

No. 774,731.

PATENTED NOV. 15, 1904.

J. AINSWORTH.  
PORTABLE CONVEYER.  
APPLICATION FILED NOV. 17, 1903.

NO MODEL.

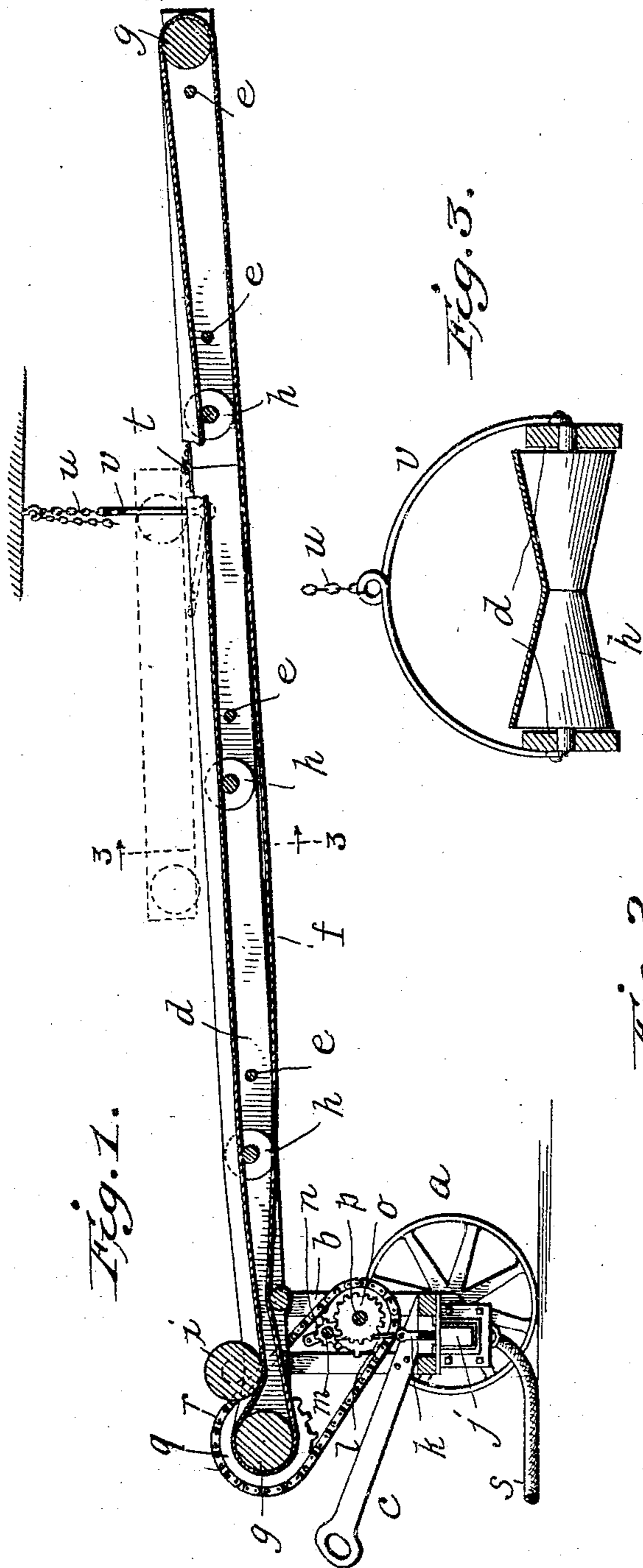
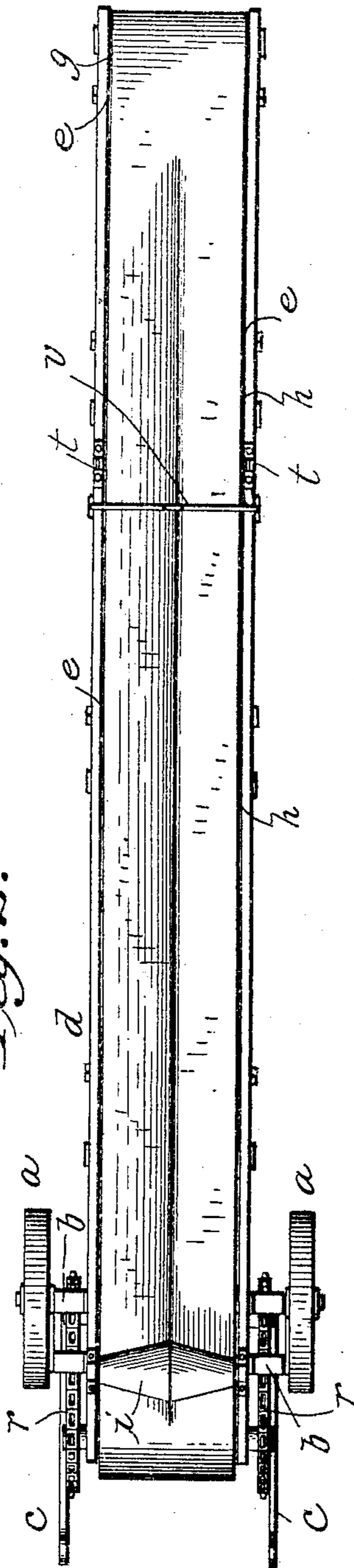


