

Oct. 27, 1953

C. E. GIOVANNONI

2,656,894

HANDLE GUIDED CARRIER AND POWERED WHEEL THEREFOR

Filed Jan. 27, 1950

2 Sheets-Sheet 1

FIG. 1.

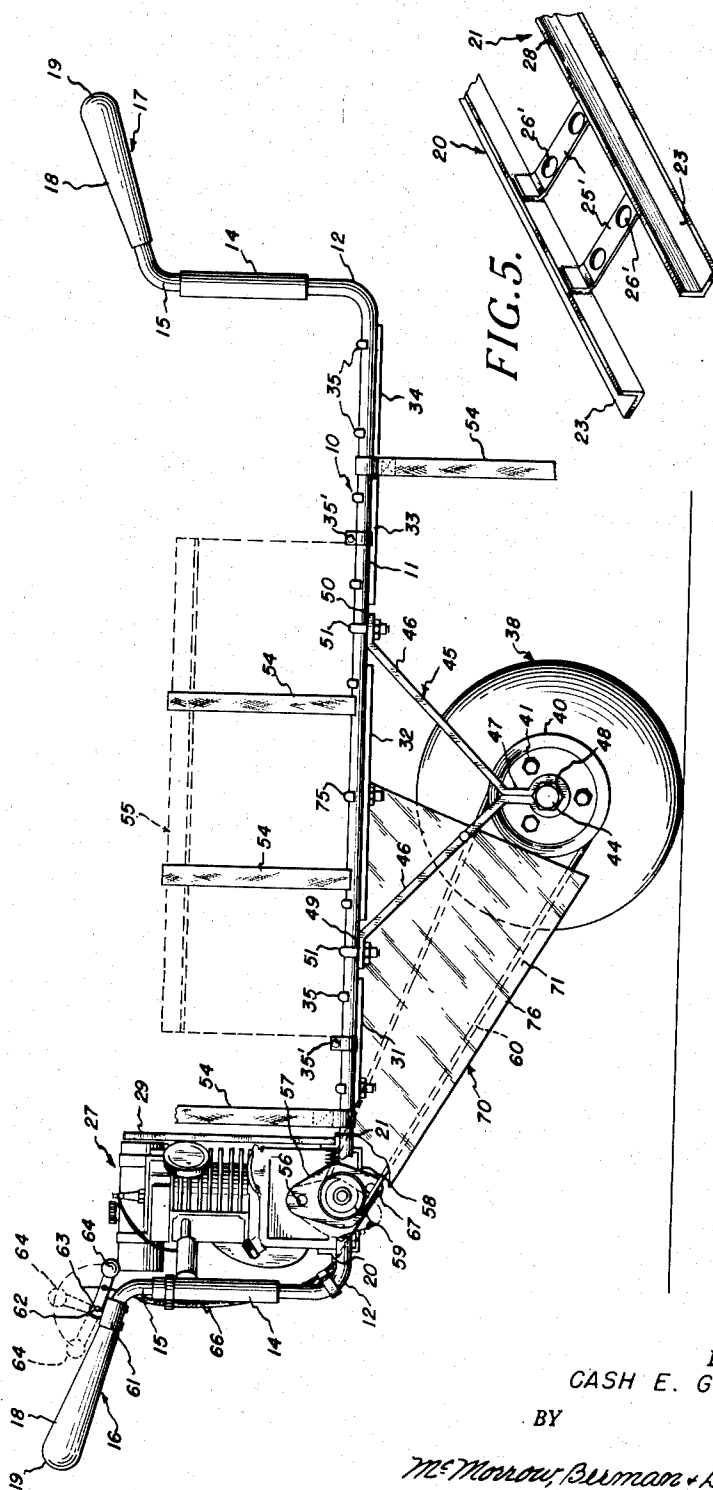


FIG. 5.

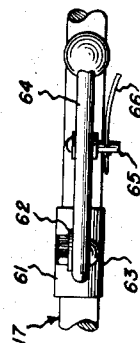


FIG. 4.

