Jan. 5, 1932. E. M. GARBE 1,840,029

SIFTER CONTROL

Filed Jan. 3, 1928 2 Sheets-Sheet 1

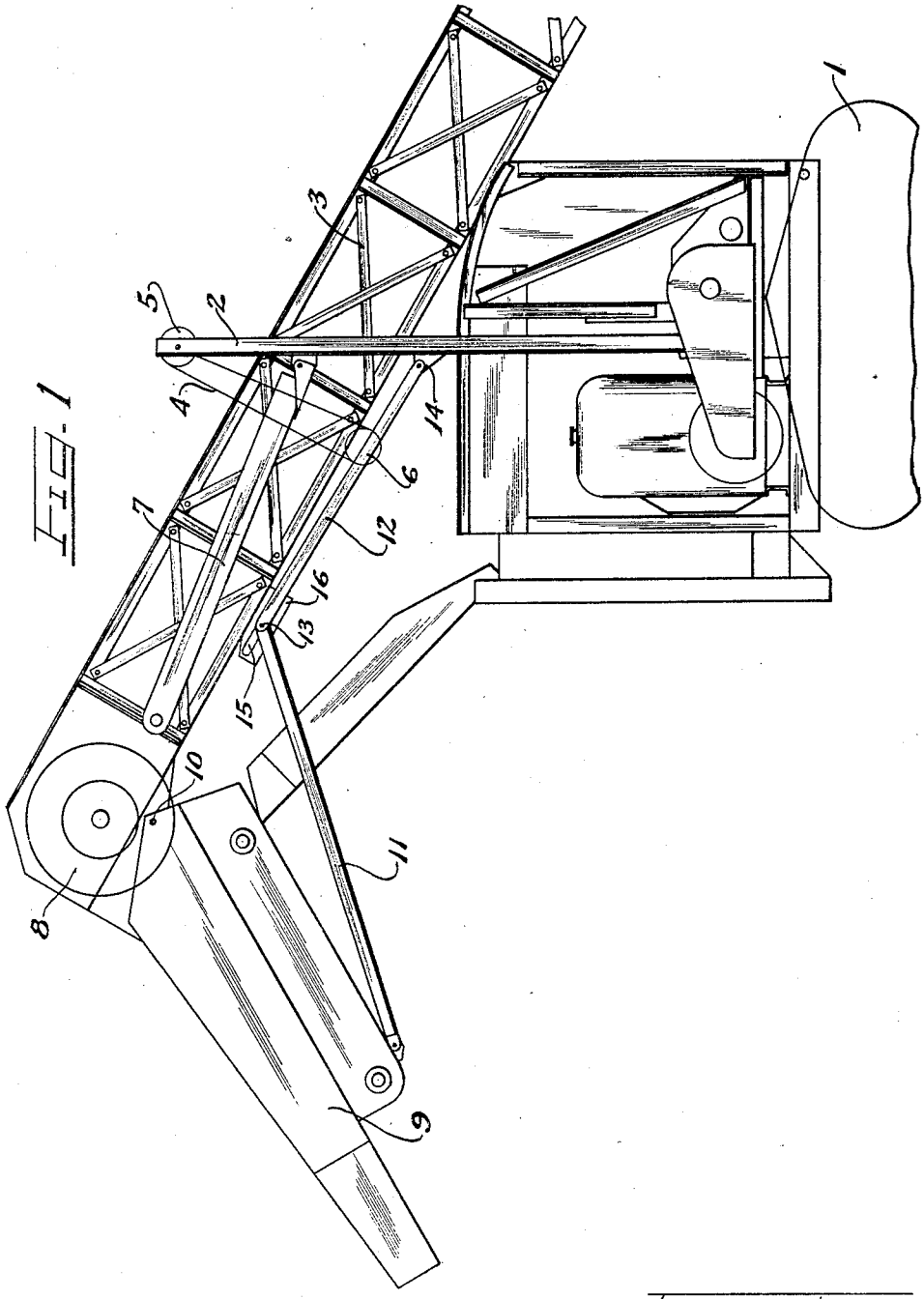


Fig. 1

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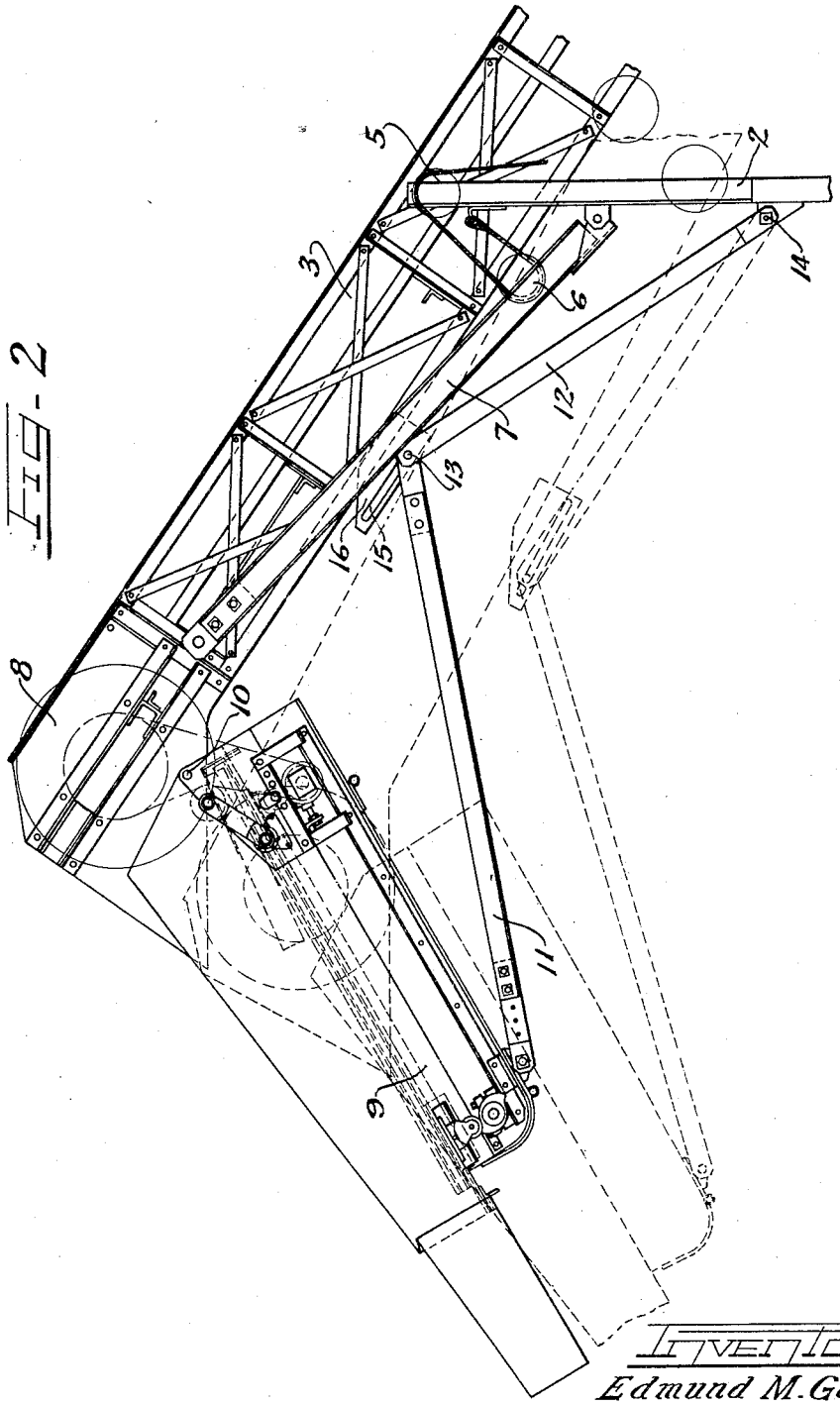


Fig. 2

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UNITED STATES PATENT OFFICE

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SIFTER CONTROL

Application filed January 3, 1928. Serial No. 244,081.

This invention relates to a sifter control for conveyors and concerns itself with means for varying the angularity of the sifter with respect to the boom as the latter is tilted in order that the sifter may maintain substantially the same inclination with respect to a horizontal plane for various inclinations of the boom.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and defined in the appended claims.

In the accompanying drawings which illustrate a preferred embodiment of this invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is a side elevation view of a conveyor involving this invention.

Figure 2 is an enlarged fragmentary side elevational view of the same showing the parts in different positions in dotted lines.

As shown on the drawings:

The conveyor to which this invention is applied is shown as consisting of a crawler 1 upon which a suitable supporting frame is mounted. The frame work supports a standard or mast 2 from which the boom 3 is suspended by means of a cable 4 trained over a pulley 5 at the top of the standard and over a pulley 6 on the boom. The end of the cable may be attached to a power operated winding drum or the like. A radius rod 7 is pivoted at one end to the boom and at the other end to the standard 2 for maintaining the head sprocket 8 at a uniform distance. The boom is adapted to be raised or lowered and tilted to various inclinations.

