

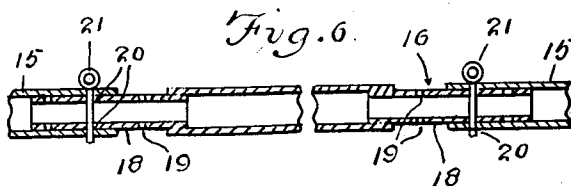
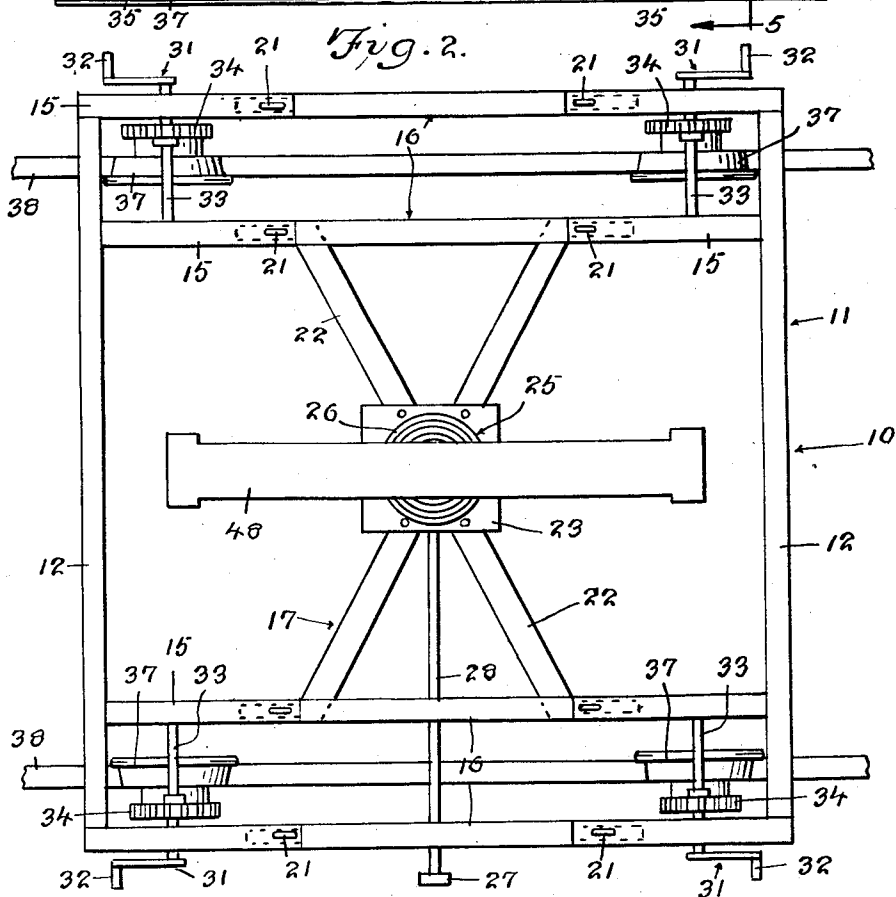
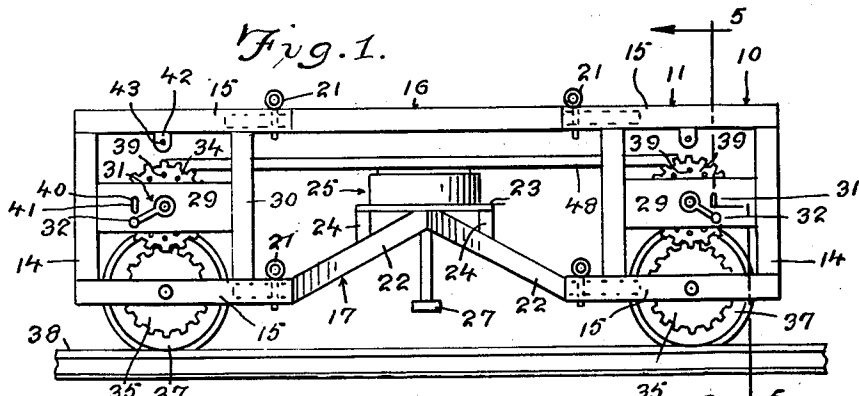
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L. ROMANS
PORTABLE PUSH CAR

