Mar. 3, 1925. 1,528,360

H. S. AYLING

CONVEYER FITTING

Filed Oct. 24, 1921

Fig. 1.

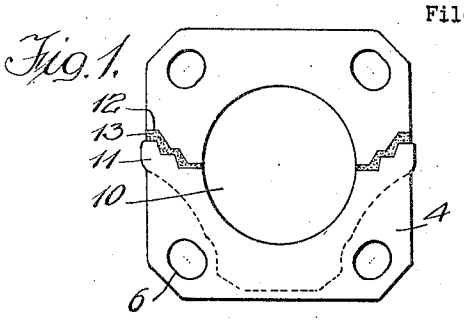


Fig. 2.

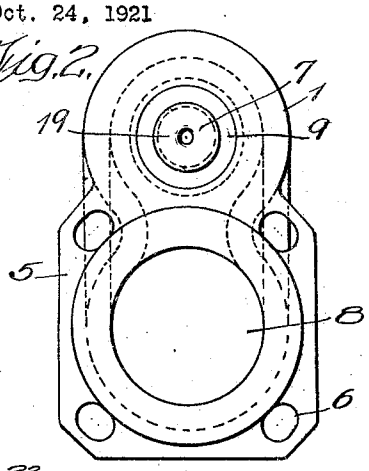


Fig. 5.

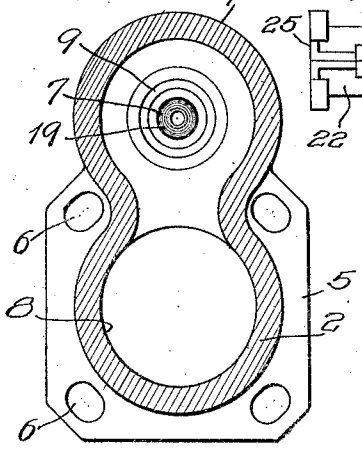


Fig. 6.

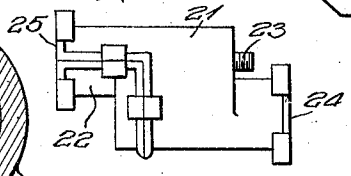


Fig. 4.

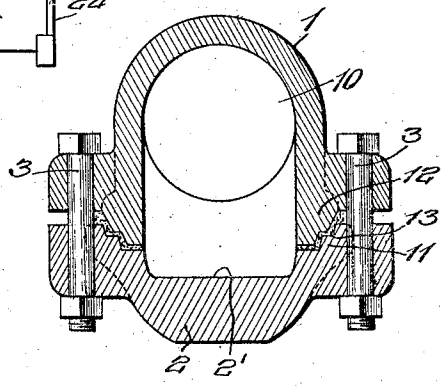
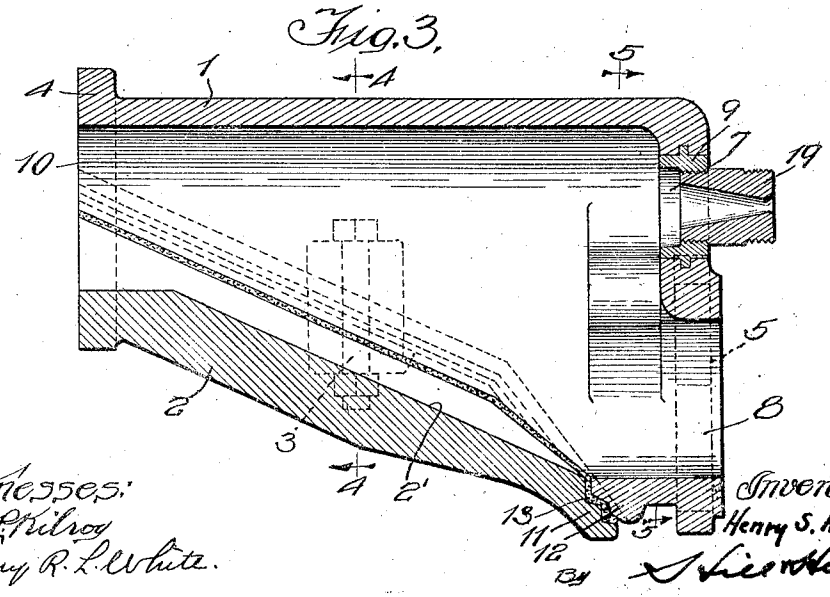


Fig. 3.



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By

Patented Mar. 3, 1925.

1,528,360

UNITED STATES PATENT OFFICE.

HENRY S. AYLING, OF CHICAGO, ILLINOIS, ASSIGNOR TO UNITED CONVEYOR CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

CONVEYER FITTING.

Application filed October 24, 1921. Serial No. 510,134.

To all whom it may concern:

Be it known that I, HENRY S. AYLING, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Conveyer Fittings, of which the following is a description.

My invention relates to improvements in conveyer fittings and more particularly relates to such a pipe fitting used in connection with conveyers for ash or other similar material. At certain points in the conveyer line, especialy in a long line, the velocity of the ash moving through the conveyer drops to a point below that desired, and one of the objects of my invention is to provide means for increasing the velocity of the ash at any point in the line to a higher velocity than that at a point just preceding the point of attachment of the booster.

Another object of my invention is to provide a booster as above described having a removable wear-back member which may be easily removed from the line without disassembling or removing any other part of the fitting.