The conveyor is adapted for elevating coal and different material which it may be desired to sift. For this purpose a sifter, generally denoted by the reference numeral 9, is pivoted adjacent the discharge end of the boom by means of a pivot 10 whereby the sifter may swing relatively to the boom. The construction of the sifter and its operation is well known and forms no part of this invention except in so far as it may coact therewith.

It is highly desirable that the sifter be maintained at substantially a particular predetermined inclination of about 45° during operation. If the sifter were rigidly secured upon the boom, its inclination would change with every change in the inclination of the boom.

This invention concerns itself with means for maintaining the sifter at substantially the same predetermined inclination irrespective of the inclination of the boom within certain limits. This means is automatically responsive to a tilting of the boom for varying the angularity of the sifter and boom during changes in the inclination of the boom. That is, as the boom is raised or lowered at its upper ends, the sifter is swung relatively to the boom in order to maintain substantially the same particular predetermined inclination with respect to a horizontal plane for the most effective operation.

While the aforementioned means may assume various forms as a matter of illustration, I have shown an adjustable link 11 which is pivoted at one end to the sifter casing, and which is pivotally connected at its other end to the upper end of a second link 12 at a pivot 13. Due to the adjustable feature the inclination of the sifter may be varied to suit the particular material that is being handled. The lower end of link 12 is pivoted to the standard 2 as indicated at 14. The pivot 13 extends thru the links and into a guideway 15 which is in the form of a slot in a plate 16 attached to the bottom of the boom. Consequently the connected ends of the links are susceptible of sliding in the guideway.

It will be noted that when the boom is tilted by moving the upper end downwardly as shown in dotted lines in Figure 2, the pivot 13 will slide toward the left along the slotted guideway. This sliding movement will swing the sifter relative to the boom and change the angularity between the sifter and boom. If on the other hand the boom should be tilted upwardly, the pivot 13 would travel toward the right and swing the sifter in the opposite direction. In either case, the swinging movements of the sifter are merely such as to compensate for the changes in the inclination of

the boom for the purpose of maintaining the sifter at substantially its initial and fixed inclination which is about 45°, with respect to a horizontal plane. It will be noted that the dotted lines of the sifter in Figure 2 are substantially parallel to the full lines thereof, illustrating that the sifter will always have its proper inclination for various inclinations of the boom.

It will be appreciated that the operation of the parts is automatic during the tilting of the boom so that the sifter is automatically swung relative to the boom to maintain its proper inclination without any further effort.

I am aware that many changes may be made, and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon, otherwise than necessitated by the prior art.

I claim as my invention:

1. In a conveyor embodying a boom, a sifter pivoted to the boom, a link connection between said boom and sifter and means automatically responsive to a tilting of the boom for operating said connection for varying the angle between the sifter and boom.

2. In a conveyor embodying a boom, a sifter pivoted to said boom, a toggle member for varying the angularity between the sifter and boom, and mechanism responsive to a tilting of the boom for actuating said member.

3. In a conveyor embodying a boom, a standard for supporting said boom, a sifter pivoted to said boom, a link pivoted at one end to said sifter and slidably connected at its other end to said boom, and a link pivoted to said standard and to said first mentioned link.

4. In a conveyor embodying a boom, a standard for supporting said boom, a sifter pivoted to said boom, and a connection between said sifter and standard responsive to tilting movements of the boom for varying the angularity between the sifter and boom.

5. In a conveyor embodying a boom, a sifter pivoted to said boom, mechanism between the sifter and boom and means responsive to variations in the inclination of the boom for operating said mechanism for varying the angularity between the sifter and boom.

6. In a conveyor embodying a boom, a standard, means for tiltably supporting said boom upon said standard, a sifter pivoted to said boom, and a connection between said sifter and standard, said connection having sliding engagement with said boom.

7. In a conveyor embodying a boom, a standard, means for tiltably supporting the boom upon said standard, a sifter pivoted to said boom, a slotted guide upon said boom, a link pivoted to said boom, a second link pivoted to said standard and pivot means connecting the free ends of said links to said slotted guide for sliding movement therein.

8. In a conveyor embodying a tiltable boom, a sifter pivoted to said boom, and swingable relative thereto, and a connection between said sifter and boom, slidable along the boom for maintaining said sifter at a predetermined inclination for different inclinations of the boom.

In testimony whereof I have hereunto subscribed my name.

EDMUND M. GARBE.