March 29, 1932. R. E. BRIGGS 1,851,380

SAND BLAST CONVEYER

Filed Oct. 12, 1928

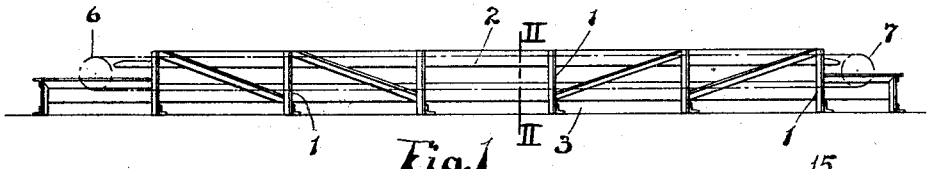

Fig. 1

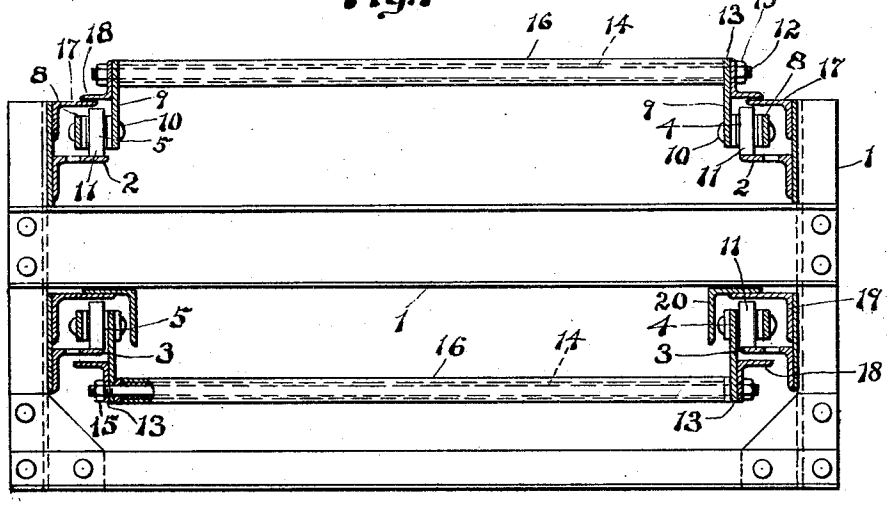

Fig. 2

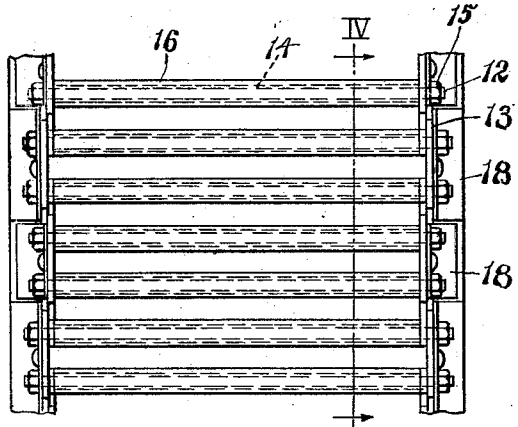

Fig. 3

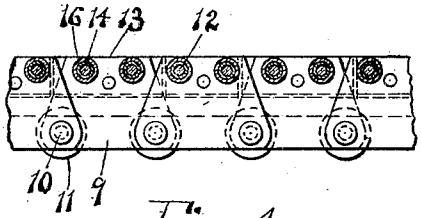

Fig. 4

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UNITED STATES PATENT OFFICE

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SAND BLAST CONVEYER

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The present invention relates to certain new and useful improvements in sand blast conveyers, of the type adapted to carry castings, and similar objects, through the effective zone of sand blast cleaning apparatus.

It is the especial object of this invention to provide, in a conveyer of the class described, means to protect the conveyer mechanism from the destructive action of the sand blast.

The means whereby I attain this object are fully set forth in the following specification and illustrated in the accompanying drawings of which

Figure 1 is a side elevation of one embodiment of my invention.

Fig. 2 is a cross sectional view on an enlarged scale taken along the line II—II of Fig. 1.

Fig. 3 is a fragmentary plan view of the conveyer illustrated in Fig. 2.

Fig. 4 is a longitudinal sectional view taken along the line IV—IV of Fig. 3.

Like numerals refer to similar parts in the several figures.

For purposes of illustration I have somewhat diagrammatically shown in Fig. 1 of the drawings, a structure suitable for the support of a conveyer embodying my present invention. As here shown the material carrying element is supported upon an elongated frame comprising a plurality of frames including uprights and cross pieces 1 to the uprights of which are attached the longitudinally extending angle bars 2 and 3 the horizontally projecting flanges of which constitute tracks along which the chains 4 and 5 of the material carrying element of the conveyer travel. Suitably mounted at the ends of the frame thus formed are sprocket wheels 6 and 7 around which the chains 4 and 5 travel. Suitable power connections, not shown in the drawings, may be provided to cause the rotation of these sprocket wheels, but as such devices are well understood in the art their illustration and description is believed unnecessary.

The chains 4 and 5 are composed of overlapping side plates or links 8 and 9 joined together by suitable pintles 10 in the manner well understood in the art. Rotatably mounted upon the pintles 10 are rollers 11 adapted to travel along the track angles 2 and 3 to supply an anti-friction support for the load upon the conveyer. The chains 4 and 5 are connected together by cross rods 12 which extend through suitable apertures in the outwardly projecting extensions 13 of the side bars 9. Spacing sleeves 14 are mounted upon the cross rods 12 and against the ends of these sleeves, the extensions 13 are firmly clamped by the nuts 15 screw threaded to the cross rods 12. The spacing sleeves 14 which constitute the material carrying element of the conveyer, are preferably formed of metallic tubes having a coating 16 of resilient abrasion resisting material, preferably a suitable preparation of rubber vulcanized thereon, by which the tubes are protected from the destructive action of the sand blast used to clean the castings, or other objects, while being carried by the conveyer. Instead of vulcanizing a coating of rubber upon the spacing sleeves 14, lengths of rubber tubing may be slipped over these rods to form protective covering therefor.

