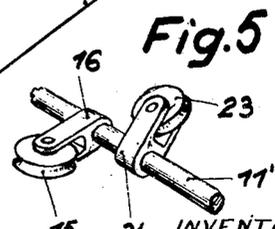
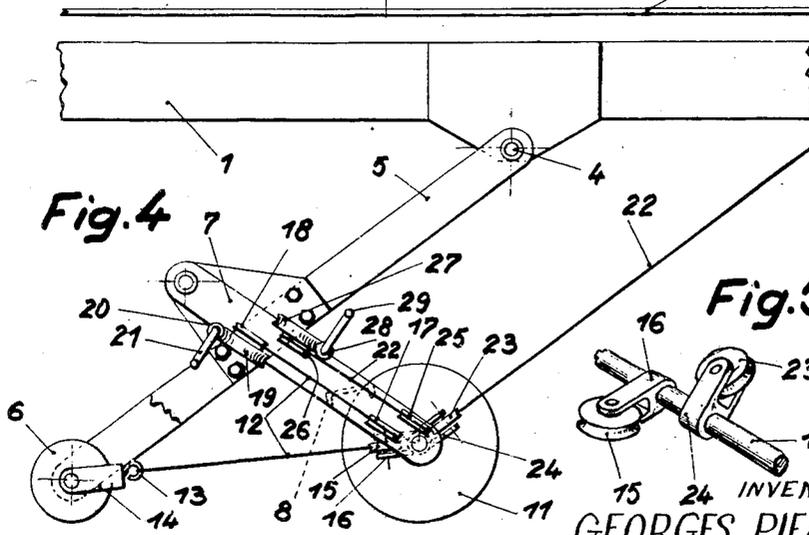
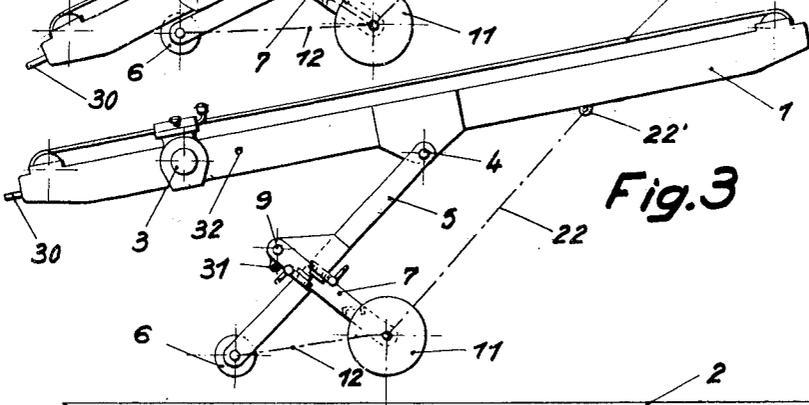
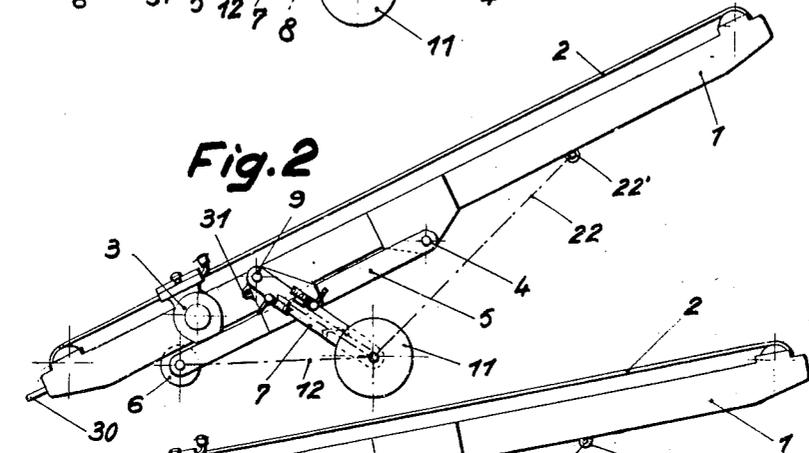
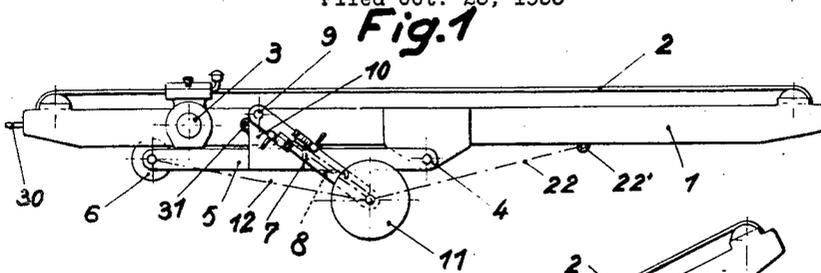


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BAND CONVEYORS

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BAND CONVEYORS

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The present invention provides a novel band or belt conveyor for various different uses and positions and capable of being adapted for numerous different conditions of service including loading and unloading.

The particular feature of the conveyor of my invention consists in that it is supported on a hinged frame having the shape of an inverted letter Y in side view and supported on the ground by means of wheels of variable span enabling the required ground space occupied to be reduced to the minimum.

This reduction in space requirement is of great importance since it enables the conveyor to be advanced as closely as possible to the working place such as freight car interiors, ships' holds, cellars and so on.

In accordance with one embodiment, the conveyor assembly proper of my invention, comprising the table supporting the conveyor band and the self-contained driving means for the latter, is supported on a hinge joint by the aforesaid frame Y, or, more precisely, a first arm of said frame, this arm consisting of two lateral struts suitably cross-braced and supported on the ground by a centrally-placed wheel. A second arm is hinged at about the middle of the first arm and is similarly formed of two cross-braced side struts supported on the ground through the means of two side wheels.

