Dec. 13, 1932. J. N. WHYTE 1,890,762

CONVEYING APPARATUS

Filed March 28, 1932

FIG. 1.

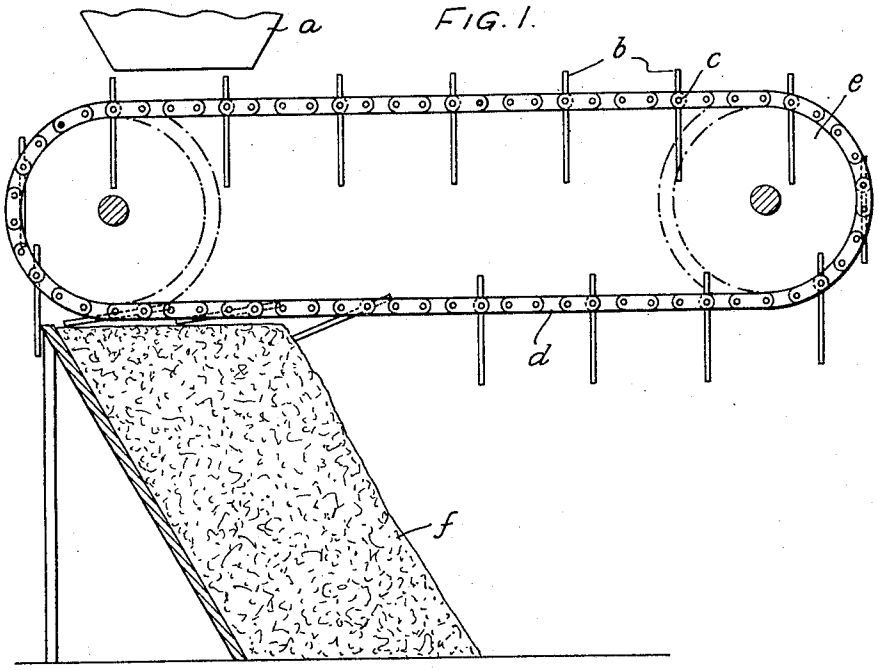


FIG. 2.

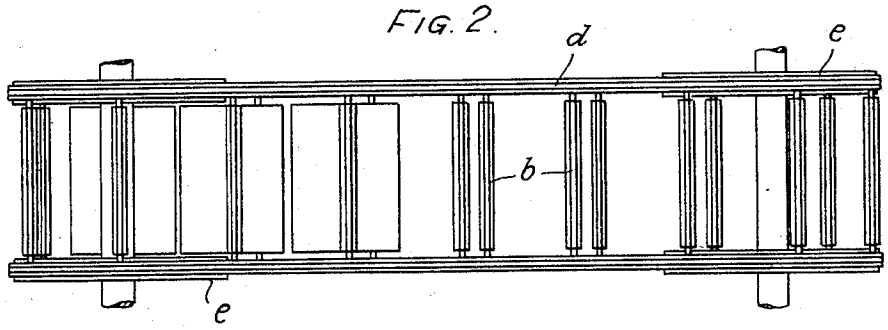


FIG. 3.

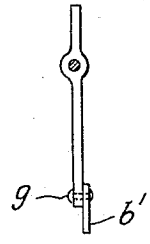


FIG. 4.



Inventor
John N. Whyte
by Wilkinson & Mawhinney
Attorneys.

Patented Dec. 13, 1932

1,890,762

UNITED STATES PATENT OFFICE

JOHN NICOLAS WHYTE, OF LONDON, ENGLAND

CONVEYING APPARATUS

Application filed March 28, 1932, Serial No. 601,633, and in Great Britain July 30, 1931.

The present invention relates to apparatus for feeding material in bulk, and is applicable mainly to cases where it is desirable that the material should be deposited on a pile or heap as smoothly and with as little impact as possible.

According to this invention the apparatus comprises two or more endless traveling ropes or chains between which a plurality of plates are pivotally secured.

The material is fed on to these plates, of which the lower ends brush over the upper surface of the pile of material. As long as the plates are in contact with the pile the newly fed material remains on the plates, but as soon as the latter pass beyond one end of the pile the plates tilt under the action of gravity and the material slides off the plates at the angle of repose on to the pile with a smooth rolling action, fracture of the material being thus avoided.

Owing to wear and tear caused by the dragging of the edges of the plates over the material, such edge portions are made detachable so that they can readily be replaced. These portions may be in the form of shoes or rollers and may be of abrasion resisting material.

Preferably the plates are suspended at a point some small distance above the centre of gravity.

One form of construction of the invention, as applied to a coal bunker, is illustrated in the annexed drawing, in which:—

Fig. 1 is a diagrammatic elevation of the apparatus.

Fig. 2 is a plan, and

Figs. 3 and 4 represent detail views of a plate.

The material is fed from a source of supply *a*, which may be a movable container, and first falls between the plates *b*, which are pivoted at *c* on endless chains *d* passing over sprocket wheels *e*, into a bunker or hopper *f*, which is arranged in an inclined manner, the angle of inclination being selected in accordance with the nature of the material being fed.

When there is a sufficient accumulation of material in the bunker the plates during their travel brush over the upper surface of this material, and assume a substantially horizontal position during such travel over the material, as shown in Fig. 1. During this period the material being fed falls on to the horizontal plates, and is displaced laterally with them. As each coal-carrying plate reaches the marginal portion of the heap of coal it is freed from restraint, and tilt under the action of gravity, causing the coal to slide down the edge of the heap to increase the width of such heap, the sliding action being a smooth one that takes place at the angle of repose of the material, so that fracture or pulverization of the material is avoided.

As shown in Fig. 3, the lower portion *b'* of each plate *b* may be detachable, being secured for example by means of a rivet *g*. The detachable portion *b'* may, as shown in Fig. 4, be fitted at its lower end with a roller *h* or the like.

Having thus described the nature of the said invention and the best means I know of carrying the same into practical effect, I claim:—

1. Conveying apparatus comprising a plurality of endless ropes between which a plurality of plates, normally in a vertical position are pivotally mounted, the plates being so arranged that their lower ends throughout a portion of their travel brush over and are supported by the upper surface of a heap of material, such plates after reaching one edge of the heap of material automatically re-assuming a substantially vertical position.

2. Conveying apparatus comprising a pair of endless spaced members, means for supporting and moving said members, plates pivoted off center between said members, the pivot points being spaced apart over the length of said members, said plates being over-balanced to cause same to assume normally a horizontal position in which the plates are spaced apart substantially the distance between the pivotal points thereof, a feed hopper disposed above the conveying apparatus for delivering material downwardly through the spaces between the normally vertical plates, and a bunker below the hopper and conveying apparatus for the storing of the material, said bunker being so situated

with reference to the lower flights of the conveyor that when the bunker contains sufficient material, such material will engage the plates and cause them to be rotated to a substantially horizontal position for receiving, supporting and conveying the material discharged downwardly from said hopper, said plates adapted to fall into the vertical position when clearing the accumulated material for the purpose of discharging further material along side the stack of material first mentioned.

In testimony whereof I have signed my name to this specification.

JOHN NICOLAS WHYTE.