Another object of my invention is to provide a booster of such a shape and form that the ash admitted into it at one end will be directed into the path of a jet of steam, air, or the like, and will be discharged at the opposite end through an opening whose axis is in alignment with the axis of the jet.

Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosures herein given.

To this end my invention consists in the novel construction, arrangement, and combination of parts herein shown and described, and more particularly pointed out in the claims.

In the drawings, wherein like reference characters indicate like or corresponding parts,

Fig. 1 is a front end view of my improved device;

Fig. 2 is a rear end view thereof;

Fig. 3 is a longitudinal sectional view thereof;

Fig. 4 is a sectional view taken substantially on the line 4—4 of Fig. 3,

Fig. 5 is a sectional view taken substantially on the line 5—5 of Fig. 3, and

Fig. 6 is a view in elevation of a modified construction.

In the drawings, wherein I have illustrated the preferred embodiment of my invention, there is shown a conveyer fitting commonly called a booster because it is used to boost or raise the velocity of the ash conveyed therethrough, and comprising two parts 1 and 2 of any desired metal, that of the part 2 being either the same hardness as that of the part 1, or of a harder metal, as desired, and removably secured thereto by means of detachable bolts 3. Both of the ends of the fitting are flanged, as at 4 and 5, and each of the flanges are provided with elongated bolt holes 6 therethrough for detachable connection to the adjacent fitting. At one end of the fitting, the part 1 is provided with a pair of inlets 7 and 8, the former being the inlet for the jet of steam, air or the like, and the inlet 8 being for the admission of the ash or other material being conveyed through the section, these inlets being laterally spaced and opening into a common chamber. The inner face 2′ of the wear part 2 is preferably flat or straight, as most clearly shown in Figs. 3 and 4.

As it would be extremely difficult to provide a pipe tap in the hard material of which the fitting is usually made, I have found it highly desirable to provide a soft iron plug 9 which is set in place in the mold when the conveyer section is cast, so that it is substantially integrally secured thereto. The plug is threaded as desired for connection to the nozzle 19. At the opposite end of the fitting and in axial alignment with the steam jet inlet is an outlet port 10, formed jointly by the members 1 and 2, as shown.

The inner surface of the wear-back member 2 is inclined from the intake to the outlet, so that the material admitted through the inlet port 8 will be deflected directly into the jet coming through the port 7, which will carry it outwardly through the discharge outlet 10. The jet tends to create a vacuum or suction which will draw the ash impelled by a preceding jet through the inlet 8, and gets back of said ash and pushes, forces, or shoots it outwardly through said outlet and a succeeding conduit. The wear-back member, at the point of greatest wear,

is straight, as mentioned, and is thickened in cross-section so that the longevity of said part is greatly increased. The meeting edges of the wear back member and body part respectively are preferably flanged, and in each of these edges is formed a series of stepped portions or shoulders into which a packing material 13 is adapted to be inserted when the two parts are removed. Any desired mixture of packing materials may be used, but I have found it entirely satisfactory to provide a mixture of cement and asbestos for this purpose.

It will be noted in connection with the joints shown, that the outer ends of the pockets are smaller in cross-section than the inner ends so that when the parts are secured together the packing is pressed tightly between the stepped shoulders and cannot be blown or sucked out.

Whenever it is desired to renew the wear-back member 2 after the booster is assembled in the conveyer line, the bolts extending through the bolt holes 6 at one end of the fitting are removed, and the bolts 3 are loosened. Then the wear-back member may be removed without disturbing the part 1 or the rest of the line.

A slightly modified construction is shown in Fig. 6, in which 21 and 22 represent the parts forming the casing and arranged to be suitably secured together and in a conveying line, substantially as described for the other fitting. In this case, 24 represents the inlet and 25 the outlet, 23 being the jet inlet nozzle. With this construction the wear part 22 is not provided with an inclined face, which is not essential to successful operation of the device, although preferred. However, the material, packing into the corner, will in itself, to a certain extent, form an inclined face, which will deflect the material. It will be particularly noted that the type of fitting described, with the inlet and outlet offset and the nozzle arranged to chute the material directly through the outlet that the full effect of the jet is attained, there being no tendency for the same to deflect the material at one side or the other, as in the case where a jet is discharged into the fitting at an angle. When the jet is discharged at an angle, it tends to deflect the material and where jets are discharged at an angle at opposite sides of the fitting the same tends to take a fan shape. Where a plurality of twin jets are employed, it is often difficult to align and adjust the jets or nozzles so as to afford satisfactory and efficient operation. All these defects are obviated in the fitting herein described. It will be obvious that the fitting may be installed as desired, it being immaterial whether the conveying line is horizontal, vertical or at an angle.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, arrangement, construction and combination of parts herein shown and described or uses mentioned.

What I claim as new and desire to secure by Letters Patent is:

1. A booster fitting having an ash intake and a jet intake at one end spaced laterally of one another, and a single outlet at the other end in alignment with the axis of the jet, said fitting comprising a removably detachable wear-back member extending from said outlet to said ash intake and forming a part of said outlet.

2. A booster fitting having an ash intake and a jet intake spaced laterally of each other at one end, and a single outlet at the other end in alignment with the axis of the jet, said fitting comprising a removably detachable wear-back member extending from said outlet to said ash intake for directing the ash into said jet and forming a part of said outlet, packing means between the cooperating meeting edges of the sectional part of said fitting, and adjustable means for detachably holding said parts together.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY S. AYLING

Witnesses:
ROY W. HILL,
H. C. JACOBS.