A. G. SCHPATZ.

PORTABLE TRUCK.

APPLICATION FILED FEB. 28, 1919.

1,382,557.

Patented June 21, 1921.

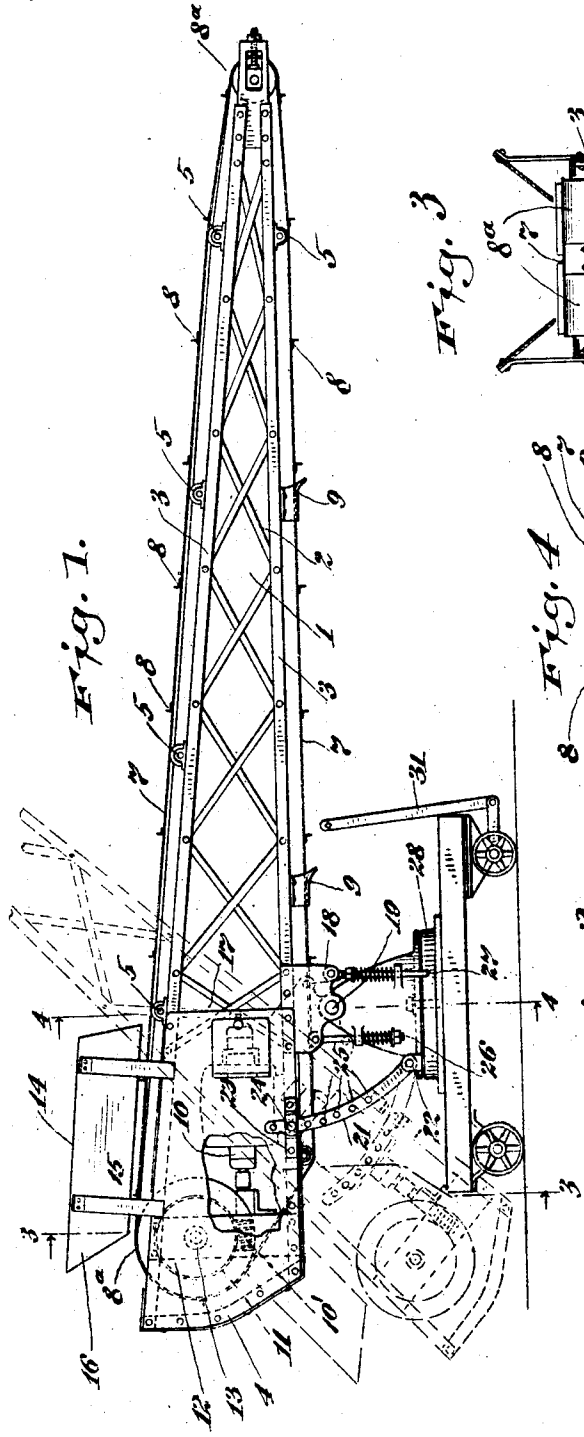


Fig. 1.