INVENTOR.
CASH E. GIOVANNONI

BY

Mc Morrow, Burman + Davidson
ATTORNEYS

Oct. 27, 1953

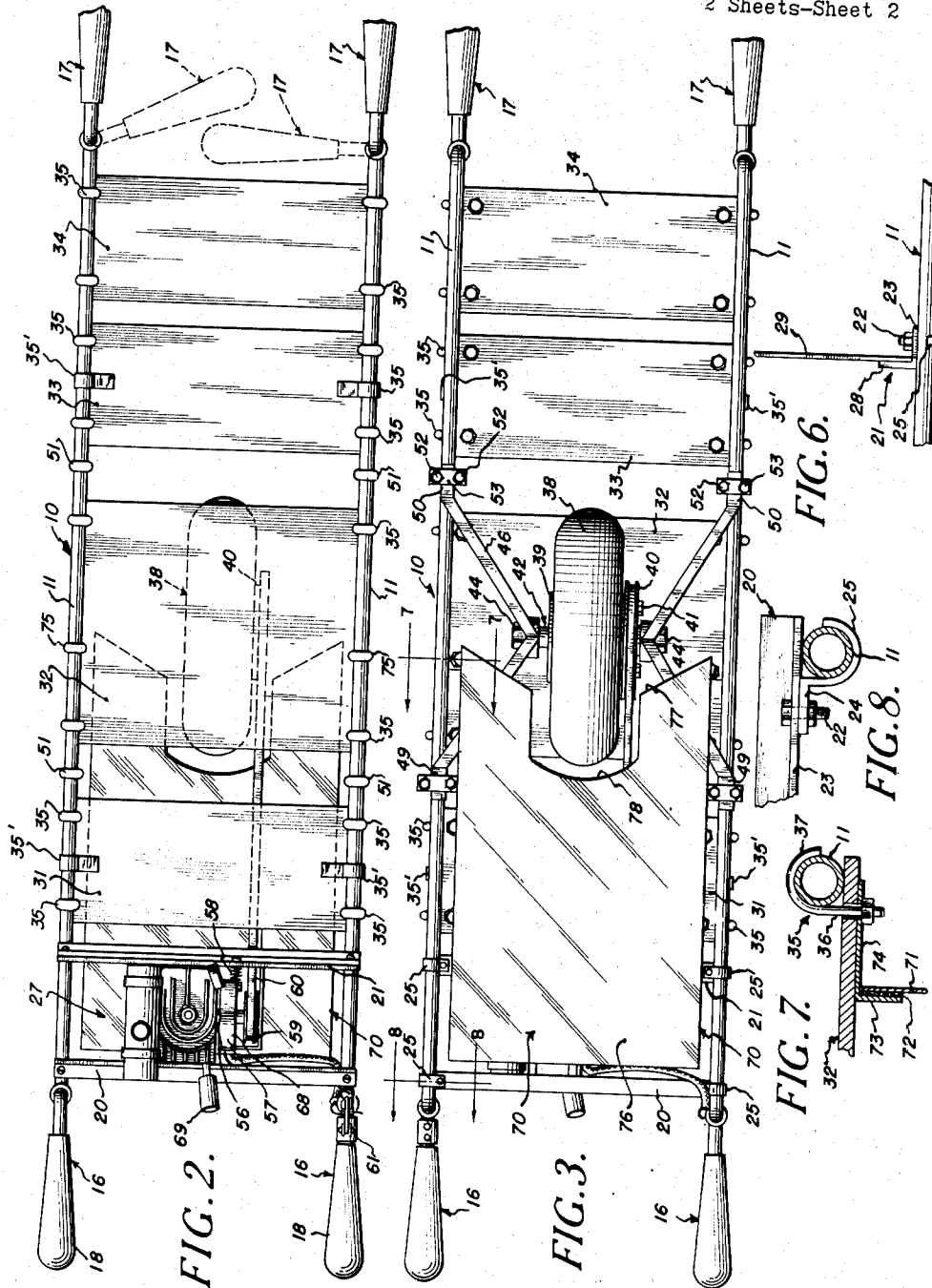
C. E. GIOVANNONI

2,656,894

HANDLE GUIDED CARRIER AND POWERED WHEEL THEREFOR

Filed Jan. 27, 1950

2 Sheets-Sheet 2



INVENTOR.
CASH E. GIOVANNONI

BY

McMURROW, Bertram & Davidson
ATTORNEYS

UNITED STATES PATENT OFFICE

2,656,894

HANDLE GUIDED CARRIER AND POWERED
WHEEL THEREFOR

Cash E. Giovannoni, Boulder City, Nev.

