

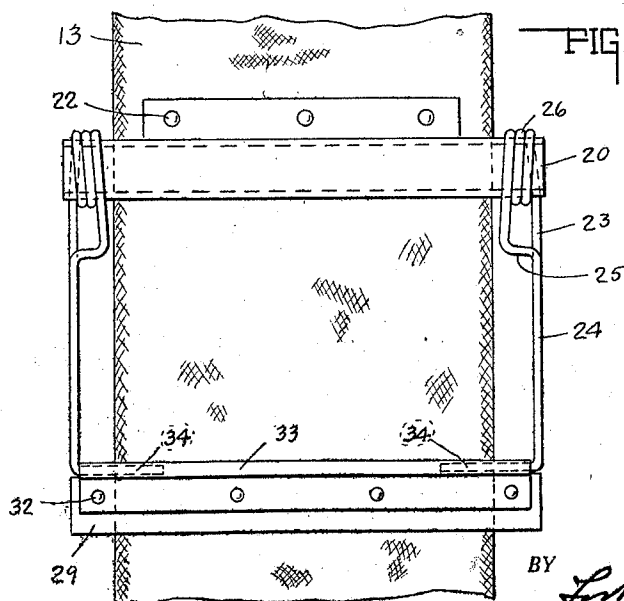
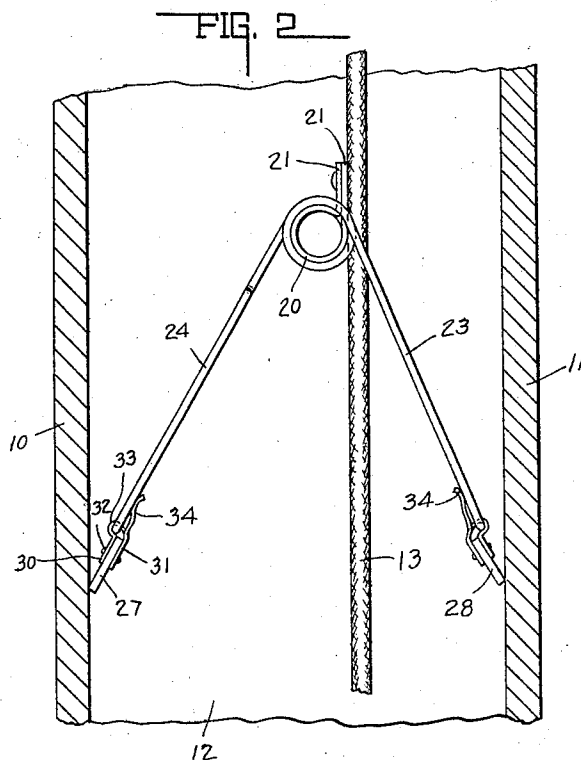
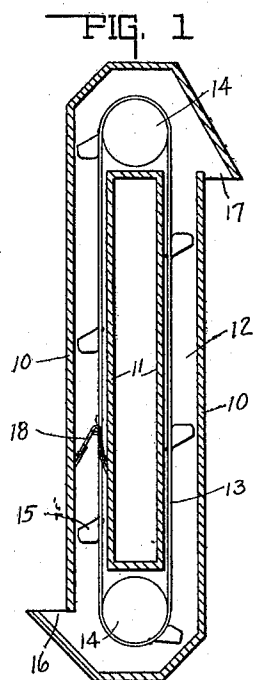
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CEREAL ELEVATOR LEG CLEANER ATTACHMENT

Filed May 18, 1923



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CEREAL-ELEVATOR LEG-CLEANER ATTACHMENT.

Application filed May 18, 1923. Serial No. 639,804.

To all whom it may concern:

Be it known that I, FERDINAND B. WALTHER, a citizen of the United States, and a resident of Scottsburg, county of Scott, and State of Indiana, have invented a certain new and useful Cereal-Elevator Leg-Cleaner Attachment; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

This invention relates to elevators and particularly to means for cleaning the leg thereof. The chief object of the invention is to provide an attachment which is adapted to be associated with the conveyor for cleaning all of the sides of the leg.

The chief feature of the invention consists in the details of construction whereby the cleaner may be attached to the conveyor as an attachment, and furthermore may be attached thereto without severing the conveyor.

A further feature of the invention, by reason of its construction, is that portions of the same may be constructed so as to be standard for substantially all sizes of elevator legs, and it being merely necessary to associate other parts with said standard parts, the former being constructed with reference to the particular dimensions of the legs.

