Aug. 18, 1925. 1,550,108

J. S. SHEAFE

LOCK ANGLE COCK

Filed Aug. 4, 1922

Fig. 1.

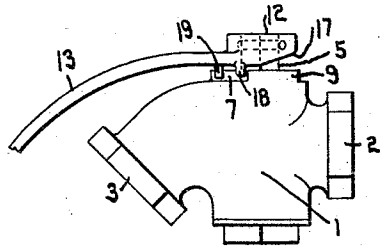


Fig. 2.

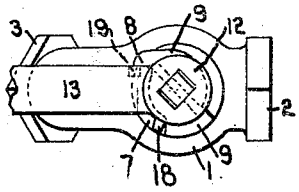


Fig. 3.

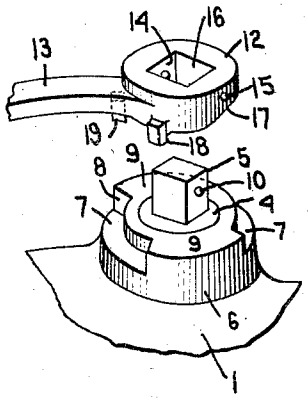


Fig. 4.

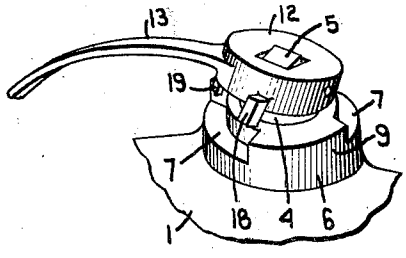
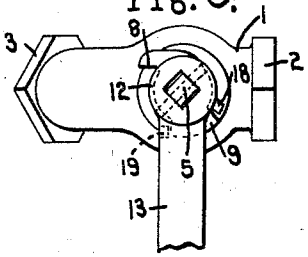


Fig. 5.



INVENTOR.

James S. Sheafe

BY

Harold Ellis Smith

ATTORNEY.

Patented Aug. 18, 1925. 1,550,108

UNITED STATES PATENT OFFICE.

JAMES S. SHEAFE, OF EVANSTON, ILLINOIS.

LOCK ANGLE COCK.

Application filed August 4, 1922. Serial No. 579,610.

To all whom it may concern:

Be it known that I, JAMES S. SHEAFE, a citizen of the United States, residing at Evanston, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Lock Angle Cocks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention relates to stop cocks and has particular reference to the angle cocks used on the train pipes of railroad cars for the purpose of controlling the air and steam. The objects of the invention are the provision of a new, cheapened, and simplified locking stop-cock whereby the movable member can be readily secured in position against accidental operation either to close or open the same, and this without any increase in the cost of manufacture over the usual devices, and without increase in the number of parts employed. Devices of this general type are known in which the operating handle is provided with lugs adapted to hook over certain parts of the stop cock when the same is moved to open or closed position, but these have always heretofore necessitated the use of additional parts secured respectively to the turning member and to the handle member, thus requiring additional riveting, machining, fitting, etc., whereas it is a characteristic of my improvements that the number and cost of the parts is not increased in any way.

In the drawings accompanying and forming a part of this application I have illustrated certain physical forms in which my ideas can be embodied. In these drawings Fig. 1 is a side elevation of a train-pipe stop-cock embodying my improvements; Fig. 2 is a top plan view of the same, Fig. 3 is an enlarged perspective showing the cock and handle separated; Fig. 4 is a perspective view showing the parts attached together with the handle in releasing position; and Fig. 5 is a top plan view of the parts showing the handle turned to closed position.

