys

Patented Oct. 27, 1925. 1,559,417

UNITED STATES PATENT OFFICE.

PERRY HOMER GENTZEL, OF NEWTON, MASSACHUSETTS.

STEAM-CYLINDER RELIEF FOR ENGINES.

Application filed October 24, 1919. Serial No. 332,934.

To all whom it may concern:

Be it known that I, PERRY HOMER GENTZEL, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Steam-Cylinder Relief for Engines, of which the following is a specification.

One of the troubles heretofore encountered in the operation of steam engines, particularly of the type employed as motors for vehicles, has been the accumulation of water in the cylinder caused by a portion of the water going over with the steam and no relief being provided for such accumulation. This has frequently caused blowing out of cylinder heads, or rupture of connecting rods, or piston rods.

The object of my said invention is to provide a cylinder wherein such trouble is obviated, and relief provided for water so accumulating in the cylinders.

Referring to the accompanying drawings which are made a part hereof, and on which similar reference characters indicate similar parts:

Figure 1 is a top or plan view of a cylinder embodying my said invention.

Figure 2 a cross section through the same on the dotted line 2—2 in Figure 1, and

Figure 3 a detailed view.

In said drawings the portions marked A represent the cylinder proper and B the steam chest.

The cylinder in its general construction is substantially of a type in common use and is only intended to illustrate a steam engine cylinder wherein a piston operates in the usual manner under steam pressure.

At each end of the cylinder I provide a port 10 leading into a longitudinal port 11 formed in the side of the cylinder, which port in turn communicates with a transverse port 12, which leads into the steam chest. Said ports 10 are provided with check valves 13 which prevent any steam from passing from the steam chest to the cylinders therethrough, but will lift slightly under pressure caused by the advancing piston, to permit the escape of any accumulated water through the ports 10, 11 and 12.

Said check valves 13 are adjusted through an opening controlled by screw-plug 14 between which the flanges on the upper end of said check valve a very narrow space 15 is provided which limits the movement of said valves.

In operation the piston drives any accumulated water before it through the exhaust side of the cylinder and under the pressure thus induced valves 13 will raise, permitting the water to escape through the ports just described, and thus avoid the trouble above noted.

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

1. In a steam engine, the combination of a horizontal cylinder, a steam chest formed integrally with said cylinder said cylinder having an opening through its wall closely adjacent each end with a longitudinally disposed passage in said cylinder wall forming communication between said openings and also having a transversely disposed downwardly directed passage contained entirely in said wall and forming communication between the intermediate portion of said longitudinally disposed passage and said steam chest, a valve seat formed in each of said openings, a gravity operated valve disposed in each of said openings above said seat, and a removable closure plug in the outer end of each of said openings, substantially as set forth.

2. In a steam engine a horizontal cylinder, a steam chest formed integrally with said cylinder said cylinder having an opening through its wall adjacent each end with a passage in said cylinder wall forming communication between said openings and a passage contained entirely within said wall and forming communication between said passage and the steam chest, a gravity operated valve in each of said openings, and a removable closure plug in the outer end of each of said openings and adapted to be disposed closely adjacent the upper end of the valve and prevent the same from moving to fully open position, substantially as set forth.

In witness whereof, I have hereunto set my hand and seal at Boston, Massachusetts, this 2nd day of September, A. D. nineteen hundred and nineteen.

PERRY H. GENTZEL. [L. S.]