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DISCHARGE APPARATUS FOR ASH CONVEYERS.

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1,275,015. Patented Aug. 6, 1918.

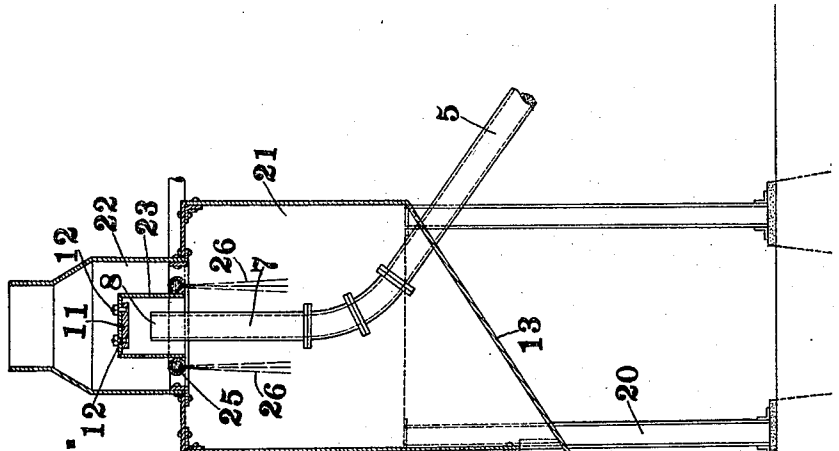


Fig. 2.

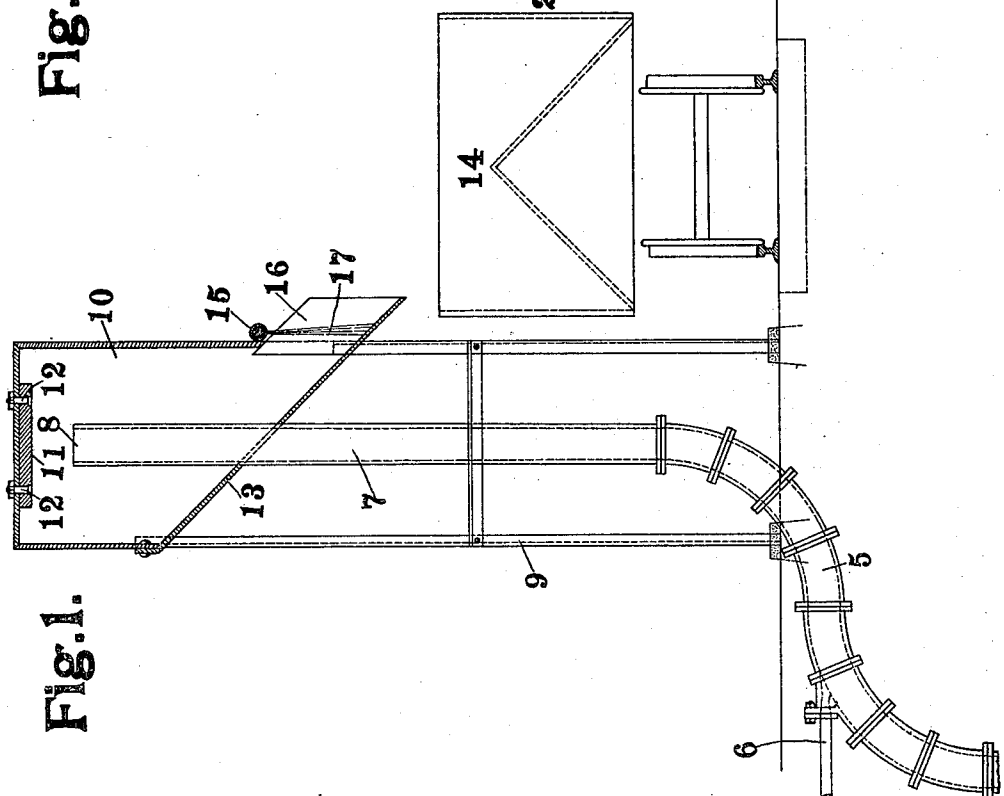


Fig. 1.

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ALEXANDER GIRTANNER AND ROBERT H. MILLER, OF ST. LOUIS, MISSOURI, ASSIGNORS, BY MESNE ASSIGNMENTS, TO AMERICAN STEAM CONVEYOR CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW YORK.

DISCHARGE APPARATUS FOR ASH-CONVEYERS.

1,275,015. Specification of Letters Patent. **Patented Aug. 6, 1918.**

Application filed June 25, 1915. Serial No. 36,195.

To all whom it may concern:

Be it known that we, ALEXANDER GIRTANNER and ROBERT H. MILLER, citizens of the United States of America, residing in the city of St. Louis, State of Missouri, have invented a certain new and useful Discharge Apparatus for Ash-Conveyers, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Our invention relates to a discharge apparatus for ash conveyers, and has for its object the production of a system which will be simple in construction, and which will effectively handle the discharged ashes in the simplest manner possible.