The two arms, hinged in the form of the letter Y, form the underframe or carriage and are adjustable by a device enabling the span or base-length of the front and back wheels to be varied, thereby regulating the height of the above-mentioned first arm and, consequently, of the conveyor band itself.

Furthermore, since the conveyor band is unbalanced with reference to the upper part of the first-named arm, both as a consequence of the location of its hinge joint and by the weight of the driving motor and its control means, this assembly is further adjustable by means for varying the inclination of the conveyor band and its supporting table.

The two devices for respectively regulating the length of the wheel base and the inclination of the conveyor band, may have the form of hydraulic or mechanical lifting jacks, or of cables and hauling winches which latter are lighter and simpler, and consequently less costly.

The foregoing and further features of the present invention will be apparent from the following description aided by the accompanying diagrammatic drawings which show one constructional form merely by way of example and wherein:

Fig. 1 shows the illustrated embodiment folded up in the travelling or road position closed-up to be transported to a new location.

Fig. 2 shows it in the position of an elevator to lift material from a lower to a higher point.

Fig. 3 shows it in the translating position for loading and unloading.

Fig. 4 shows on a larger scale, the devices for regulating, by means of cables, the length of the wheel base, and the inclination of the conveyor band proper.

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Fig. 5 is a perspective view of a detail of the pulley and cable system for changing the spacing of the supporting wheels and changing the inclination of the table supporting the band.

Referring to the drawing, the conveyor assembly comprises a table 1, a conveyor band 2, and a motor 3 for driving the band 2, and table 1 is pivotally connected at 4 to the upper part of a first double arm 5 formed of two forked side struts suitably cross-braced and supported on the ground by a central wheel 6. A second auxiliary double arm 7, similarly formed of two side struts cross-braced by a fitting 8, is pivotally connected at 9 on a fixed bracket 10 attached to the first arm 5 approximately at half the length of the latter. This second arm 7 is supported on the ground by two side wheels 11. The two double arms 5 and 7 forming the underframe or carriage, have in side view the form of an inverted letter Y.

By bringing the axles of the wheels 6 and 11, towards each other, the length of the base of the supporting triangle formed by the two arms 5 and 7 is reduced and at the same time the first arm 5 is raised, thus raising the point at which the table 1 for the conveyor band 2 is hinged to the first arm 5.

The arrangement for thus reducing the wheel base by changing the spacing of the wheels consists of a cable 12 attached at 13 to a strap or yoke 14 fitted on the axle of the wheel 6. This cable passes over a jockey pulley or sheave 15 the strap 16 of which is fitted on the axle 11' (Fig. 5) of the wheels 11, and thence over a return sheave 17 working in a stirrup (not shown) attached on the second arm 7, to a winch barrel or drum 18 driven by a worm wheel 19, a worm 20, and a crank handle 21.

The part of the conveyor band table 1 carrying the motor being heavier than the other end, in order to change the inclination of the conveyor band table, it is sufficient to act on the end remote from the motor by means of a cable 22 attached at 22' and passing over a jockey pulley 23 carried in a strap 24 (Fig. 5) fitted on the axle 11' of the wheels 11, then over a sheave 25 running in a strap (not shown) on the second arm 7, and thence on to a second winch barrel or drum 26 driven as in the previous case by a wheel 27, worm 28, and crank 29.

In the folded-up closed travelling or road position (Fig. 1) to transport the apparatus to a new location, the apparatus runs on the pair of wheels 11 and is drawn by means of a tractor hook 30 on the table 1 carrying the conveyor band 2. The wheel 6 of first arm 5 is retracted and does not rest on the ground. In this position the first arm 5 is locked to the table by means of a pin passing through an eye 31 in the bracket 10 and a hole 32 in the table 1, and rests on the fitting or crossbar 8.

In the elevating position (Fig. 2) the first arm 5 remains locked under the table 1, and the latter is inclined towards the ground. The inclination of the conveyor band 2 is governed by adjusting the length of the wheel base.

In order to use the machine for loading and unloading with variable inclination and height of the conveyor band 2 the two described regulating devices for adjusting the length of the wheel base and the inclination of the conveyor band table are adjusted (see Fig. 3).

The cables can of course be arranged as a tackle, to reduce the force required. Finally, as already indicated, the regulating devices may consist of jacks instead of cables and winches or drums.

It will be apparent to those skilled in the art that my invention is susceptible of modifications to adapt the same to particular applications, and all such modifications which are within the scope of the appended claims I consider to be comprehended within the spirit of my invention.

I claim:

1. In a portable loading machine, a band table, a continuous carrying band, pulleys on the ends of said table over which said band passes, a motor of substantial weight mounted on said table at a point intermediate the longitudinal center point of said table and one of its ends and substantially spaced from said center point, a first arm pivotally connected at one end thereof to said table at a point substantially midway of the length of said table, a pin carried by said first arm at its end remote from the end which is pivoted to said table, a roller rotatably mounted on said pin, a second arm pivotally mounted by one of its ends on said first arm at a point thereof at a substantial distance from both ends of said first arm, an axle carried on the end of said second arm remote from its end of pivotal mounting on said first arm, a pair of wheels rotatably mounted on said axle, first means of adjustable length extending between said pin and said axle, and second means of adjustable length extending between said axle and a point on said table substantially spaced from the longitudinal center point of

said table and on the side of said center point opposite said motor, whereby the inclination of said table can be varied independent of the distance between said pin and said axle.

2. A machine according to claim 1, said means of adjustable length being a cable and a winch, whereon said cable is wound.

3. A machine according to claim 1, said motor and said arms being so arranged that for all inclinations of said table, the center of gravity of the loading machine as a whole is located substantially above said axle.

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