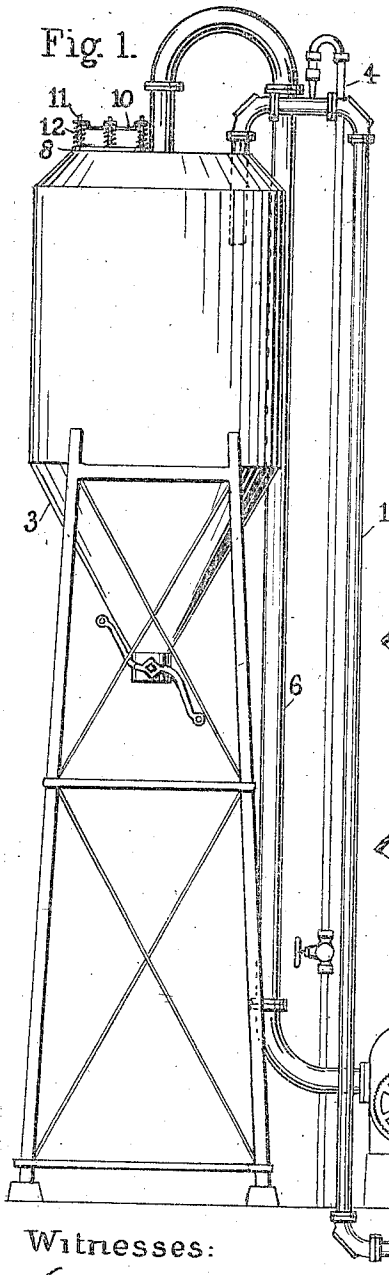
W. G. HUDSON.

SUCTION CONVEYER SYSTEM.

APPLICATION FILED JAN. 17, 1913.

1,067,220. Patented July 8, 1913.

Fig. 1.



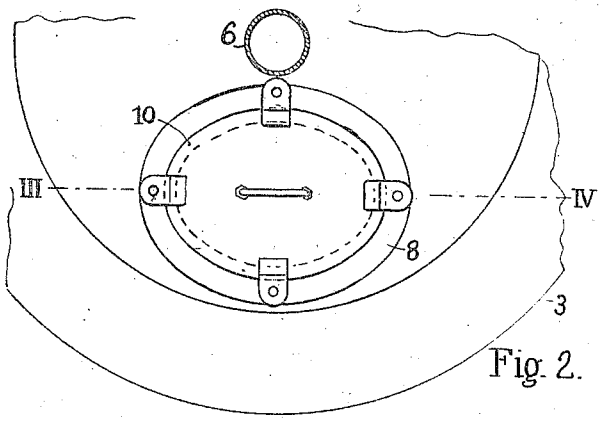


Fig. 2.

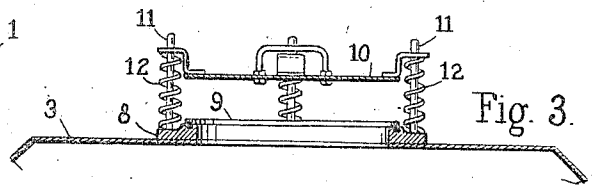


Fig. 3.

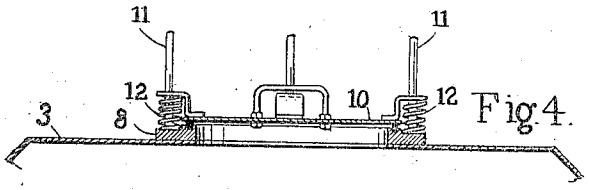


Fig. 4.

Witnesses:

Samuel W. Balch

Frank M. Cole.

Inventor,
Wilbur G. Hudson,
by Thomas Ewing, Jr.,
Attorney.

UNITED STATES PATENT OFFICE.

WILBUR G. HUDSON, OF NEWARK, NEW JERSEY, ASSIGNOR TO GUARANTEE CONSTRUCTION COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

SUCTION CONVEYER SYSTEM.

1,067,220. Specification of Letters Patent. Patented July 8, 1913.

Application filed January 17, 1913. Serial No. 742,665.

To all whom it may concern:

Be it known that I, WILBUR G. HUDSON, a citizen of the United States of America, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Suction Conveyer Systems, of which the following is a specification.

The object of this invention is to provide a safety device in connection with the receiving tank of a suction conveyer system which handles such materials as are liable to generate gas and create pressure when stored in a closed receptacle. Ashes in particular, when conveyed by a suction system from the boiler house to an elevated receiving tank, usually contain combustible matter which when imperfectly quenched generates gas which accumulates in the tank. This on the starting of the exhauster or on receiving the right admixture of air may explode and cause considerable damage.

It is the object of this invention to provide a relief valve which will reduce the chance of such an explosion, and also in the event of an explosion in spite of the relief valve to render the explosion harmless.

In the accompanying sheet of drawings which forms a part of this application, Figure 1 is an elevation of a suction conveyer system with a relief valve in accordance with my invention applied to the receiving tank. Fig. 2 is a top view of the portion of the tank to which the relief valve is applied. Fig. 3 is a section on the line III—IV of Fig. 2 showing the valve open. Fig. 4 is a section on the same line showing the valve closed.

The suction conveying system comprises a conveyer pipe 1 through which air passes from the end at the right under the intake saddles 2 2 and up and into the receiving tank 3. The ashes are thrown into the pipe through the saddles. A water spray is thrown into the ashes as they pass along the upper horizontal lead of the conveyer pipe from a water pipe 4. The movement of the air is effected by an exhaust pump 5 which draws the air from the receiving tank through the air pipe 6 and discharges it through the outlet pipe 7.

On the top of the receiving tank is a frame 8 riveted or bolted thereto and surrounding an elliptical opening through the top wall or portion of the shell of the tank. A gasket 9 is let into this frame. A steel plate 10 forming a valve or cover is normally held suspended over the opening, being kept in place against lateral displacement by four pins 11 11 and held away from the opening by light springs 12 12 surrounding the guide pins.

When the exhauster is started the first inrush of air through the opening draws the cover against its seat and thereafter the air will be drawn entirely through the conveyer pipe. On stopping the exhauster the vacuum is soon relieved through continued flow from the conveyer pipe and the springs lift the valve leaving an open vent through which any gases which may be generated will for the most part escape and little will be left to explode when admixed with air on again starting the exhauster, so both the chance and force of explosion will be much reduced. Should an explosion occur the light cover plate would be readily blown off its guides, acting then as a safety valve and relieving the other parts of the system from destructive pressure.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

The combination with the receiving tank of a suction conveyer system of a relief valve consisting of a cover closing an opening through the shell of the tank and which may be blown freely from the opening by an explosive action of gases within the tank, and provided with guides and light springs for holding the cover centrally away from the opening to permit the free escape of gases when there is no reduction of pressure within the tank, substantially as described.

Signed by me at New York, N. Y., this fourteenth day of January, 1913.

WILBUR G. HUDSON.

Witnesses:
EDWARD BURNS, Jr.,
C. A. WORDEN.