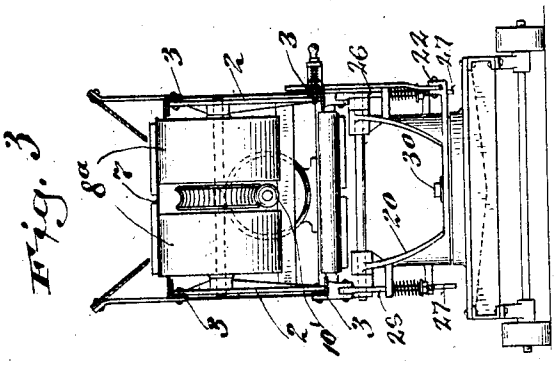


Fig. 3

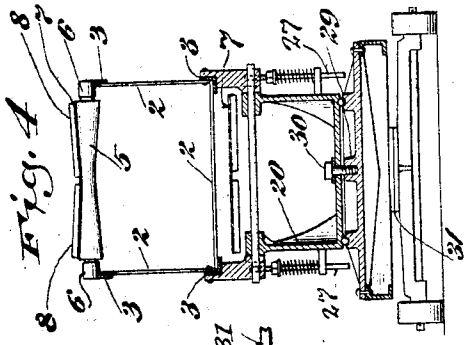


Fig. 4

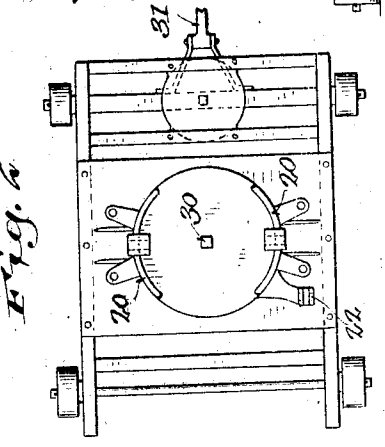


Fig. 2

Inventor
Arthur G. Schpatz.
By Morsell & Keeney
Attorneys.

# UNITED STATES PATENT OFFICE.

ARTHUR G. SCHPATZ, OF MILWAUKEE, WISCONSIN.

## PORTABLE TRUCK.

1,382,557. Specification of Letters Patent. Patented June 21, 1921.

Application filed February 28, 1919. Serial No. 279,686.

*To all whom it may concern:*

Be it known that I, ARTHUR G. SCHPATZ, a subject of the Czar of Russia, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Portable Trucks, of which the following is a description reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to a portable conveying apparatus, and the object of my invention is to produce a type of conveyer that can be used at a considerably steeper incline than the ordinary push-plate conveyer.

Another object of my invention is to produce a conveyer with a well balanced frame, self-contained upon a platform, and adapted to rotate on a turn table.

Another object of my invention is to construct a conveyer partly in sections, rotatable and movable, fitted upon a carriage with ordinary road wheels, independent of rails, and readily put in position wherever it may be required.

To the above purposes my invention consists of certain novel features of construction and arrangement of parts, which will hereinafter be more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a side elevation of my invention;

Fig. 2 is a plan view of the carriage above the rigid part of the rotating element;

Fig. 3 is a sectional view on the line 3—3 of Fig. 1; and

Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

In dealing with machines of the continuous type it is evident that the material which is being handled is evenly distributed over the entire length of the conveyer, and thus the apparatus is only burdened with a comparatively moderate weight, a fact which permits a relatively light construction of the mechanism and its supports. The great advantages of band conveyers are the small driving power required to manipulate them, their noiseless and smooth working, their large capacity, non-injury to the material during the process of conveying, and their comparative security against breakdowns.

The supporting frame-work 1 of Fig. 1 is constructed of suitably strong material, preferably angle iron terminals 3 with diagonally braced side bars 2 and end bars 4 in spaced relations, the upper part of said supporting frame work extending forward in the direction of its length forming an inclined plane. Mounted fixedly upon said supporting frame member 3 is a series of rollers 5 journaled in suitable bearings 6. Said rollers 5 are hollowed out in the middle forming a double cone, and assuming the shape of a trough. An endless flexible belt 7 running over the terminal pulleys $8^a$ rests upon the rollers 5, and a series of push-plates 8 are attached at equal intervals to the endless belt 7, the latter with its attachments traveling over the terminal pulleys $8^a$ so that only one side of the belt is at work at one time. The weight of the push-plates 8 bearing upon the belt 7 adjust said belt to the hollowed out portion of the rollers 5, assuming a well troughed shape. As there is sometimes a tendency for the belt to move sidewise on its rollers, so that the center of the band is not in the center of its supports, the employment of several channel shaped members 9, the channels facing inward and being bolted or screwed to the terminal 3, one is placed against the edges of the belt to prevent the same from oscillating or sagging.

The conveyer has a separate electro motor 10, the shaft of which has a worm 10′ which is in mesh with the worm or driven wheel 11. The shaft 13 of said driven wheel is journaled in the reinforced plates 12, said plates being fastened to the side frame members 3. Mounted on the same shaft 13 and rigidly fastened to the proximities of the worm geared driven wheel without contacting the same are two pulleys 8 and 8′ which engage the inner surface of the belt 7 and cause said belt and the rollers 5 to revolve. A fixed receiving hopper 14, composed of two cheeks 15 preferably iron ribbed and a rear wall 16 solidly

bolted to the stationary frame members 3 receives the material to be conveyed, and discharges the same by means of the aforedescribed troughed belt and push-plates at the terminal of the outer pulley $8^a$ into any desirable receptacle (not shown in the drawing). Said hopper 14 is open at its outer end to allow a free and unimpaired passage of material of varied volumes. The side plates 17 form protecting plates for the mechanism of the conveyer.