Application January 27, 1950, Serial No. 140,888

2 Claims. (Cl. 180-19)

1

This invention relates to an improved motorized mono-wheel game and pack carrier of the type disclosed in my copending application Serial No. 114,860, for use by hunters and others, the primary object of the present invention being to provide a practical and serviceable device of this character which enables easier and more efficient carrying of relatively heavy loads of game, hunters' packs, and the like, over rough and hilly terrain, as well as over level ground, with a minimum of effort and fatigue.

Another important object of the invention is to provide a carrier of the character indicated above which is provided front and rear with handles for pushing, pulling and maneuvering the carrier over the ground, with the single, centered, ground engaging wheel positioned substantially midway between the ends of the carrier, and with the motor mounted at the front of the carrier in such a way that the carrier is weighted to have a tendency to tilt forwardly, thereby facilitating working the carrier up a hill by an attendant grasping the front handles, and further, facilitating the task of a second attendant grasping the rear handles.

A further important object of the invention is the provision of a carrier of the above-indicated character wherein the controls for the motor are located on the front handles to be operated by the attendant grasping the front handles, thereby affording better control of the carrier in working over rough ground and up hills.

A still further important object of the invention is to provide a carrier of the character indicated above, wherein the motor can be disconnected from the mono-wheel, whereby the carrier can be used as a manually operated carrier when desired.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific embodiment of the invention is set forth in detail.

In the drawings:

Figure 1 is a general left-hand side elevation;

Figure 2 is a top plan view;

Figure 3 is a bottom plan view;

Figure 4 is an enlarged, fragmentary, top plan view of the gear shift lever;

Figure 5 is an enlarged, fragmentary, perspective view of the motor frame;

Figure 6 is a fragmentary, left-hand, side elevational, detail showing the arrangement of the shield behind the motor;

2

Figure 7 is an enlarged, fragmentary, transverse, vertical section taken on the line 7-7 of Figure 3;

Figure 8 is an enlarged, fragmentary, transverse, vertical section taken on the line 8-8 of Figure 3.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated carrier comprises a longitudinally elongated, horizontal carrier frame 10 comprising straight, parallel spaced side members 11, 11 preferably consisting of light weight metal pipes or tubes, having their ends bent up at right angles at 12 and inserted and secured in the lower ends of vertical tubes 14, into whose upper ends are inserted and secured the downturned portions 15 of forwardly and upwardly projecting front handles 16, and rearwardly and upwardly projecting rear handles 17, both sets of handles involving tapered, cylindrical grips 18 terminating in rounded ends 19. The rear handles 17 are pivoted to turn inwardly when desired, as shown in dotted lines in Figure 1.

The side members 11 are spaced and rigidly connected at their front ends by the motor frame comprising a front angle iron 20 and a rear angle iron 21 spaced a short distance behind the front angle iron 20, the horizontal flanges of the angle irons resting upon the tops of the side members and being traversed by bolts 22 traversing the horizontal flanges 23 and portions 24 of pipe clamps 25 hooked under the side members 11 from the outer sides of the side members, as shown in Figure 8. The angle irons 20 and 21 are, as shown in Figure 5, spaced and rigidly connected together by laterally spaced straps or bars 25', 25' formed with holes 26' to receive bolts (not shown) for securing the motor 27 to these bars between the angle irons 20 and 21.

Immediately behind the vertical flange 23 of the rear angle iron 20 is secured the perpendicular shield 29 in the form of a rectangular plate extending across the carrier frame 10 and rising thereabove to a sufficient height to protect the motor 27 from being contacted by loose or incompletely packed material on the carrier frame.