2,929,337

Filed Sept. 3, 1958

2 Sheets-Sheet 1



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March 22, 1960

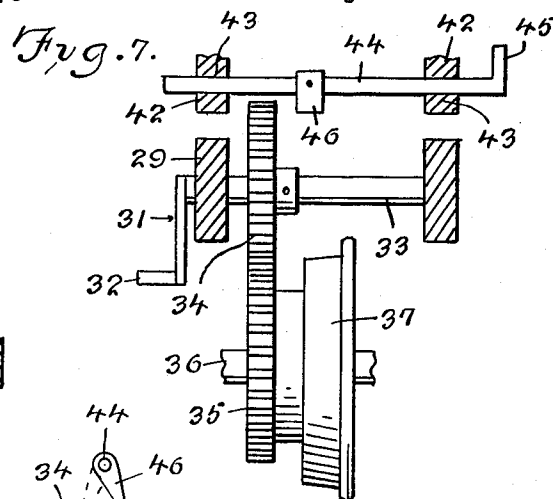
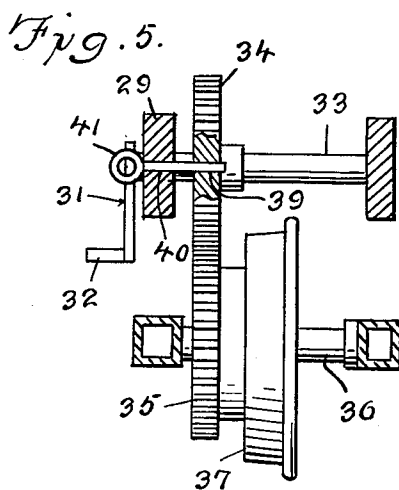
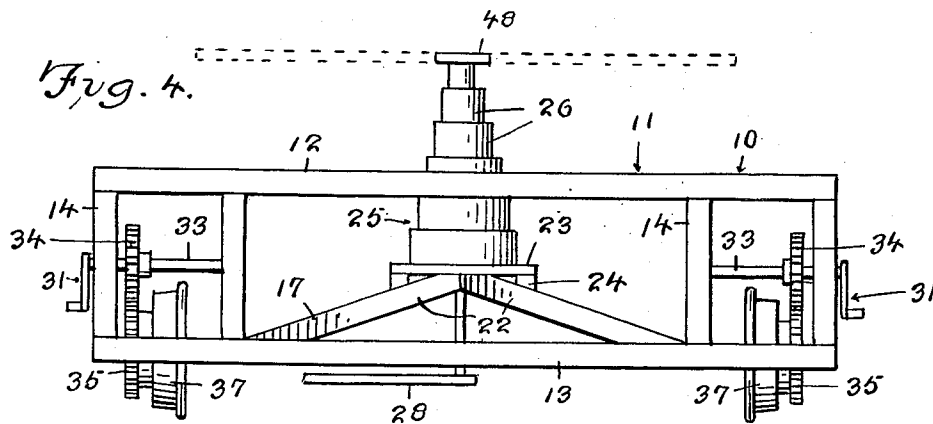
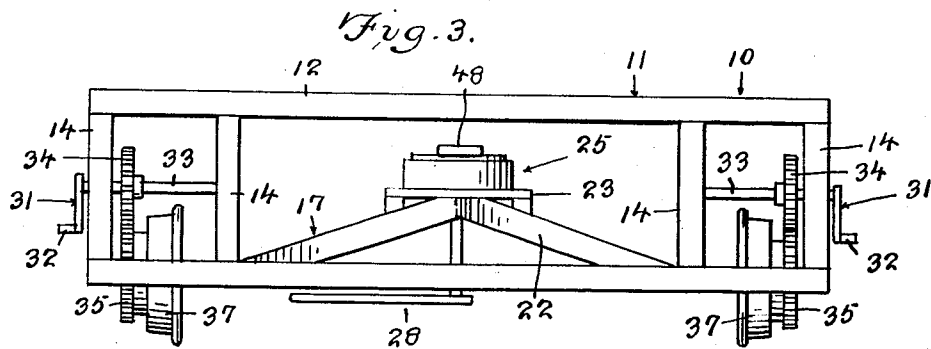
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2,929,337

PORTABLE PUSH CAR

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2 Sheets-Sheet 2



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2,929,337

PORTABLE PUSH CAR

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2 Claims. (Cl. 105—89)

This invention relates to a vehicle, and more particularly to a push car.

The object of the invention is to provide a push car which is adapted to be used for any desired purpose, as for example, in connection with work being performed in or around mines.

Another object of the invention is to provide a push car which is in the nature of a wheeled vehicle that is adapted to be manually propelled and wherein the push car of the present invention includes a jack that can be actuated to support or raise or hold a load, and wherein there is provided a braking mechanism which can be used for effectively holding the vehicle or push car immobile in a desired position.