Fig. 2.



WITNESSES

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## UNITED STATES PATENT OFFICE.

JESSE AINSWORTH, OF LYONS, KANSAS.

## PORTABLE CONVEYER.

SPECIFICATION forming part of Letters Patent No 774,731, dated November 15, 1904.

Application filed November 17, 1903. Serial No. 181,547. (No model.)

*To all whom it may concern:*

Be it known that I, JESSE AINSWORTH, a citizen of the United States of America, and a resident of Lyons, Rice county, and State of Kansas, have invented certain new and useful Improvements in Portable Conveyers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

10 Figure 1 is a vertical longitudinal section of the apparatus; Fig. 2, a plan view thereof, and Fig. 3 a transverse section on the line 3 3 of Fig. 1.

The object of this invention is to provide a 15 simple and durable apparatus for loading loose material, such as rock-salt, into box-cars. The present method of loading rock-salt into box-cars is to discharge the material from the spout of a storage-bin onto the floor of the car near the doorway thereof and employ a force 20 of men to shovel the material back into the ends of the car. My present invention is adapted to do away with this time-consuming method, and in its preferred form it consists 25 of a suitable frame mounted on a pair of truck-wheels and provided with a pair of handles by which the machine may be moved about in the manner of a wheelbarrow. Upon the frame is rigidly supported the conveyer-frame, 30 which projects forwardly from the frame a considerable distance and carries a series of rollers for supporting the endless conveyer-belt. This belt is operated by a suitable engine mounted on the truck-frame, and this 35 engine is supplied with motive fluid by means of a suitable flexible hose connected thereto. The outer or discharge end of the conveyer is suspended in a suitable manner from the roof of the car.

40 In using this apparatus it is placed in the car adjacent to the doorway in such relation thereto that the discharge-spout of the storage-bin shall discharge the material onto the outgoing upper side of the belt. The belt is 45 moved continuously so that the material is carried out to the end of the conveyer-frame and discharged. The suspending device enables the conveyer to be inclined upward, so that the material shall be discharged at the

end of the car near the roof thereof, and when 50 one end of the car is filled the apparatus may be turned around to fill the opposite end, the suspending device being disconnected from the first end and suitably connected to the roof at the other end. To facilitate turning 55 the apparatus around in this manner, the conveyer-frame is adapted to be shortened, so that the turning around may be accomplished without removing the apparatus from the car.

Referring to the drawings by reference- 60 letters, *a* designates the truck-wheels supporting the truck-frame *b*. Attached to the truck-frame at opposite sides are a pair of rigid levers provided with handles *c*, which project rearwardly. Mounted rigidly on the upper 65 end of the truck-frame above the truck-wheels is the conveyer-frame, which consists, usually, of a pair of beams *d*, connected together by transverse bolts *e*, this frame being sufficiently long to extend from the doorway of 70 an ordinary box-car to near the end thereof. Upon this frame is supported the endless conveyer-belt *f*, supported upon a series of transverse rollers or shafts journaled in the side beams. The rollers *g* at the ends of the conveyer-frame are straight cylindrical rolls; but 75 the intermediate rolls *h* are concaved or tapered from their ends to a point midway their length, so that the belt shall assume a trough shape, and thereby retain the material. To 80 compel the belt to assume this trough shape after it leaves the driving-roll *g* at the inner end of the conveyer-frame, I journal upon the conveyer-frame a depressing-roller *i*, which is convexed or tapered from its middle 85 toward its ends.

