Jan. 18, 1949. E. P. ESCHER 2,459,770

CONVEYER COVER CLAMPING AND DUST-SEALING MEANS

Filed Sept. 6, 1945

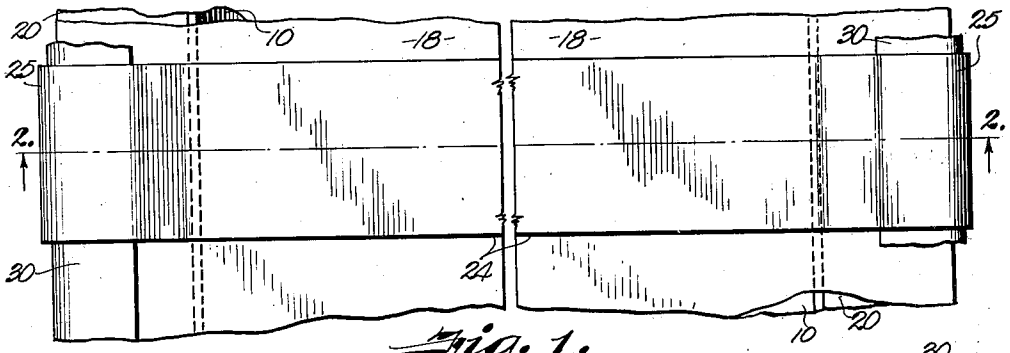

Fig. 1.

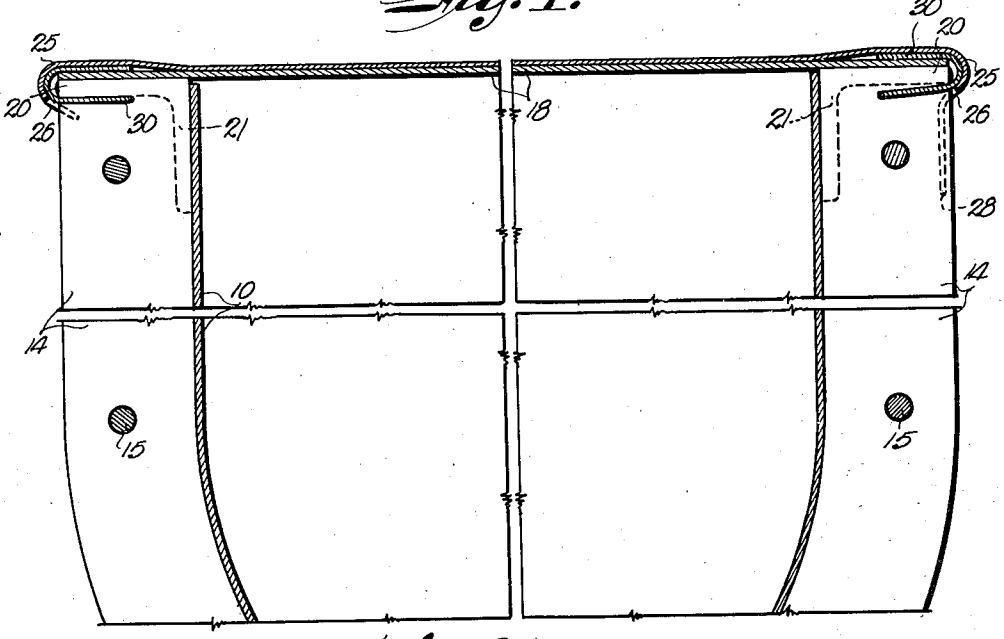

Fig. 2.

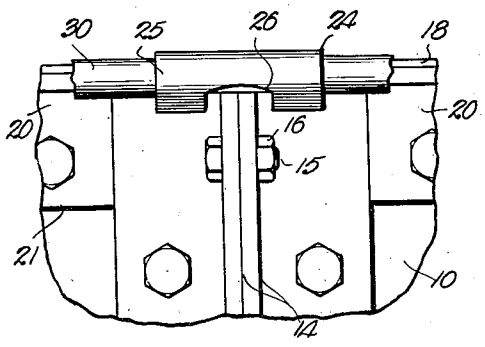

Fig. 3.

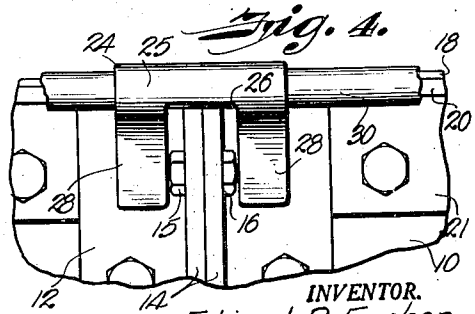

Fig. 4.

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Patented Jan. 18, 1949 2,459,770

UNITED STATES PATENT OFFICE

2,459,770

CONVEYER COVER CLAMPING AND DUST-SEALING MEANS

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Application September 6, 1945, Serial No. 614,761

2 Claims. (Cl. 198—213)

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This invention relates to conveyor apparatus, with particular reference to conveyor troughs in the class of screw conveyors, and aims to provide a more practical and convenient form of securing means as well as efficient dust-sealing connection between the conveyor trough and its cover.

Accordingly one object of the invention is to provide an easily and quickly applied clamping device for holding the cover in proper position, and which is of such a construction as to be readily removed from its clamping position without requiring the operation of adjusting means or other accessory devices for its manipulation.

It is a further object of the invention to provide a clamping device of this character which is especially adapted to be applied in cover-clamping position at the joints between the conveyor trough sections, and to include means for not only accommodating the external flanges at such points but also cooperating therewith for retaining the cover-clamping devices in their proper transverse position, crosswise of the conveyor.

