May 8, 1928. 1,669,215

C. H. SMOOT

STEAM ACCUMULATOR

Filed May 6, 1925

Fig. 1.

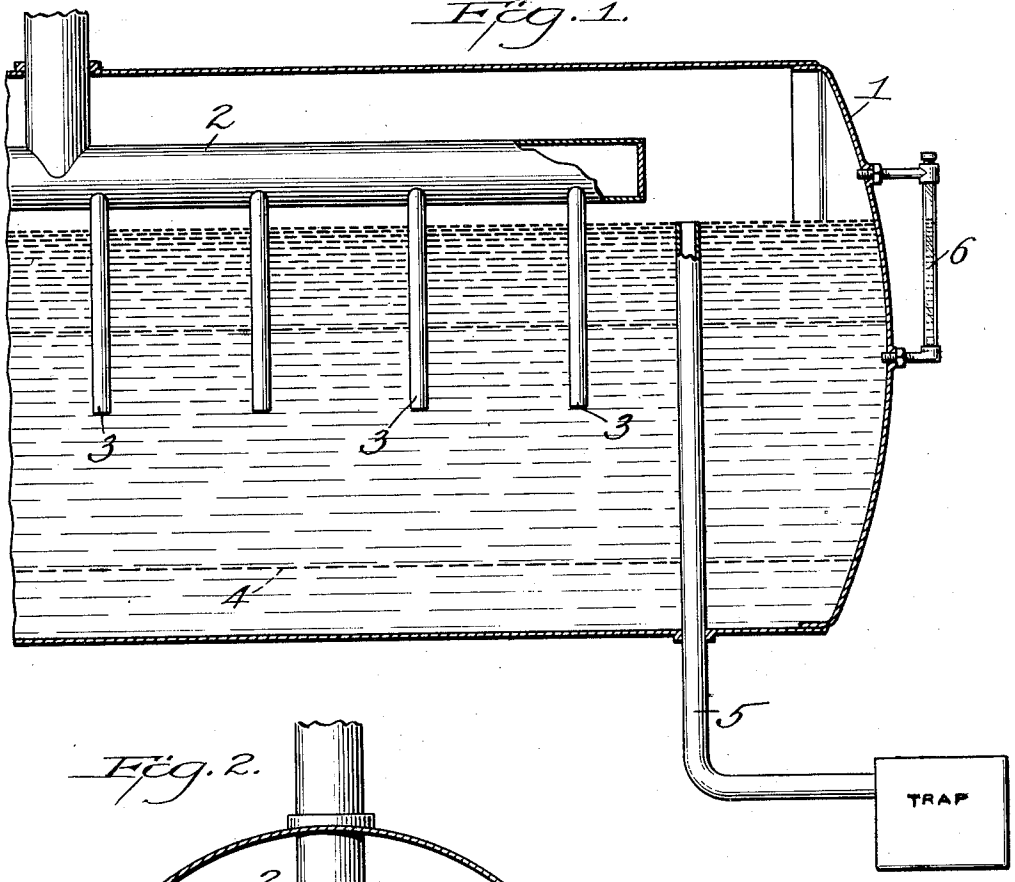


Fig. 2.

