Dec. 16, 1930. J. A. PAISLEY 1,785,593

APPARATUS FOR USE IN LOADING MINE CARS

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Fig. 1.

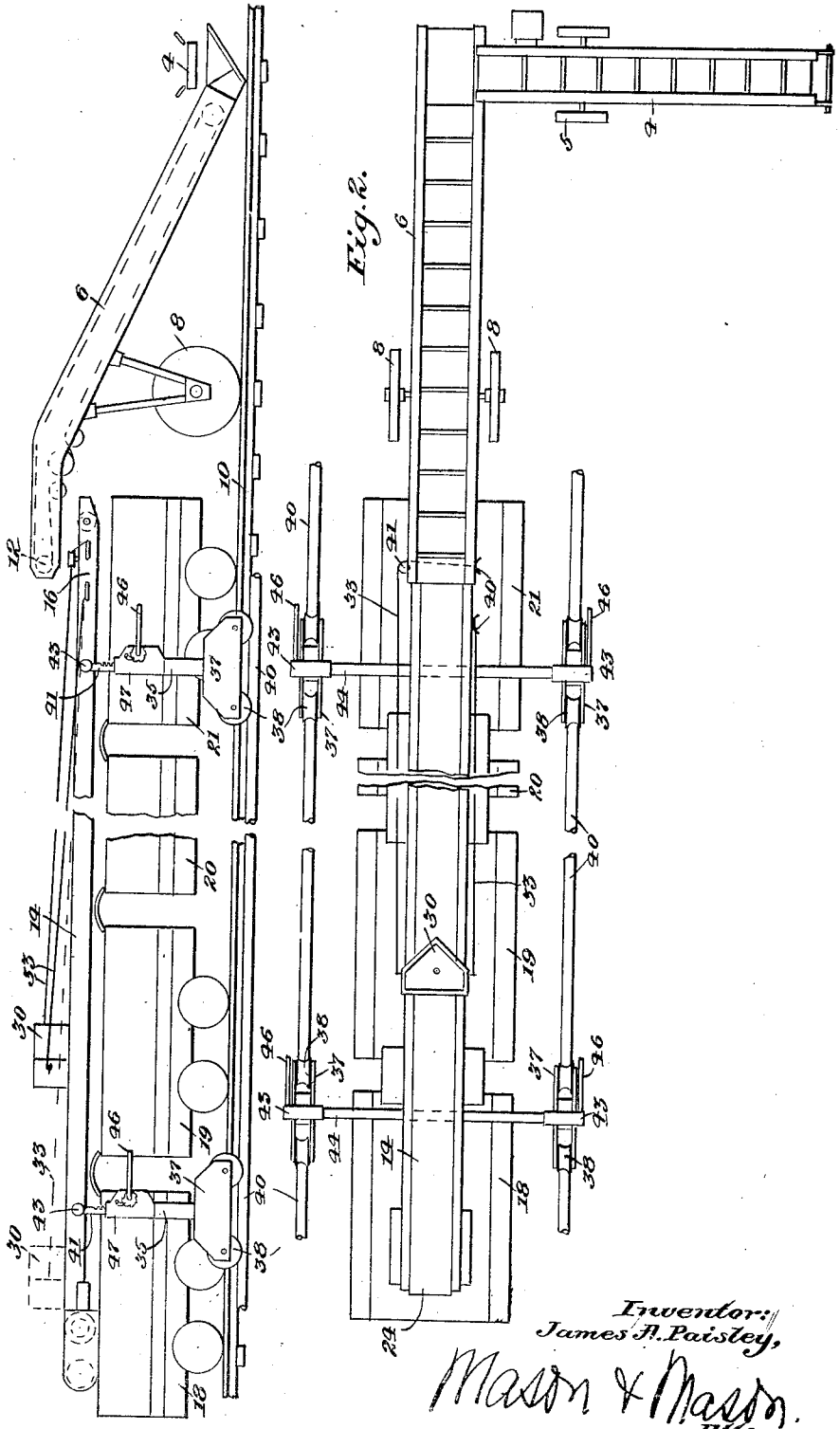


Fig. 2.