Behind the shield 29 the carrier frame side members 11 are spaced and rigidly connected together by a plurality of boards in the form of relatively rigid, transversely elongated plane and rectangular plates 31, 32, 33 and 34, respectively. These boards are spaced from each other along the carrier frame 10, and the rearmost board

34 has its rear edge at the rear ends of the side members 11.

As shown in Figure 1, each of the boards underlies the carrier frame side members 11 and is fixed thereto by means of two J-bolts 35 at each end having shanks 36 traversing the boards at the inward sides of the side members 11 with their hooks 37 engaging over the side members. In addition, the front plate 31, and the next to rear plate 33, has a pipe clamp 35' at each end between the J-clamps 35 welded thereto and engaging over the tops of the side members 11.

The plate 32 is substantially greater in longitudinal dimension than the other plates 31, 33 and 34, and covers the middle area of the carrier frame 10.

The preferably pneumatic tired, ground engaging mono-wheel 38 has a hub 39 having a grooved belt pulley 40 bolted at 41 to the left-hand side thereof. The hub 39 includes an axial sleeve 42 which turns on an axle supported in bearing assemblies 44, the sleeve 42 acting to properly space the bearing assemblies and the wheel frames 45 to which they are secured, at the opposite sides of the wheel 38.

Each wheel frame 45 comprises a Y-shape of bar material having upwardly divergent arms 46 which are angulated laterally inwardly to join the standard portion 47 having a ring portion 48 at its lower end securably embracing the related one of the bearing assemblies 44. The arms 46 terminate at their upper ends in front and rear lug portions 49 and 50, respectively, which engage the under sides of the carrier frame side members 11, at points between the front plate 31 and large plate 32 and between the large plate and the rear plate 33, respectively. U-bolts 51 engage over the side members and their depending shanks 52 traverse plates 53 underlying and secured to the lug portions 49 and 50, whereby the wheel frames are assembled to the carrier frame 10 with the axis of the mono-wheel 38 at the center of the carrier frame 10.

Suitable load securing straps 54, distributed at spaced intervals along the carrier frame side members, have one end secured to the side members 11 and are adapted to be buckled or tied across a load 55 in the manner generally indicated in Figure 1.

It will be obvious that the device as thus far described is adapted to be manually moved over the ground by means solely of the front and rear handles without the aid of the motor 27 to relieve the attendant or attendants of all or a major portion of the work of pulling and/or pushing the carrier forwardly.

The motor 27 can be a conventional type of air-cooled gasoline motor mounted in the motor frame on the cross members 25 with its shaft 56 crosswise of the carrier frame 10 and projecting at the left-hand side thereof, as shown in Figure 2. Mounted on the motor shaft 56 and swingable forwardly and rearwardly thereon is a conventional form of gear reduction 57 normally tensioned in a rearward direction by a helical spring 58 stretched between the gear reduction and the rear motor frame angle iron 21. The gear reduction has a grooved pulley 59 on its left-hand side arranged eccentrically with respect to the motor shaft 56 and aligned with the grooved pulley 40 on the mono-wheel 38. A suitable belt 60 is trained over the two pulleys to connect the motor 27 to drive the mono-wheel 38. In the rearwardly retracted position of the gear reduction 57, produced by the spring 58, the belt 60 is

slack and fails to operatively connect the motor 27 with the mono-wheel, in which case the motor 27 is in stand-by relation and the carrier is conditioned for manual operation.