Describing the parts by reference characters 1 represents the body of the stop-cock which is formed with prismatic nipples 2 and 3 for attachment to the train pipe and the train pipe hose respectively. Mounted in the body 1 in an upright position is the turning-plug 4 surmounted by the upstanding rectangular stud 5 and surrounded where it protrudes from the body by a cylindrical neck 6 having an arcuate notch 7 therein, one end of which terminates in the shoulder 8. From another point of view the stud 5 can be considered as surrounded by a pair of arcuate segmental flanges 9—9 interrupted by spaces 7—7. The stud 5 is perforated by a transverse aperture 10 which is perpendicular to two of the flat faces thereof, and mounted upon this stud is a circular head 12 having the handle 13. This head is formed with a square aperture, having two opposed walls 14 flat and parallel and adapted to receive the stud 5 snugly between them, these walls being traversed by the aperture 15 adapted to receive a pivot pin whereby the parts are held together. The intermediate sides 16 of this aperture are flared so as to permit a rocking movement on this head upon the stud, the bottom of the head being beveled at one side as shown at 17 so as to permit this rocking movement. At the side of the head opposite this beveled portion a depending finger 18 is provided, adapted when the head is in its normal horizontal position, to engage one end or the other of the flange 9 depending upon whether the valve is opened or closed, the length of this finger being such that when the head is tilted as shown in Fig. 4 the valve can be turned. The lower face of the head is also provided with a second finger 19 approximately in line with the pivot pin and adapted to ride along the slot 7 to limit the turning movement by engagement with the ends of the slot. This second finger 19, owing to its position relatively to the pivot axis, is never raised sufficiently high to move across the flange 9, but the finger 18 is enabled to engage either the one end or the other end of that flange and hence to hold the valve in either position.

It is customary for some reason to form the fluid passage in the plug 4 parallel to one of the diagonals of the stud 5, and when this is done it will be seen that the apertures 10 and 15 will be oblique to the handle 13 which means that the handle has a cornerwise rocking movement. This however does not hinder the operation of the device in any way. However I do not restrict myself to this arrangement of the rivet nor do I limit myself to any of the other details of

construction, design, or arrangement herein shown, except as specifically recited in my claims.

Having thus described my invention what I claim is:

1. In a device of the character described, the combination with a valve body having a seat and two nipples projecting therefrom, one perpendicularly and the other obliquely, as regards the axis of said seat, an interrupted flange surrounding one end of said seat, a turning plug in said seat and having a square axial stud projecting through said flange, and a head pivoted to said stud upon an axis which is perpendicular to two of the sides of said stud and having a curved handle which overlies the oblique nipple when the valve is open, said head having an aperture with two flat sides which embrace the walls of the stud and also having two depending fingers, one located nearly in line with the pivot axis to limit the turning movement by engaging the ends of the flange and the other located at one side of the pivot axis so as to ride over the top of the flange when the head is inclined.

2. In a train-pipe angle cock, in combination, a turning plug having a square axial stud at its upper end and a pivot pin traversing said stud perpendicular to opposed faces thereof, a lever handle having at one end a head formed with a rectangular hole arranged with a diagonal in line with said handle, two faces of said hole being traversed by said pin and fitting snugly the corresponding faces of the stud and the other faces of the hole surrounding loosely the remaining faces of said stud whereby said handle may be tilted diagonally about said pivot pin, and interfitting projections carried by said head and by the valve body, adapted to become disengaged when the head is tilted to permit rotation of the plug, and to become engaged when said head is level to prevent rotation of said plug.

3. In a train-pipe angle cock, in combination, a turning plug having a rectangular axial stud at its upper end, a lever handle having at one end a head formed with a rectangular hole which fits opposed faces of said stud snugly and intermediate faces loosely, said handle being arranged on an axis diagonally to said hole, means securing said handle to said stud while permitting it to rock about an axis normal to those faces of the stud which it fits snugly, a valve body surrounding said turning plug, and interfitting projections carried by said head and body adapted to become disengaged when the head is tilted to permit rotation and to become engaged when the head is returned to normal position at predetermined phases in the rotation of said plug.

In testimony whereof, I hereunto affix my signature.

JAMES S. SHEAFE.