The full nature of this invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Fig. 1 is a longitudinal sectional view of a cereal elevator including the leg, the conveyor and the attachment associated therewith. Fig. 2 is a longitudinal sectional view of the elevator leg and a side elevational view of the endless conveyor with the cleaner attached thereto, as shown in side elevation. Fig. 3 is a front view of the conveyor and the cleaner attachment supported thereby.

In the drawings 10 indicates the front walls and 11 indicates the rear walls of a cereal elevator leg construction. The legs are formed by the front and rear walls with the addition of the side walls 12. An endless belt 13, which preferably is of webbing, is positioned in said legs and is supported upon the pulleys or drums 14 at the upper and lower ends. The belt or conveyor also

supports the usual buckets 15, which buckets are adapted to be filled with material supplied through the intake 16 and are adapted to discharge said material through the discharge or outlet 17. The attachment associated with the conveyor, and preferably supported by the belt, is indicated generally in Fig. 1 by the numeral 18. In cereal elevators it heretofore has been the practice to provide a cleaner carried by the conveyor, but this cleaner did not perform in a satisfactory manner. Cleaners of the character described usually constituted a brush and in service the bristles in said brush gradually assumed an inclined position and when in said position they exerted little or no pressure upon the walls of the elevator leg, and thus failed to perform the cleaning operation. The inherent construction of the cleaner was such that the brush could only be positioned upon the forward face of the conveyor belt, since if positioned upon the rearward face of the belt and projected rearwardly to clean the rear wall of the elevator leg, said brush in passing over the pulleys would bind and prevent further movement of the belt. Furthermore the elevator leg varies slightly in size throughout its length, either due to errors in its original construction or due to warping after its construction. In either event, or both events, the brush cleaner previously described would not thoroughly clean the single face of the elevator leg that it was intended to clean. In a cereal elevator if flour or powdered cereal were the only things that collect upon the wall of the leg, cleaning of the same would not be a difficult problem, but since the flour or ground cereal will adhere to the walls of the elevator leg, such a coating forms an excellent breeding place for moths and vermin of all kinds. Therefore, the necessity for cleaning not only one wall, but all the walls of the elevator is imperative and to accomplish the same the hereinafter described invention is provided.

Reference will now be had to Figs. 2 and 3 wherein the detailed construction and the preferred construction of the cleaner is illustrated. Essentially the cleaner comprises four cleaning surfaces, one for each of the four walls of the conveyor leg and the construction of the cleaner is such that it may be positioned upon the belt 13 without the

necessity of severing the same and also when so positioned it does not interfere greatly with the operation of the belt when passing over the pulley.

5 The preferred form of the invention includes a pivotal support 20 which in length is substantially the width of the elevator leg and the pivotal support is suitably secured to the front face of the belt. Herein
10 said pivotal support is shown formed from a strip of sheet metal, rolled into cylindrical form and provided at its meeting edges with two projecting flanges 21 adapted to lie parallel to each other and be simultaneously
15 secured together and to the webbing by suitable means indicated by the numeral 22. This securing means may be rivets or other equivalent devices. Positioned upon the free and projecting ends of said pivot
20 20 are substantially similar side members. These side members are substantially V-shaped in outline, as shown clearly in Figs. 1 and 2. Herein the back leg of said side member is indicated by the numeral 23 and
25 the fore leg thereof is indicated by the numeral 24. The fore leg is offset inwardly at 25 to provide a space for a plurality of coils 26 which connect the fore leg 24 to the back leg 23 and provide a bearing that receives
30 the pivot 20. The fore leg and back leg 24 and 23, by reasons of the coil spring construction connecting the same, extend outwardly into engagement with the sides 12 of the elevator leg, and thus are adapted to
35 clean the entire side surfaces thereof.

Preferably the front and rear wall cleaning members are substantially the same and herein said members are indicated by the numerals 27 and 28 respectively. A
40 description of one, however, will be sufficient for them both. Preferably the cleaning element comprises a layer of felt or webbing having suitable characteristics and is indicated by the numeral 29. Said webbing
45 is supported between a pair of flanges 30 and 31 by a suitable securing means herein indicated by the numeral 32 and this may be rivets or equivalent device. Said flanges 30 and 31 are connected together by a loop
50 33 and this cylindrical or loop portion 33 provides at each end a socket for the reception of the inwardly turned end 34 upon the fore leg and the back leg 24 and 23 respectively. If desired the cleaning element
55 29, together with its support including the flanges 30 and 31, may be otherwise constructed to suit the particular requirements.