The conveyer is driven by any suitable motor *j*, mounted on the truck-frame. In the drawings I have shown a reciprocating engine bolted to the under side of the truck-frame, 90 whose rod *k* is connected by a suitable pitman *l* to a crank-shaft *m*, journaled in the truck-frame. A pinion *n* on this crank-shaft gears with a suitable spur-gear *o*, mounted on a shaft *p*, journaled in the frame and carrying 95 a sprocket-wheel at each end. To these sprocket-wheels are connected similar wheels *q* on the ends of the shaft carrying the driv-

ing-roller by means of the sprocket-chains *r*. A flexible hose *s* is adapted to convey the compressed air, steam, or other motive fluid to the engine. Where electricity is employed as the motive power the conductor will be in-

closed in the hose.  
The outer end of the conveyer-frame is divided transversely and hinged at *t* on its upper side, so that this outer section may be folded over upon the main part of the conveyer in order to shorten the conveyer-frame, and thus permit the apparatus to be turned around without removing it from the car. By placing the hinges *t* on the upper edges of the beams *d* it will be observed that the ends of the sections abut when the forward section is extended to form stops to limit the downward swing of said section. Before thus folding over the outer end of the conveyer the suspending-chain *u* is of course detached, and it will be obvious that there is sufficient slack in the belt to permit this folding of the conveyer without strain on the belt. The suspending-chain *u* is connected to the conveyer by a swinging bail *v*, which is adapted to fold down on the upper edges of the conveyer-beams when the chain is detached. This chain may be connected to the roof-beams by a hook or other suitable device and may be readily adjusted, so that it will suspend the conveyer at the proper height with respect to the roof of the car.

A further advantage of hinging the outer end of the conveyer and adapting it to fold over in the manner described lies in the fact that when it is swung outward it acts in the manner of a belt-tightener, holding the belt at the proper tension, the length of the belt being of course so regulated that the proper tension is obtained.

It will be observed that in addition to its simplicity and durability this apparatus is very advantageous in that it is self-contained—that is, carries its own motor—thereby enabling it to be moved about and freely manipulated at a considerable distance from its source of power. As stated hereinbefore, any suitable motor may be employed on the truck-frame to drive the conveyer-belt. In practice I have found a two-cylinder compressed-air engine to serve the purpose; but I desire

it understood that I may use a steam or gasoline motor or an electric motor.

It will be observed that by employing but a single pair of supporting and transporting wheels and disposing the conveyer at a right angle to the axles of the wheels permits the wheels to be used as pivots upon which the conveyer-frame is vertically oscillated or tilted in adjusting the height of its delivery end, and by mounting the driving mechanism of the belt on the opposite side of the axles from the projecting part of the conveyer-frame it will be seen that the projecting part of the conveyer-frame will be in a measure counterbalanced, so that a single man may by taking hold of the handles wheel the machine about and properly position it.

It will be understood that I may employ any other suitable means for holding up and adjusting the delivery end of the conveyer.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a portable conveyer, the combination of a truck-frame mounted on wheels, a conveyer-frame mounted on said truck-frame and projecting outward therefrom, a conveyer-belt and supporting-rollers on said conveyer-frame, the outer end of said conveyer-frame being divided and hinged transversely to adapt said outer section to fold over upon the main section, a suspending device connected to the conveyer-frame inside of said hinged section, and means on the truck-frame for driving the conveyer, for the purposes set forth.

2. In a portable conveyer, the combination of a truck-frame mounted on wheels, a forwardly-projecting conveyer-frame carrying a series of transverse rollers, the end rollers being cylindrical and the intermediate rollers being tapered from their ends toward their middle, a depressing or dishing roller mounted above the upper side of the belt, and means on the truck-frame for driving said belt.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 9th day of November, 1903.

JESSE AINSWORTH.

Witnesses:

SAML. JONES,  
M. L. GRIMES.