Aug. 11, 1925. 1,549,007

A. M. KHUN

SAFETY MANHOLE FOR SEWERS

Filed Oct. 2, 1924

Fig. 1

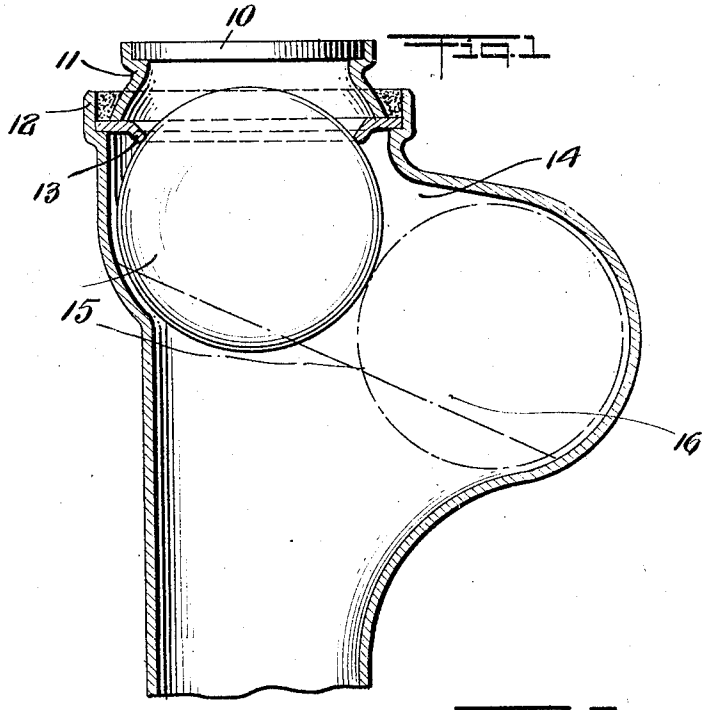
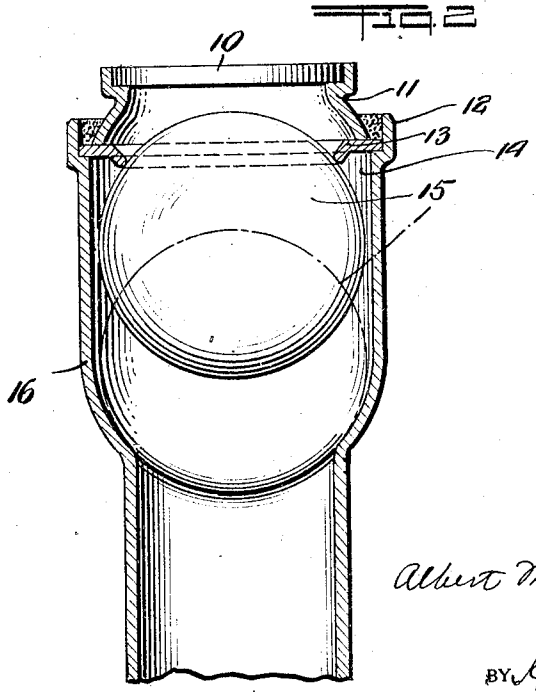


Fig. 2



Albert M. Khun

INVENTOR

BY Hallack Kay

ATTORNEY

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UNITED STATES PATENT OFFICE.

ALBERT M. KHUN, OF ELIZABETH, NEW JERSEY.

SAFETY MANHOLE FOR SEWERS.

Application filed October 2, 1924. Serial No. 741,206.

To all whom it may concern:

Be it known that I, ALBERT M. KHUN, a citizen of the United States, residing in the city of Elizabeth, State of New Jersey, have invented a certain Improvement in Safety Manholes for Sewers, of which the following is a specification.

In cases of freshets or of accidental stoppage of sewers the water often flows back through the manholes in city streets, flooding the streets. This causes a deposit of filth which endangers the health of the citizens.

The present invention has for its object the provision of means whereby the reflux of sewage upward through street manholes may be automatically prevented. The means employed have been found thoroughly practical, are easily manufactured and installed and do not offer any projections which may catch dirt and offensive matter in any manner.

The invention is shown in a preferred form in the accompanying drawings, wherein Figure 1 is a vertical sectional view of a manhole supplied with the safety valve, and Figure 2 is a vertical sectional view of the same at right angles to the view in Figure 1.

The usual manhole grating 10, rests upon a short flaring tubular casting 11, which latter is fastened down in any suitable manner upon the seat 12 at the top of the pipe leading down to the sewer below.

There is preferably secured under the casting 11, a ring 13 of suitable metal to provide a seat for the ball hereinafter described. The seat for this ball may be provided in any desired way, and not necessarily by the use of the separate ring 13.

The top section of the pipe leading down to the sewer under the manhole is gradually widened from left to right in Figure 1, and narrows again to form the seat 12. This enlargement forms a side chamber 14 for accommodation of the valve ball 15.

In addition to the enlargements on one side just described, there is also a swelling 16 to right and left in Figure 2 which is much less pronounced in character. This swelling has its origin at the bottom along lines 17 on opposite sides, whereby two parallel inclined ridges or tracks are formed. Upon these the ball 15 rests, and under ordinary circumstances, gravity keeps this ball at the lower end of the tracks 17, so that it occupies the chamber 14, and is entirely out of the path of liquids dropping down through the grating 10.

The ball 15 may be made in any well known manner to render it floatable, and is of such a size that it will fit against the ring 13 or its equivalent to close the opening of the manhole when brought into the position shown in dotted lines. The consequence is that, if the water should back up so as to threaten to overflow the manhole, it would raise the ball 15, causing it to roll along the inclined top of the side chamber 14, until it was forced against the ring 13 or other valve seat, thereby stopping the opening and preventing overflow.

On the subsidence of the water level, and return of normal conditions, gravity would cause the ball to return to the position shown in the drawing, where it is entirely out of the path of any material dropping into the sewer.

What I claim is—

In a street manhole construction, a substantially upright sewer pipe having an enlarged top section provided with an annular recess, a side pocket formed on said top section, inclined guide-ways in the side walls of said section and said pocket terminating with their lower ends in said pocket, a removable annular valve seat in said recess above the guideways, a grating receptacle resting on said valve seat and adapted to receive a manhole grating, means adapted to seal the valve seat and the receptacle in said annular recess, and a buoyant ball adapted to roll on the guideways to lodge in said pocket or rise to close the valve seat actuated by liquid in the sewer pipe.

In testimony whereof I have hereto set my hand on this 25th day of September 1924.

ALBERT M. KHUN.