In the accompanying drawings are illustrated two forms of apparatus, made in accordance with our invention. Figure 1 is a vertical central section, showing one form of our device, and Fig. 2 is a similar view, showing a slight modification.

Like marks of reference refer to similar parts in both views of the drawings.

5 is the conduit of an ash conveyer system. This conduit is supplied with one or more steam jets 6 for forcing the ashes through the same. One of the said jets is shown in Fig. 1 of the drawing. The discharge end 7 of the conduit 5 is arranged perpendicularly so that its discharge orifice 8 will eject the ashes upwardly in a vertical direction.

Referring now particularly to Fig. 1, the vertical end 7 of the conduit 5 is surrounded by a frame work 9, supporting on its upper end an inclosure 10, which we term a vapor chamber. This inclosure 10 retains the vapor from the injected steam, so as to cause the same to co-mingle intimately with the ashes discharged from the orifice 8. The ashes are discharged against impact plate 11, arranged directly over orifice 8. This impact plate 11 is made separable from the wall of the chamber 10 and secured in position by means of bolts 12, so that it may be renewed when worn. After the ashes strike against impact plate 11 they drop downwardly by gravity, and after co-mingling with the vapor in chamber 10 they fall upon an inclined bottom 13, which forms a chute for discharging the ashes into a suitable receptacle, such for instance as the hopper 14. We find in practice that under ordinary conditions the amount of vapor discharged into the vapor chamber 10 is sufficient to dampen the ashes and prevent the discharge of any free dust. In case, however, that the ashes are unusually dry and dusty we prefer to provide additional means for dampening them. Such means we illustrate in Fig. 1 of the drawings, as consisting of a water pipe 15 extending across the top of the discharge 16 of the chamber 10, so as to discharge streams of water 17 downwardly across the said opening and thus form a water curtain for securing the additional dampening of the ashes.

In Fig. 2 we have shown a modification of the foregoing apparatus. In this modification a frame work 20 is provided similar to the frame work 9, hereinbefore referred to, but carrying upon its upper end a hopper 21. This hopper 21 is provided with a flue 22, within which is arranged a chamber 23, forming a mixing chamber, and surrounding the upper end 7 of the conduit 5. This mixing chamber 23, like vapor chamber 10, is provided with impact plate 11, held in position by bolts 12. The action of the ashes when discharged against impact plate of the chamber 23 is similar to that above described, except that the ashes drop down into the hopper 21, the displaced air passing up through the flue 22. The ashes are retained in hopper 21 by means of a door 24 until such time as it is desired to discharge them into a suitable receptacle. As has been before stated the action of the vapor in the mixing chamber is sufficient to dampen the ashes under ordinary conditions. In order to dampen the ashes if they are abnormally dry and dusty we provide a water pipe 25 surrounding the lower end of the mixing chamber 23 and provided with perforations for the discharge of streams of water 26 to form a water curtain, surrounding the outlet of the mixing chamber.

Having fully described our invention, what we claim as new and desire to secure by Letters-Patent of the United States is:

1. The combination with an ash conveyer conduit having its discharge orifice arranged to eject the ashes upwardly in a substantially vertical direction, of a mixing chamber sur-

rounding the discharge end of said conduit and provided with an impact surface for stopping the flow of ashes, said conduit discharging substantially in the center of said chamber whereby the ashes are permitted to fall freely on all sides thereof, and a storage chamber arranged below said mixing chamber and adapted to receive the ashes therefrom.

2. The combination with an ash conveyer conduit having its discharge orifice arranged to eject the ashes in a substantially vertical direction, of the mixing chamber surrounding the discharge end of said conduit and provided with an impact surface for stopping the flow of ashes, a storage chamber arranged below said mixing chamber and adapted to receive the ashes therefrom, and means for producing a water curtain arranged between said mixing chamber and said storage chamber.

3. The combination with an ash receiving hopper of a mixing chamber communicating therewith, a flue surrounding said mixing chamber, an ash conveyer conduit discharging into said mixing chamber, and means arranged between said mixing chamber and said flue for producing a water curtain.

4. In a structure of the class described the combination with an ash receiving hopper of a mixing chamber communicating therewith and adapted to discharge thereinto, a flue surrounding said mixing chamber, and an ash conveying conduit arranged to discharge vertically and centrally of said mixing chamber.

5. In a structure of the class described the combination with an ash receiving hopper of a mixing chamber communicating therewith and adapted to discharge thereinto, and an ash conveying conduit arranged to discharge vertically and centrally of said mixing chamber.

In testimony whereof, we have hereunto set our hands and affixed our seals in the presence of the two subscribing witnesses.

ALEXANDER GIRTANNER. [L. S.]
ROBERT H. MILLER. [L. S.]

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."