No. 806,278. PATENTED DEC. 5, 1905.

J. W. NETHERY.

WATER TOWER FIRE TRUCK SAFETY APPLIANCE.

APPLICATION FILED JAN. 3, 1905.

Fig. 1.

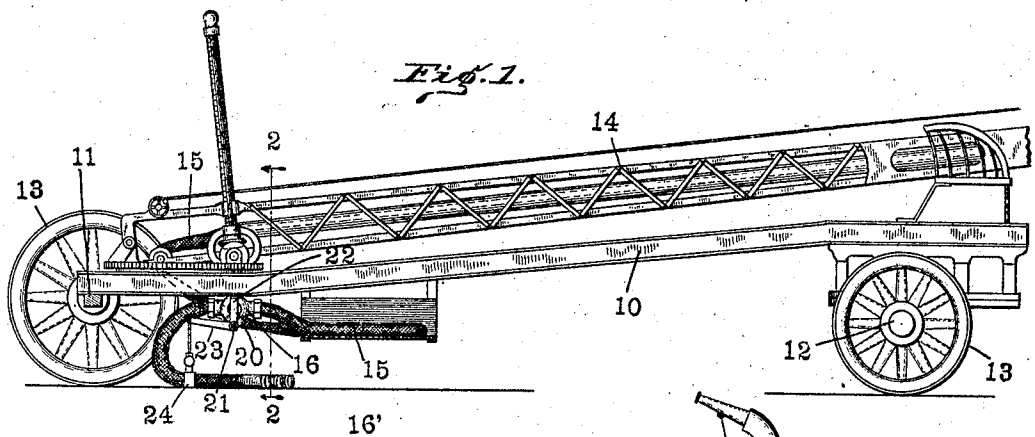


Fig. 4.

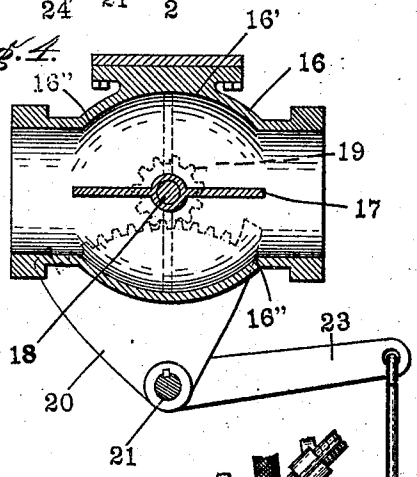


Fig. 5.

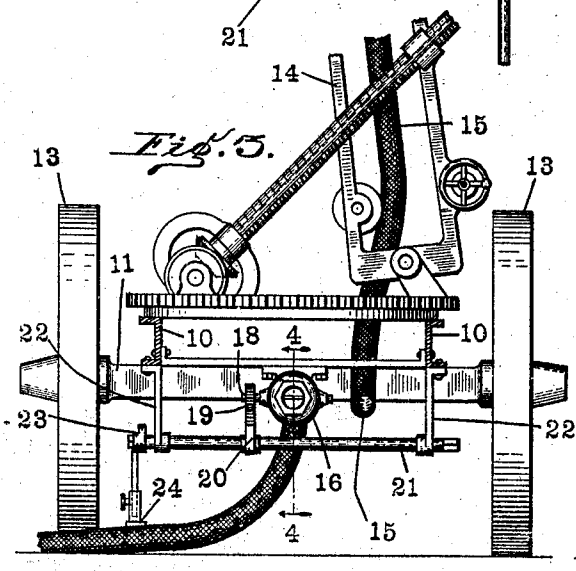
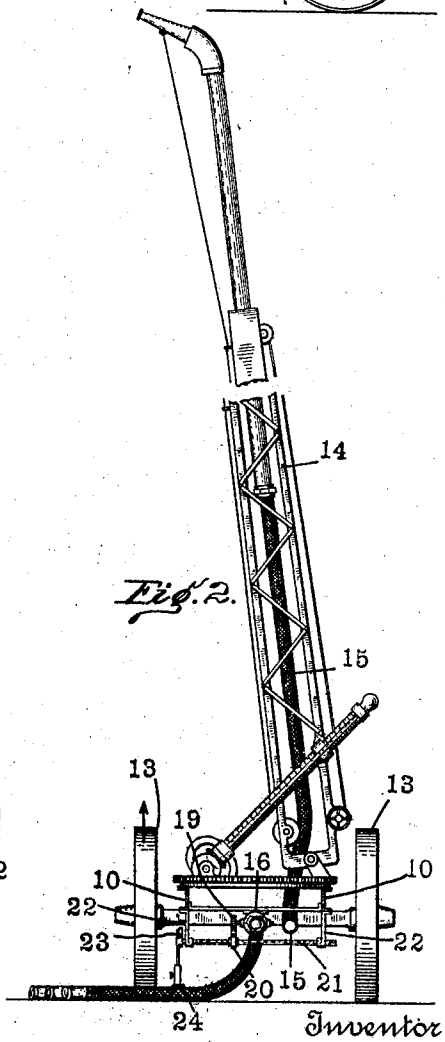


Fig. 2.



Witnesses
Frank A. Fahle
J. A. Walsh.

Inventor
Joseph W. Nethery

By
Bradford & Howard
Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH W. NETHERY, OF INDIANAPOLIS, INDIANA.

WATER-TOWER FIRE-TRUCK SAFETY APPLIANCE.

No. 806,278. Specification of Letters Patent. Patented Dec. 5, 1905.

Application filed January 3, 1905. Serial No. 239,473.