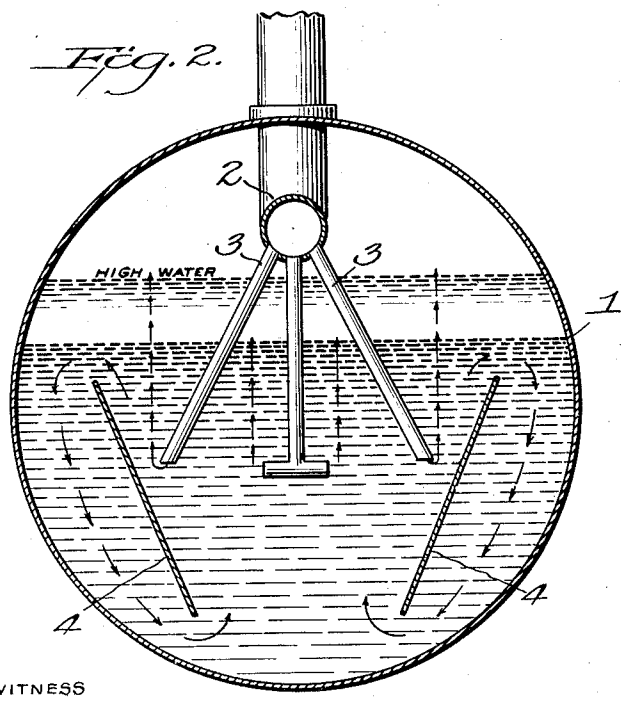
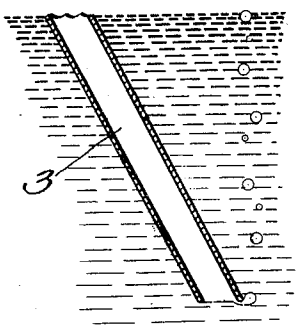


Fig. 3.



WITNESS

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STEAM ACCUMULATOR.

Application filed May 6, 1925. Serial No. 28,526.

This invention relates to apparatus for the storing of the heat energy of steam in hot water contained in a tank and has for its object the better distribution of the steam through the water.

The invention comprises various combinations of steam distributing pipes and deflecting plates, more particularly described with reference to the accompanying drawings in which,

Fig. 1 is a longitudinal section of a hot water tank acting as a steam accumulator;

Fig. 2 is a transverse section of the same; and

Fig. 3 is a detail sketch.

A tank 1 has a steam supply pipe 2 which extends in the manner of a header nearly the length of the tank, and near the upper portion, the intention being to have the header remain in the steam space above the water. From the header numerous distributing pipes 3 extend downwardly, one line of these pipes being vertical and reaching from the center of the header to a point near the middle of the tank, the lower ends of these central pipes being extended sidewise in the manner of a T so that the steam issues in two directions and at points removed from the vertical pipe so that the steam will pass up through the water and not up along the surface of the pipe. Two other rows of pipe lead from the header downwardly in oppositely inclined diverging position so that steam issuing from their lower ends will also pass up through the water without contacting with the pipe as shown in Fig. 3.

The object of this construction is to insure that the steam will not cause a film to be formed on the surface of the pipes. Deflector plates 4 are shown at the two sides of the tank. These deflector plates run the length of the tank and are inclined toward each other at the bottom. By this arrangement of deflector plates leading away from the steam inlet nozzles, the same useful effect of preventing the incoming steam from forming films on the deflector plates as well as the tubes is insured. The upward tendency of the steam as it issues from the steam pipes 3 will cause circulatory movement of the water as shown by the arrows in Fig. 2, thus insuring a good distribution of the heat throughout the water and preventing the accumulation of cold water at the bottom of the tank and hot water at the top. An overflow pipe 5 may be provided for keeping the level of the water from rising too high and a gage 6 may be used to indicate the height of the water.

I claim:—

1. A steam accumulator comprising a tank adapted to hold hot water, a steam header in the upper part of the tank, spaced distributing pipes leading downwardly and diverging outwardly from the steam header to discharge steam in the body of the water and deflector plates inclined outwardly toward the top and located between the discharge ends of the steam pipes and the tank walls, whereby the water is caused to circulate around the plates and the formation of films on both pipes and plates from the depositing effect of the incoming steam is prevented.

2. A steam accumulator comprising a tank adapted to hold hot water, a steam header in the upper part of the tank, central vertical distributing pipes leading downwardly from said header and provided with T-shaped discharge ends, lateral spaced distributing pipes leading downwardly and diverging outwardly from said header upon opposite sides of said central distributing pipes, all of said distributing pipes arranged to discharge steam in the body of the water at points to direct the steam ascending through the water away from the sides of said distributing pipes.

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