A further object of the invention is to provide a push car which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same.

Figure 1 is a side elevational view of the push car of the present invention.

Figure 2 is a plan view of the push car of the present invention.

Figure 3 is an end elevational view of the present invention.

Figure 4 is a view similar to Figure 3 but showing the hydraulic jack actuated.

Figure 5 is a sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a view illustrating certain constructional details of the present invention.

Figure 7 is a fragmentary sectional view illustrating a modification.

Figure 8 is a fragmentary elevational view illustrating certain details of the assembly of Figure 7.

Referring in detail to the drawings, the numeral 10 indicates the vehicle or push car of the present invention which is shown to comprise a frame that is indicated generally by the numeral 11, and the frame 11 comprises horizontally disposed spaced parallel front and rear end members 12 and 13. There is further provided vertically disposed braces 14 which extend between the end members 12 and 13 and which are secured thereto in any suitable manner, as for example by welding.

Extending from the end members 12 and 13 and secured thereto or formed integral therewith are horizontally disposed arms 15, and there is also provided upper and lower support members which are indicated generally by the numerals 16 and 17. These support members include end portions 18 which are telescopically or adjustably connected to the arms 15, as for example as shown in Figure 6. The end portions 18 are provided with openings 19 which are adapted to register with openings 20 in arms 15, and removable pins 21 are adapted to be inserted through these registering openings in order

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to maintain the parts immobile in their proper adjusted positions.

The lower support members 17 are provided with cross pieces 22 which serve to support a horizontally disposed base 23 through the medium of posts 24, Figure 1. Supported by the base 23 is a hydraulic jack mechanism that is indicated generally by the numeral 25, and the jack mechanism 25 includes a plurality of extensible sections 26. A foot pedal 27 is connected to the jack 25 through the medium linkage 28, and the foot pedal 27 is adapted to be actuated as for example when the jack 25 is to be moved from the position shown in Figure 3 to the position shown in Figure 4. The horizontally disposed movable platform 48 is connected to the jack 25, so that as the jack 25 is actuated, the platform 48 can be raised or lowered, and the platform 48 can be used for supporting any desired type of load or member.

There is further provided a plurality of hand cranks which are each indicated by the numeral 31, and the hand cranks 31 each include a handle portion 32 and a shaft portion 33, the shaft portion 33 extending through an adjacent horizontally disposed bar 29, Figure 5. Braces 30 are provided for helping to stabilize the bars 29. A first gear 34 is mounted on each shaft portion 33, and each first gear 34 meshes with a second gear 35 which is mounted on an axle 36. A wheel 37 is mounted on each axle 36, and the wheels 37 are adapted to travel along tracks 38 such as tracks arranged in or adjacent to a mine.

A locking means is provided for maintaining the wheels 37 stationary when desired, and this locking means comprises a plurality of apertures or openings 39 which are arranged in the first gear 34. The bar 29 is provided with an opening 40 which is adapted to register with one of the openings 39 in the gear 34, and a removable locking pin 41 is adapted to be inserted through the opening 40 and through one of the openings 39 as for example as shown in Figure 5. However, when the vehicle is to be moved, the pins 41 are pulled out of the openings 40 and 39.

Referring now to Figures 7 and 8 of the drawings, there is illustrated a modified locking mechanism which can be used, and in Figures 7 and 8 the numeral 44 indicates a rod which is adapted to be extended through openings 43 in gears 42 that may depend from the uppermost arms 15. The rod 44 has a handle portion 45 on its outer end, and a locking dog 46 is carried by the rod 44, and the dog 46 can be moved into and out of engagement with the teeth of the gear 34, as for example, as shown in Figure 8 so as to selectively lock the vehicle against further movement. By disengaging the dog 46 from the teeth of gear 34 the vehicle can be moved as for example, when the cranks 31 are manually rotated.

From the foregoing, it is apparent that there has been provided a vehicle which is in the nature of push car, and wherein the vehicle or push car can be used for any desired purpose, as for example, it can be used in connection with work around mines or the like. When the device of the present invention is to be used, the pins 41 are adapted to be removed from the openings 40 and 39 and then the hand cranks 31 are adapted to be manually rotated. As the cranks 31 are rotated, the shaft 33 will be turned, and this will cause rotation of the gears 34. Since the gears 34 mesh with the gears 35, it will be seen that this rotation of the shaft 33 will cause rotation of the gears 35 and also rotation of the axle 36, the axle 36 being suitably connected to the gears 35. Since the wheels 37 are secured to the axle 36, it will be seen that this manual movement of the cranks 31 will cause corresponding rotation of the wheels 37 so that the vehicle 10 can be propelled along the tracks 38 as desired. After the vehicle has been moved to the desired location, one

or more of the pins 41 can be inserted through the registering openings 40 and 39 so that the gears 34 will be locked against further rotation whereby the wheels 37 will remain immobile in the desired position on the tracks 38 so that accidental movement of the vehicle 10 will be prevented.