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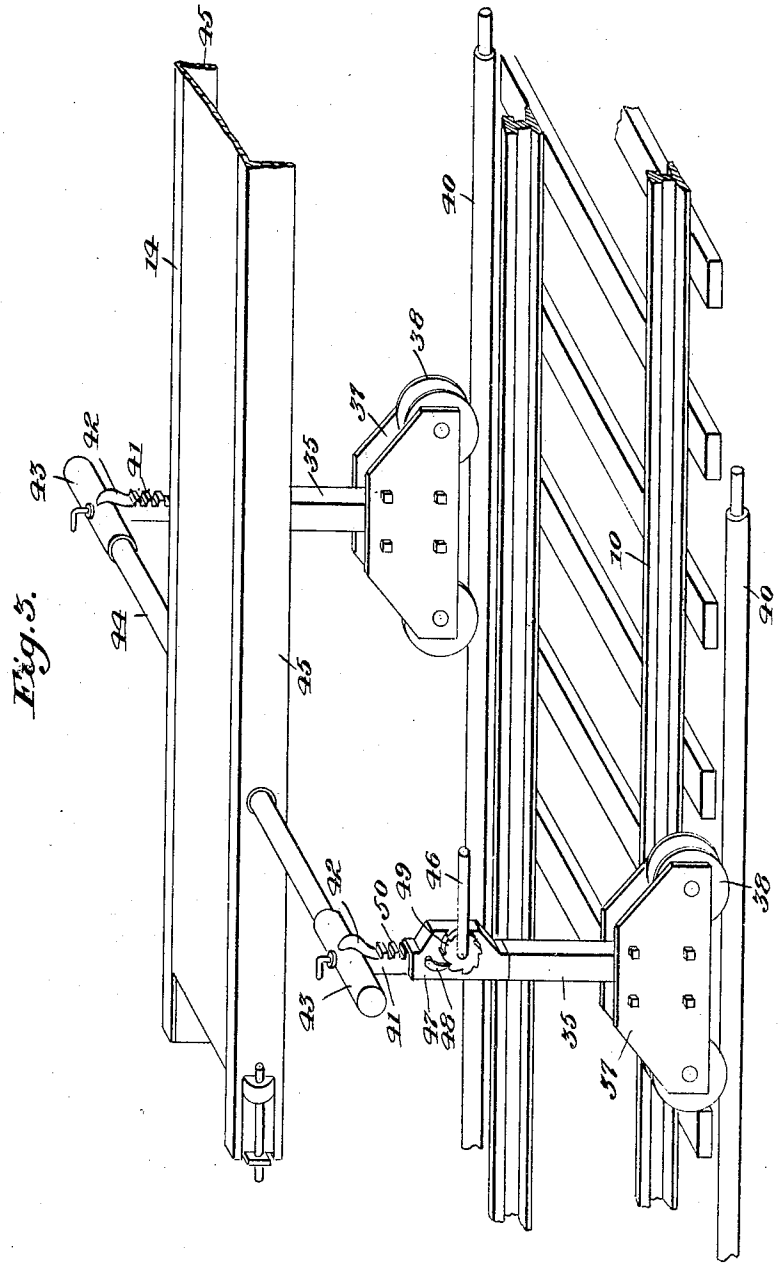


Fig. 5.

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UNITED STATES PATENT OFFICE

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APPARATUS FOR USE IN LOADING MINE CARS

Application filed May 28, 1929. Serial No. 366,654.

This invention relates to apparatus for use in loading mine cars, and more particularly to means for raising and lowering a conveyor relatively to the cars being loaded.

A very important feature of the invention is comprised in a conveyor, preferably of the character shown in my prior application for patent, filed November 17, 1928, Serial Number 320,097, which embodies devices for use in connection with a conveyor for loading a multiplicity of mine cars in the mines. In such apparatus a plow is movably and adjustably supported above the conveyor and may be successively positioned over the several mine cars in a train, for loading such cars without movement of the cars on the tracks. In connection with the conveyor as shown and described in said prior application, it has been found desirable to provide means for supporting the same, preferably near opposite ends, upon jacks or other lifting means which are independently controllable, in order to vary the height of the conveyor over the cars being loaded. By the provision of such raising and lowering means as herein referred to, the conveyor may be located in the proper position over the cars, and supported in a horizontal plane, or at an inclination, as desired.

In connection with the above means for raising and lowering the conveyor, a further feature of the invention is found in the provision of means to vary, adjustably, the space between the jacks which support the conveyor in order that the jacks may be the proper distance from each other to provide sufficient clearance for the cars which move on the tracks between the supporting jacks.

Preferably, the two jacks located near the opposite ends of the conveyor are supported by trucks which move on tracks which latter may be arranged alongside of and parallel with the rails upon which the mine cars travel. By so supporting the lifting devices, it will be seen that the conveyor is capable of being moved, with the jacks, to any desired position longitudinally of the mine car tracks to position it properly with reference to the underlying cars being loaded, and also with reference to a loading conveyor. Such movement of the conveyor is also desirable for the purpose of convenience in transporting it toward and from the various points where it may be needed for loading trains of cars.

The foregoing and other important features of the invention, including details of construction and arrangements of parts will be best understood from the following description when considered in connection with the accompanying drawings, in which:

Fig. 1 is a view in side elevation illustrating a conveyor embodying the features of the present invention;

Fig. 2 is a plan view thereof, and

Fig. 3 is a perspective view, enlarged, illustrating a pair of the lifting jacks located near one end of the conveyor.