Attached to the uprights 1 are longitudinally extending angle bars 17 having inwardly projecting flanges extending over the rollers 11 of the upper run of the conveyer chains. Cooperating with the angle bars 17 to protect the rollers and draft elements from the destructive action of a sand blast directed upon articles carried by the conveyer, an endless sectional and flexible shield comprising a series of angle plates 18 are secured to the outward extensions 13 of the links 9. One plate 18 is secured to each link 9, and therefore partakes of the same movements as these links. The horizontal flanges of these plates 18 are arranged so that they overlap the horizontal flanges 17 of the stationary shield plates. The shield plates 18 being secured to the extensions 13 by means of rivets and the rods 12 extending therethrough, constitute a series of shields arranged in articulated relationship travelling with the draft elements to form a substantially continuous flexible shield which travels above the stationary shield 17

and rollers 4 on the upper run of the conveyer and beneath the rollers and tracks 3 on the lower run of the conveyer. The plates 18 being spaced slightly apart as shown clearly in Figure 3 allow flexibility while passing around the sprocket wheels 6 and 7. Angle bars 19 and 20 supported by the cross pieces and uprights 1 form an inverted channel which forms with the tracks 3, a substantial housing to afford similar protection to the chains and rollers of the lower run of the conveyer.

In the construction above described, I have provided a conveyer adapted to support and transfer castings, or similar objects, during the process of their cleaning by sand blast or similar instrumentalities wherein the moving parts of the conveyer are effectively protected from the destructive action of the cleansing agent. It is to be understood, however, that I do not limit myself to the precise construction here shown since the apparatus may be subject to wide variation as to details without departure from the spirit of my invention.

What I claim is:—

1. In a conveyer, a continuous flexible supporting element including vertical side links, and a shield carried by and depending from said supporting element to protect said side links.

2. In a conveyer, a continuous flexible supporting element including vertical articulated side links, and a series of rigid laterally projecting members carried by said links and cooperating with each other to form a substantially continuous protective shield for said links.

3. In a conveyer, a continuous draft chain including vertical side links having vertical outward extensions, rollers for said links, a stationary shield plate overlapping said rollers, and shield plates secured to said outward extensions and overlapping said stationary shield plate to form a substantially continuous protective shield for said rollers and draft chain.

4. In a conveyer, an endless draft chain including draft links and flight attachment links, said flight attachment links being extended laterally to points in close proximity to the draft links to form a shield for the draft chain.

5. In a conveyer, an endless draft chain including draft links and flight attachment links, said flight attachment links being extended beyond the draft links, and lateral extensions carried by the link extensions and overlapping the draft links to form a shield therefor.

6. In a conveyor, an endless draft chain including articulated links, the inner links of the chain being extended laterally to shield the draft chain, and carrier flights carried by the extended portions of said inner links.

7. In a conveyer, an endless draft chain including articulated links, the inner links of the chain being extended to shield the draft chain, carrier flights carried by the extended portions of said inner links, and shield plates extended laterally from the inner links toward the outer links of the chain.

8. In a conveyer, the combination with an enclosed track; of an endless draft chain running on said track and including side links extended to form a wall of said enclosed track.

9. In a conveyer, the combination with a pair of vertically spaced horizontal shield plates constituting parts of an enclosed track; of an endless draft chain supported between said plates and including vertical side links extended to overlap the space between said shield plates and to enclose the draft chain within said enclosed track.

10. In a conveyer, the combination with a pair of vertically spaced horizontal shield plates constituting parts of an enclosed track; of an endless draft chain supported between said plates and including vertical side links extended to overlap the space between said shield plates, and auxiliary shield plates overlapping the space between said link extensions and said first-named shield plates to enclose the chain within said enclosed track.

11. In a conveyer, the combination with a pair of vertically spaced horizontal shield plates constituting parts of an enclosed track; of an endless draft chain supported between said plates and including vertical side links extended to overlap the space between said shield plates, and auxiliary shield plates secured to the extensions of the side links of the chain to overlap the space between said link extensions and said first-named shield plates to enclose the chain within said enclosed track.

12. In a conveyer, the combination with a pair of vertically spaced horizontal shield plates constituting parts of an enclosed track; of an endless draft chain supported between said plates and including vertical side links extended to overlap the space between said shield plates, and auxiliary shield plates secured to the extensions of the side links and being substantially co-extensive therewith to overlap the space between said link extensions and said first-named shield plates to enclose the chain within said enclosed track.

13. In a conveyer, the combination with a pair of vertical spaced horizontal shield plates constituting parts of an enclosed track; of an endless draft chain supported between said plates and including vertical side links extended to overlap the space between said shield plates, and auxiliary shield

plates secured to the extensions of the side links, and conveyer elements carried by said chain and serving to attach the auxiliary shield plates to the link extensions to enclose the chain within said enclosed track.

14. In a conveyer, the combination with a pair of vertically spaced horizontal shield plates constituting parts of an enclosed track; of an endless draft chain supported between said plates and including vertical side links extended beyond the outermost shield plate, and auxiliary shield plates carried by extensions of said side links to overlap said outermost shield plate.

In testimony whereof I have hereunto set my hand.

ROBERT E. BRIGGS.