On the left-hand front handle 16 is fixedly circumposed a sleeve 61 having an upwardly projecting lug 62 thereon on which is pivoted at 63 one end of a hand lever 64 having intermediate its ends a connector 65 securing one end of a pull wire or cable 66 whose opposite end is connected at 67 to the lower end of the gear reduction 57 and enters the case 68 thereof to operatively engage therein means (not shown) for effecting engagement and disengagement of two different gear ratios. In the rearward positions of the hand lever 64, shown in full lines in Figure 1, the gear reduction 57 is in retracted or neutral position, in which the slack in the belt 60 results in disconnection of the motor 27 from the mono-wheel 38. In the vertical or intermediate position of the hand lever 64, shown in dotted lines, the gear reduction 57 is in a forward position wherein the belt slack is taken up and the main or higher gear drive is in effect to drive the mono-wheel 38. In the forward dotted position of the hand lever 64, the lower gear drive is engaged to drive the mono-wheel 38, as for working the carrier up a steep hill or through mud. The motor throttle control handle 69 projects forwardly from the motor 27 between the handles 16.

A belt protector or hood 70 comprises a sheet metal form comprising vertical, triangular side walls 71 declining rearwardly with respect to the carrier frame and extending rearwardly from the forward end thereof to a point above the center of the mono-wheel 38, whereby lower rearward portions of the side walls 71 extend on opposite sides of the mono-wheel 38. The upper edges of the side walls 71 are welded, as indicated at 72 in Figure 7, to the inner sides of depending flanges 73 on plates 74 which are placed against the under sides of the carrier frame plates 31 and 32. The forward J-bolts 35 of the front plate 31 and extra J-bolts 75 between the J-bolts 35 of the plate 32 securably traverse the plates 74 to hold the belt protector or hood 70 in place on the carrier frame 10. As indicated in Figure 1, the lower flight of the belt 60 runs close to the bottom 76 of the hood 70 which extends between and is connected to the rearwardly declining lower edges of the hood side walls 71. The bottom 76, as shown in Figure 3, has its forward edge 77 apertured at 78 for clearance with the mono-wheel 38 and the belt pulley 40.

I claim:

1. A mono-wheel carrier comprising a longitudinally elongated horizontal frame having handles on its forward end, a fixed mono-wheel supported to depend from said frame at a point midway the opposite ends of said frame, a motor mounted on the forward end of said frame, means operatively connecting said motor and said mono-wheel, and control means for said operating means mounted on said frame in the region of said handles, said operating means comprising a driven pulley fixed on said mono-wheel, a drive pulley operatively associated with said motor, and a belt trained over and between said pulleys, said operating means further comprising a member pivotally supported on said frame to swing forwardly and rearwardly and carrying said drive pulley, and spring means normally maintaining said member and said drive pulley in a rearwardly swung position

5

wherein said belt is slack and fails to operative-ly connect said pulleys, said control means being pivoted on one of said handles for swinging said member forwardly from retracted position to take up the slack in said belt and operative-ly connect said drive and driven pulleys so as to turn said mono-wheel to move the carrier forwardly over the ground while guided by the front handles.

2. A mono-wheel carrier comprising a longitudinally elongated horizontal frame having handles on its forward end, a fixed mono-wheel supported to depend from said frame at a point midway the opposite ends of said frame, a motor mounted on the forward end of said frame, means operatively connecting said motor and said mono-wheel, and control means for said operating means mounted on said frame in the region of said handles, said operating means comprising a driven pulley fixed on said mono-wheel, a drive pulley operatively associated with said motor, and a belt trained over and between said pulleys, said belt occupying a rearwardly declining position beneath said frame, and a rearwardly declining belt hood secured to the under side of and depending from said frame,

6

said belt hood comprising side walls located beneath and reaching rearwardly along opposite sides of said frame to a vertical plane passing through the wheel and driven pulley, and a bottom extending between the opposite sides of, and coextensive with, the lower edges of said side walls and apertured from its rearward end forwardly to an area just beyond the wheel periphery to provide clearance for said mono-wheel.

CASH E. GIOVANNONI.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
211,373	Bean	Jan. 14, 1879
1,764,767	Wilhelm	June 17, 1930
2,126,357	Todd	Aug. 9, 1938
2,239,122	Stokes	Apr. 22, 1941
2,292,580	Moyer et al.	Aug. 11, 1942
2,450,304	Shiflet	Sept. 28, 1948

FOREIGN PATENTS

Number	Country	Date
4,968	Great Britain	Nov. 13, 1913