It is also an object of my invention to provide clamping means of this character combined with dust-sealing means adapted to be conventionally applied in edge-sealing relation to the cover and trough, and to be effectively retained in place by the action of said cover-clamping means when the latter is applied in operative position.

For carrying out of the aforesaid objects I have devised structural elements of maximum simplicity and hence involving corresponding economies as regards cost of material and manufacture, in addition to facilitating the operations required for mounting and assembling said clamping and sealing elements in their position of use.

With the foregoing general objects in view, the invention will now be described by reference to the accompanying drawing illustrating an appropriate embodiment of the improved clamping and dust-sealing construction, after which those features and combinations deemed to be novel and patentable will be particularly set forth and claimed.

In the drawing—

Figure 1 is a fragmentary plan view showing a portion of a conveyor trough and top cover structure and including cover-clamping and dust-sealing means embodying the present invention;

Figure 2 is a vertical sectional view thereof, and represents a transverse section taken on the line 2—2 of Figure 1; and

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Figures 3 and 4 are fragmentary detail elevations, illustrating the end portions of the clamping means in clamping position at opposite sides of the conveyor.

Referring now to the accompanying drawing in detail, the improvements are illustrated as applied in relation to a conventional conveyor trough structure, comprising trough sections 10 which, in the illustrated type of construction, are connected in continuous end to end relation by means of angle types of saddle members 12, the outwardly projecting flanges 14 of which are secured together means of bolts 15 and nuts 16 (as illustrated in Figures 3 and 4).

When the conveyor mechanism (not shown) is operated for conveying dry granular and dusty materials, the practice is to mount longitudinal cover plates 18 over the top of the conveyor trough structure, such plates providing a cover for the full width of the trough and ordinarily secured thereto by means of individual bolts or clamping devices at each side of the trough, whereby the edges of the cover are secured to the side flanges 20 provided by the reinforcing angles 21 along the top edges of the conveyor trough sections 10.

As my improved means for securing the cover plates 18 in position, I employ a one-piece clamping member comprising a transverse band or strip 24 of spring steel rubber, plastic or the like which is normally slightly curved or bow-shaped and of a length equal to the width of the cover plate, and terminating at its opposite ends in hooks or rolled portions 25 for clamping the side margins of the cover plate firmly against the top faces of the side flanges 20 of the trough. Moreover, said rolled terminal portions of the clamping strips or bands 24 are recessed and forked, as indicated at 26, for straddling the flanges 14 at the joints between the trough sections 10 of the conveyor. The forked structure on one of said rolled terminals is formed with finger extensions 28, for facilitating the application or the release and removal of the clamping devices, when necessary.

As a means for maintaining a more effective dust seal between the cover member and the trough, an edging strip of suitable material such as rubber, plastic or the like, and of U-shaped design as indicated at 30, is illustrated as applied in position for embracing the outer margins of both the cover plates and the flanges 20 of the trough, and is retained in such sealing relation by means of the roll portions at the opposite ends of the clamping members 24.

When the edging strips **30** are used, the clamping devices **24** are so formed that, after being applied in clamping position, their main body portions will be sprung into firm clamping engagement with the top face of the cover for substantially the entire distance between said strips **30**, as illustrated in Figure 2.

In applying the improved devices in place, after the cover structure **18** has been mounted in position, with the edging strips **30** fitted to the sides thereof and embracing both the cover and the flanges **20** of the trough, it is only necessary to hook one end of the clamping strip **18** around the edging strip **30** and in forked relation to the flanges **14** at one side of the trough, and then bring the strip or band **18** down flatwise upon the top of the cover while hooking its opposite end into similar engagement with the edging strip **30** and flanges **14** at the opposite side of the trough, as clearly illustrated in Figures 2, 3 and 4. The clamping strip is thus held securely in place and thereby retains the cover and edging material in the position shown, and, due to its being applied with a spring clamping action, insures a tight and dust-sealing relation along both side of the conveyor trough. When necessary to remove the cover, the cover-clamping strips are as easily released and removed by simply grasping the extension fingers **28** and lifting the ends of the device out of engagement with the cover margins, in an obvious manner.

It will therefore be apparent that a simple and convenient and yet very efficient and practical construction has been devised for the purposes of my invention, both as to securely clamping the conveyor cover in place and also for providing an effective dust seal in connection therewith; and furthermore, that the feature of the forked relation between the clamping device and the side flanges of the trough has the added advantage of retaining the clamping band or strip in correct transverse position, across the cover. While I have illustrated a preferred form of my improved construction, I desire to be understood as reserving the right to such changes or modifications as may fall within the scope of the appended claims.

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

1. Clamping means for securing conveyor trough cover plates upon the upper margins of the conveyor trough sections having vertical connecting flanges, comprising a normally curved and bow-shaped spring metal clamping strip having hook terminals for releasable engagement with said upper margins of the conveyor trough, with the main body portion of the strip in flattened clamping engagement with the upper face of the cover plate, said hook terminals being recessed for forking over the opposite sides of said vertical connecting flanges and thereby maintaining said strip in transverse position crosswise of the trough.

2. Clamping and dust-sealing means for the removable cover plates of conveyor troughs having outwardly projecting flanges at their top edges, comprising U-shaped edging bands or strips removably fitted over the outer margins of said trough flanges and cover plates, and a normally curved and bow-shaped spring metal clamping strip having hook terminals for releasable engagement with said edging bands or strips at the opposite sides of the trough, with the intermediate or main body portion of said clamping strip in flattened clamping engagement with the upper face of the cover plates thereby holding said plates in cover position with said edging strips in sealing relation to the outer edges of said cover plates and trough flanges.

EDWARD P. ESCHER.

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