To all whom it may concern:

Be it known that I, JOSEPH W. NETHERY, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Water-Tower Fire-Truck Safety Appliances, of which the following is a specification.

In the use of a water-tower fire apparatus it has been found that when the tower was elevated to a point nearly vertical and a stream of water directed transversely or nearly transversely from the upper end of the tower the reaction of the stream on the upper end of the tower is sufficient to completely overturn the apparatus, this result taking place so rapidly that there is not sufficient time to lower the tower away from vertical to prevent such action.

The object of my present invention is to provide an automatic means which so soon as there is any tendency of the truck to overturn will automatically reduce the flow of water to a point where it is no longer of sufficient force to cause overturning.

The accompanying drawings illustrate my invention.

Figure 1 is a side elevation of my invention. Fig. 2 is an elevation in partial section on line 2 2 of Fig. 1. Fig. 3 is an enlarged transverse section on line 2 2 of Fig. 1. Fig. 4 is an enlarged section on line 4 4 of Fig. 3.

In the drawings, 10 indicates the main frame of the apparatus provided with two carrying-axles 11 and 12, each of which is provided with suitable supporting-wheels 13. The water-tower 14, of any desired construction, is mounted on the main frame 10 and is provided with a supply-pipe 15, which may be of any desired type. Arranged in the pipe 15 is a valve-casing 16, within which is mounted any desired form of valve 17. In the present form said valve is carried on a shaft 18, journaled in the casing 16 and provided at its outer end with a pinion 19, which meshes with a toothed segment 20, carried by a shaft 21, journaled in suitable hangers 22, attached to the main frame 10. The shaft 21 preferably extends entirely across the main frame, and each end is adapted to receive an arm 23, to which is attached a weight 24, adapted to rest upon the ground. An arm 23 may be attached permanently to each end of the shaft 21, if desired, and the weight 24 provided with a connection which may be detachably connected to either of these arms, or, as shown in the drawings, the weight 24 is permanently attached to a single arm 23, which may be slipped over either of the squared ends of the shaft 21.

In operation when the apparatus is placed in position and the tower elevated, as shown in Fig. 2, the arm 23 will be slipped over the fire end of shaft 21—*i. e.*, the end of the shaft on that side of the apparatus toward which the water stream is to be directed. If now there is any tendency to overturn, as indicated by the arrow in Fig. 2, the weight 24 will remain on the ground and operate through shaft 21, chain 20, and gear 19 to turn the valve 17 within its casing, and thus reduce the flow of water, and this reduction will be carried to a point where the reaction of the stream on the upper end of the tower is equal to the weight of the lifted truck before it reaches a point sufficiently high to cause overturning. The operators will immediately notice the decreased flow of water and the raised condition of the fire side of the truck and will have plenty of time to increase the incline of the tower from the vertical, whereupon the reaction of the stream on the upper end of the tower will become insufficient to raise the truck, so that it will slowly drop back to the ground and the valve 17 open fully.

It is desirable that the action of valve 17 in checking the stream of water be quite gradual, and for that reason the walls 16′ of the casing 16 are shown as of a greater radius than the length of a valve-ring, so that when the ends of the valve reach the points 16″ there is still sufficient space for a considerable flow of water, this space diminishing as the valve reaches the position shown in dotted lines in Fig. 4. This will prevent bursting of the hose or injury to the circulating-valve of the pumping-engine.

In order to provide for accurate adjustment of the parts, it is desirable that an adjustable telescopic connection be provided, as shown, between the weight 24 and the arm 23.

I claim as my invention—

1. The combination, with a water-tower fire apparatus, of means arranged in the supply-pipe to control the flow of water therethrough, and means dependent upon a change of relation of the main frame to the ground for changing the position of said controlling means.

2. In a water-tower fire apparatus, the combination, with the main frame and supply-pipe thereof, of a valve arranged in the supply-pipe, and means dependent upon a variation of transverse angular relation between the main frame and ground for operating said valve toward a closed position when the main frame is tipped sidewise.

3. In a water-tower fire apparatus, the combination, with the main frame and the supply-pipe, of a valve arranged in said supply-pipe, a weight adapted to rest on the ground, and intermediate connections between the said weight and valve whereby, when the main frame is tipped, the weight will serve to move the valve toward closed position.

4. In a water-tower fire apparatus, the combination with the main frame and supply-pipe, of a valve arranged in said supply-pipe, and means dependent upon a variation of transverse angular relation between the main frame and ground for gradually closing the valve by a tipping of the main frame.

5. In a water-tower fire apparatus, the combination, with the discharge-nozzle and means for holding the same in an elevated position, of a supply-pipe for said nozzle, means for controlling the flow of water therethrough, and means for operating said controlling means, said means being dependent for its action upon a retractive movement of the nozzle from operating position.

6. In a water-tower fire apparatus, the combination, with the discharge-nozzle and means for supporting the same in an elevated position inclined from the vertical, of a supply-pipe therefor, means for controlling the flow of water therethrough, and means dependent upon a movement of the nozzle-support from operating position toward the vertical for operating said controlling means to decrease the flow of water through the apparatus.

7. In a fire apparatus, the combination, with a suitable nozzle-support adapted to be arranged in an upwardly-inclined position, of a discharge-nozzle carried by the upper end of said support, a supply-pipe therefor, and means dependent upon the flow of the stream for automatically reducing the effective back pressure of the stream upon the upper end of the nozzle-supporting guide.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 30th day of December, A. D. 1904.

JOSEPH W. NETHERY. [L. S.]

Witnesses:
ARTHUR M. HOOD,
JAMES A. WALSH.