Having thus far described the appliances of the conveyer to move the material horizontally, I will not proceed to fully explain the mechanism for tilting, rotating and moving said conveyer.

A bracket 18 rigidly fastened to the frame portion 3 is fulcrumed in suitable bearings 19 on the cylindrical, conical shaped support 20. Adjustably mounted on said support so as to be capable of being adjusted in the direction of the length thereof, a segmental arm 21 pivotally fastened at its lower terminal 22 to the support 20, slidingly engages the internal part of the projection of the bracket 23. When the main frame 1 is tilted into an angular position, as shown in dotted lines in Fig. 1, said frame is made rigid by inserting pins into the annular opening 24 in the bracket 23. A series of perforations 25 in the segmental arm 21 are adapted to form a gradient for the predetermined angle. By means of the coiled springs 26 and 27 the impact of the swinging mechanism is not alone reduced but entirely eliminated. The cylindrical support 20 being revolubly mounted upon the platform 28, is arranged to swing about a fixed center, and having mounted therein an internally screw-threaded socket 29 and a bolt 30. By this mechanism the conveyer can be moved around its support, and swing in any desirable position, by means of the attached and neutrally fastened bearing drum 28. The entire structure hereinbefore described is mounted upon an ordinary truck with suitable road wheels and by means of the handle 31, the entire conveying apparatus can be moved in any desired direction.

What I claim as my invention is:

1. In a device of the class described, the combination with a supporting base member and a conveyer frame member tiltably carried thereby, of means at all times normally yieldingly urging said conveyer frame member to a substantially horizontal position.

2. In a device of the class described, the combination with a supporting base member and a conveyer frame member having a pivotal connection with said base, of means at all times normally yieldingly urging said conveyer frame member to a substantially horizontal position, said means including a guide pin carried by one of said members and having a sliding engagement with the other of said members and spring means yieldingly resisting the sliding of said guide pin, and means for releasably securing the conveyer in tilted position against the action of said first mentioned means.

3. In a device of the class described, the combination with a supporting base member and a conveyer frame member having a pivotal connection with said base, of means normally yieldingly urging said conveyer frame member to a substantially horizontal position, said means including a guide pin pivotally carried by the frame member at each side of its connection with said base member, projections carried by said base member and having apertures therein through which said pins pass, a spring cushion carried by one guide pin and engaging the under side of its adjacent projection and a spring cushion carried by the other guide pin and engaging the upper side of its adjacent projection.

4. In a device of the class described, the combination with a supporting base member and a conveyer frame member having a pivotal connection with said base, of means normally yieldingly urging said conveyer frame member to a substantially horizontal position, said means including a guide pin pivotally carried by the frame member at each side of its connection with said base member, projections carried by said base member and having apertures therein through which said pins pass, a spring cushion carried by one guide pin and engaging the under side of its adjacent projection and a spring cushion carried by the other guide pin and engaging the upper side of its adjacent projection, and means for releasably securing said frame member in a tilted position against the action of said spring.

5. In a device of the class described, the combination with a supporting base and a substantially balanced conveyer frame member pivotally connected to the supporting base, of means normally yieldingly urging said frame member to a substantially horizontal position, and means for readily releasably securing said frame member in a tilted position against the action of said first mentioned means.

6. A portable conveyer truck, comprising a truck member, a revoluble frame mounted on the truck member, an elongated frame tiltingly carried by the revoluble frame, a pulley journaled at each end portion of the tiltable frame, an endless belt carried by the pulleys, supporting pulleys carried by the frame medially of the end pulleys, said supporting pulleys tapering inwardly to less diameter from their outer ends to cause the upper conveying portion of the belt to assume a trough like form, channel bracket means secured to the elongated frame for

holding the endless belt in position on the frame, yielding means for maintaining the elongated frame in a predetermined position, an electric motor mounted on the frame and having a worm and worm wheel driving connection with the pulley at the material receiving end portion of the tiltable frame, and a pivotal segmental arm means for maintaining the tiltable frame in adjusted position.

In testimony whereof, I affix my signature.

ARTHUR G. SCHPATZ.