The pit car loader 6, which may be of any approved type, is supported for movements on the track 10 by wheels 8, and the loader discharges coal upon the conveyor 14 which is of the endless type and is placed horizontally above the tracks 10 upon which the cars 18, 19, 20 and 21 travel as they are brought into loading position, and carried out of such position by the locomotive.

The conveyor 14 may be provided with a movable plow 30, having ropes or cables 33, 33, one end of which is connected with the plow, while said cables are directed rearwardly and may be manipulated by an operator for causing the plow to travel along the conveyor, for successive positioning over the several cars which are located beneath the conveyor and are being loaded with coal.

As more particularly shown in Fig. 3, the jacks each comprise a standard 35 which is connected with a truck 37, provided with wheels 38 which travel upon the tracks 40. The standard 35 of each jack receives telescopically a movable stem 41 provided at its upper end with a fork 42, which embraces a sleeve 43. The two sleeves 43 are slipped over the ends of a pipe 44, and have set screws 43a for fixedly securing the sleeves 43 in adjusted positions on the pipe 44 which pipe passes through the side walls 45 of the conveyor. It will be understood that each end of the conveyor is supported by two jacks through the instrumentality of a pipe 44 as shown for one

end of the conveyor frame in Fig. 3 of the drawings. Each jack is provided with a crank 46, the shaft of which passes through a casing 47, which is provided with a pawl and ratchet 48, 49. The shaft which carries the ratchet, and is enclosed within the casing 47 is provided with the usual spur gear or pinion which meshes with a rack 50 carried upon the movable member 41 of the jack.

By the construction described, it will be evident that each pair of jacks and the pipe 41 constitute means for supporting one end of the conveyor 14, and that upon rotation of the crank arms 46 the movable members 41 of the jacks will be elevated and held in any position of elevation by the pawls 48. It will also be manifest that upon release of the pawls the jacks carrying the conveyor may be lowered, to any suitable height desired. It will also be apparent that the four jacks, two at each end of the conveyor, together with the conveyor, may be moved as an entirety along the tracks 40 for positioning the conveyor at any suitable point relative to the pit car loader and the cars, so that the apparatus consisting of the two pairs of jacks supported upon wheel trucks, is capable of effecting movements of the conveyor longitudinally to place the same, and transversely of the length of the conveyor to control its height above the cars, or for the purpose of leveling the conveyor or positioning it at an inclination, as desired. The distance between the jacks is, as above described, made variable through the adjustment of the sleeves 43 on the pipes 44, such sleeves being held in adjusted position by the set screws 43*a*. This is an important feature in that it serves to provide the proper clearance space between the jacks for mine cars of varying widths, or having more or less side overhang, and also for properly positioning the jacks for different gages of the tracks 40 on which the trucks supporting the jacks are movable.

The right is reserved to make such changes in the details of construction or arrangement of the several parts as herein illustrated, as are comprehended by the following claims.

I claim:

1. In an apparatus for loading cars, a longitudinally arranged conveyor, separate lifting devices arranged adjacent opposite ends of the conveyor, transverse members carrying sleeves adjustably connecting pairs of lifting devices and the transverse members and movable supporting means for said lifting devices.

2. In an apparatus for loading cars with granular material, a horizontal conveyor arranged to be located over a train of cars, a pair of lifting jacks arranged adjacent each end portion of the conveyor, a horizontal supporting member extending from the movable parts of said lifting devices through the conveyor, and trucks supporting said lifting devices for longitudinal movement with the conveyor on tracks located outside the tracks for said cars.

3. In an apparatus for loading cars the combination with a longitudinally arranged conveyor, of a pair of lifting jacks arranged adjacent each end of the conveyor, wheeled trucks supporting said jacks, tracks upon which said trucks run, said tracks being located outside of the car tracks, and horizontal bars connecting the movable members of the pairs of lifting jacks, said bars passing through a portion of the conveyor, whereby the jacks and their trucks support the conveyor for movements along the tracks.

4. In an apparatus for loading cars with granular material, a longitudinal conveyor comprising a channel iron frame, bars extending transversely through the flanges of said frame, adjacent the ends of said conveyor, lifting jacks located beneath the outer extremities of said bars, wheeled trucks supporting said jacks, pipes serving as tracks for the wheels of said trucks, said pipes located outside of the car tracks, and means for independently operating the lifting elements of said jacks.

5. In an apparatus for loading cars, the combination with a longitudinal conveyor and means thereon for loading cars arranged below said conveyor, of a pair of lifting jacks arranged adjacent each end of the conveyor, a horizontal supporting member extending through a portion of the conveyor between each pair of jacks, sleeves connected with the movable portion of each jack and slidable on said member, and means for securing said sleeves in adjusted positions on said members.

In testimony whereof I have hereunto set my hand.

JAMES A. PAISLEY.