If desired, the alternative locking mechanism shown in Figures 7 and 8 may be utilized. Thus, the rod 44 may be extended through the openings 43 and the gears 42, and with the dog 46 mounted on the rod 44, it will be seen that the handle 45 can be used to move the rod 44 so that the dog 46 can be moved into and out of engagement with the teeth on the gears 34. When the dog 46 engages the teeth of the gears 34, no rotation of the gear 34 or wheels will occur, but by shifting the dog 46 out of engagement with the teeth of the gear 34, the wheels and gears will be free to rotate, as for example, when the cranks 31 are manually rotated or actuated.

Furthermore, the effective length of the frame work 11 can be varied as desired. Thus, by removing the pins 21 from the openings such as the openings 20 and 19, the arms 15 can be moved in or out on the end portions 18 of the support members and then after these parts have been moved to their desired position, the pins 21 can be inserted through the proper openings 20 and 19 so as to maintain the frame at the desired length.

The platform 48 can be used for supporting any desired type of load or for raising such a load, as for example, the platform 48 can be used for holding or supporting timber, headers or the like. The platform 48 is adapted to be raised vertically by means of a hydraulic jack 25 which consists of a plurality of telescopic sections 26. The foot pedal 27 can be actuated to move the linkage 28 when the jack 26 is to be actuated.

The parts can be made of any suitable material and in different shapes or sizes.

The previously described locking or latching mechanism can be used for preventing the car from moving backwards on steep grades or inclines. Also, the locking mechanism can be used when the vehicle is being loaded or unloaded so that the vehicle can be safely held stationary. The machine can be used for various purposes, as for example, it can be used for setting headers in coal mines. Due to the provision of the extensible arrangement shown in Figure 6, the car can be converted to different lengths.

The portable push car of the present invention is especially suitable for use in coal mines where track is available and different types of material can be conveniently carried by the car and the car can be readily disassembled when it is not being used, or else the car can be quickly and easily assembled on or off of the track with a minimum of effort and in a short period of time. The cranks can be used when the car is carrying a heavy load as for example, the cranks can be used when it is not convenient for a man to push the loaded car. The car can also be used in laying rails or tracks or for any other desired purpose.

The above description of the invention is for illustrative purposes only and it is understood that modifications may be made in the construction within the scope and spirit of the following claims.

I claim:

1. In a vehicle, a frame including spaced parallel horizontally disposed front and rear end members, a first set of vertically disposed braces secured to said end members at the opposite ends thereof, horizontally disposed arms extending from the ends of said vertically disposed braces between said end members, a second set of vertically disposed braces connected to said arms in spaced parallel relation to said first set of vertically disposed braces, upper and lower support members having end portions adjustably connected to said arms, said lower support members including cross pieces, a base secured to the inner portions of said cross pieces, a hydraulic jack supported by said base, a movable platform connected to said jack, horizontally disposed bars mounted at their opposite ends between said first and second vertically disposed braces in parallel relation to said arms and adjacent the ends of the frame, a manually operable crank having a shaft portion extending through each bar, axles arranged below said shaft portions and journaled in said arms, wheels mounted on said axles, a first gear on said shaft portion, and a second gear connected to each axle and meshing with a corresponding first gear.

2. In a vehicle, a frame including spaced parallel horizontally disposed front and rear end members, a first set of vertically disposed braces secured to said end members at the opposite ends thereof, horizontally disposed arms extending from the ends of said vertically disposed braces between said end members, a second set of vertically disposed braces connected to said arms in spaced parallel relation to said first set of vertically disposed braces, upper and lower support members having end portions adjustably connected to said arms, said lower support members including cross pieces, a base secured to the inner portions of said cross pieces, a hydraulic jack supported by said base, a movable platform connected to said jack, horizontally disposed bars mounted at their opposite ends between said first and second vertically disposed braces in parallel relation to said arms and adjacent the ends of the frame, a manually operable crank having a shaft portion extending through each bar, axles arranged below said shaft portions and journaled in said arms, wheels mounted on said axles, a first gear on said shaft portion, and a second gear connected to each axle and meshing with a corresponding first gear, there being a plurality of openings in each first gear, there being an opening in each bar, and a removable locking pin adapted to be extended through said last named openings.

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