From the foregoing it will be understood that the V-shaped side member comprises a
60 coiled spring at its apex with outwardly extending portions which terminate in inwardly extending ends, and the ends of two of said members are adapted to be connected together by a pair of cleaning elements such as 27 and 28. These cleaning

elements are of sufficient width to clean the entire front and rear faces of the elevator leg. Preferably the pivotal support 20 is of the same width. In this manner the pivotal support and the cleaning connectors
70 can be made for the usual width of the elevator legs and the side members can be made standard for substantially all widths of elevator legs. This is possible because of the yielding formation of the side members, for
75 said side members will tend to force the front and rear cleaning elements outwardly away from each other and thus said elements will always bear upon the front and rear walls 10 and 11 of the elevator leg within, 80
of course, the range of yielding movement of said side members. Since the side members are pivotally mounted and include a yielding connection, it will be apparent that when the belt portion supporting the cleaner attachment passes over the pulley 14 the
85 cleaner will attempt to swing outwardly from the belt so as to position the back portions 23 of the side members in alignment with the belt 13 and the back cleaning element 28 substantially adjacent thereto and thus pass over the pulley with relatively little resistance. In this tilting movement, the forward portions 24 on the side members tend to swing upwardly and outwardly,
90 carrying with it the cleaning element 27. If there is not sufficient distance above the pulley in the chute, but usually there is, the two portions 23 and 24 of said side member approach each other and thus cause the two
95 cleaning members 27 and 28 to approach each other, but this condition is unusual in elevator practice so that the foregoing does not usually occur, but should it be necessary by reason of the particular construction
100 of the elevator, this previously described action will occur.

In order to secure cleaning action upon the front and rear walls, through the cleaning members 27 and 28, some means must
110 be provided for restraining tilting movement of said cleaning elements upon the supports. Herein the tongue portions 34 are formed integral with and from the sheet metal strip which forms the flanges 30 and
115 31 and the connecting loop 33. These projecting tongues or strip members 34 engage the side members and prevent tilting movement of the front and rear cleaning members 27 and 28 inwardly toward the
120 belt beyond a predetermined limit.

While the invention has been described in great detail in the foregoing specifications, such detailed description is given for the sole purpose of furnishing a complete
125 understanding of the invention and the same is not to be considered restrictive in character for the many modifications of the invention which may be made by those skilled in the art to which the same applies are 130

all to be considered as included within the scope of the same, reference being had to the following claims.

The invention claimed is:

5 1. A cleaner for a conveyor leg comprising a support positioned on a conveyor, a U-shaped cleaner positioned upon one side of said support, and another U-shaped cleaner at the opposite side of said support
10 for cleaning the entire leg.

2. A cleaner for a conveyor leg including a conveyor comprising means positioned at each side of the conveyor and supported thereby, and means extending transversely
15 of the conveyor and supported by said side means at opposite sides of the conveyor for cleaning the entire leg.

3. The combination with an elevator leg and an endless conveyor therein, of an attachment secured to said endless conveyor
20 and extending forwardly and rearwardly thereof for cleaning the front and back of the leg.

4. The combination with an elevator comprising a leg, a pulley, an endless conveyor in said leg and passing over said pulley, of an attachment supported by said conveyor
25 and positioned so as to clean the front and rear walls of the leg, and associated with the conveyor so as to pass over the pulley with a minimum resistance to such discharge.
30

5. A cleaner comprising a pair of V-shaped side members, a pair of connections
35 between the free ends of said V-shaped side members, and means associated with the apex of the V-shaped side members for supporting the side members.

6. A cleaner comprising a pair of V-shaped side members, a pair of connections
40

between the free ends of said V-shaped side members, and means pivotally associated with the apex of the V-shaped side members for supporting the side members in tilting relation.

7. A cleaner comprising a pair of V-shaped side members, each including a resilient portion at the apex, a pair of connections between the free ends of the V-shaped side members, and means associated with the
45 apex of the V-shaped side members for supporting the side members and the connections in yielding relation.

8. A cleaner comprising a pair of V-shaped side members, each including a resilient portion at the apex, a pair of connections between the free ends of the V-shaped side members, and means pivotally associated with the yielding portions of
55 the V-shaped side members for supporting the side members in tilting relation, whereby the connections are supported in yielding relation.

9. A cleaner for an elevator leg comprising a pivot of substantially the width of the
65 leg, a spring coiled about the ends of the pivot with portions extending outwardly therefrom and with the free ends of said outwardly extending portions turned angularly and inwardly thereto, and cleaning
70 means connecting said inwardly turned ends.

10. A device of the character described in claim 9 characterized by the pivotal support of the connecting means, and the addition of means for limiting the tilting
75 movement thereof.

In witness whereof, I have hereunto affixed my signature.

FERDINAND B. WALTHER.