July 10, 1962 I. G. MEIKLEJOHN 3,043,602

WHEELED CARRIERS, ESPECIALLY GOLF-BAG CARRIERS

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Fig. 1.

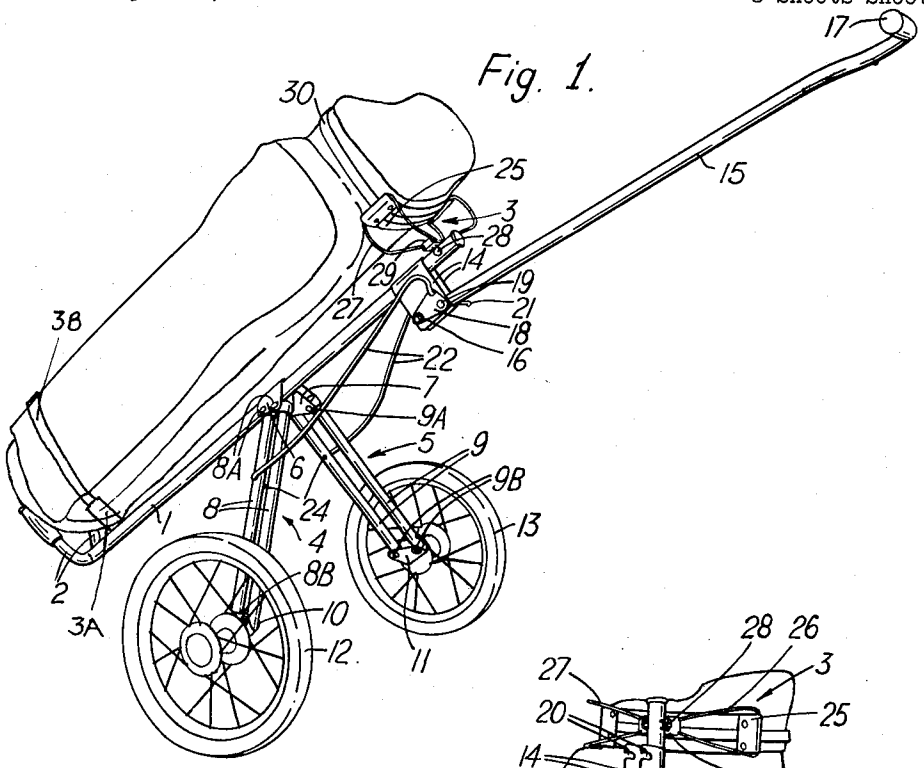
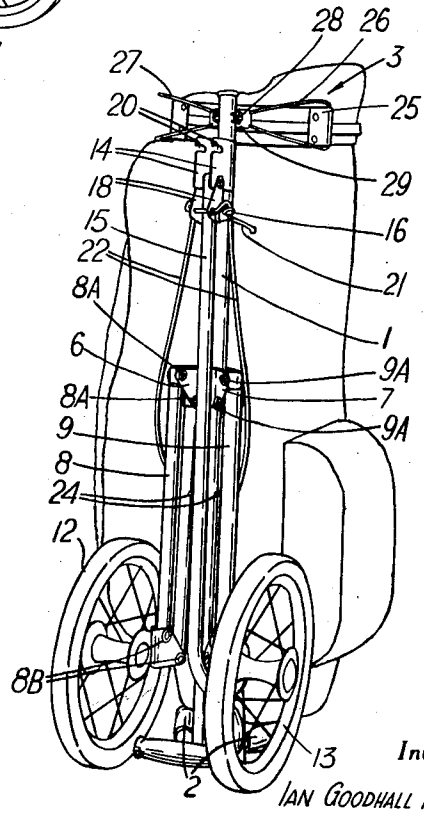


Fig. 4.



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Fig. 2.

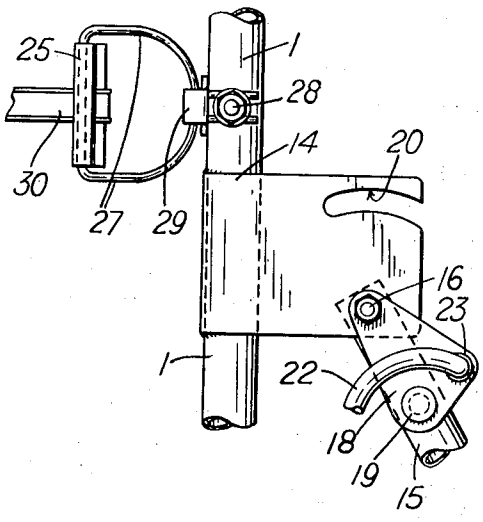
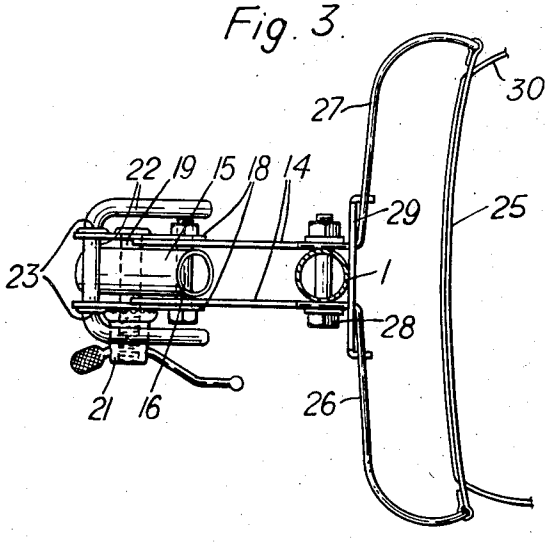


Fig. 3.



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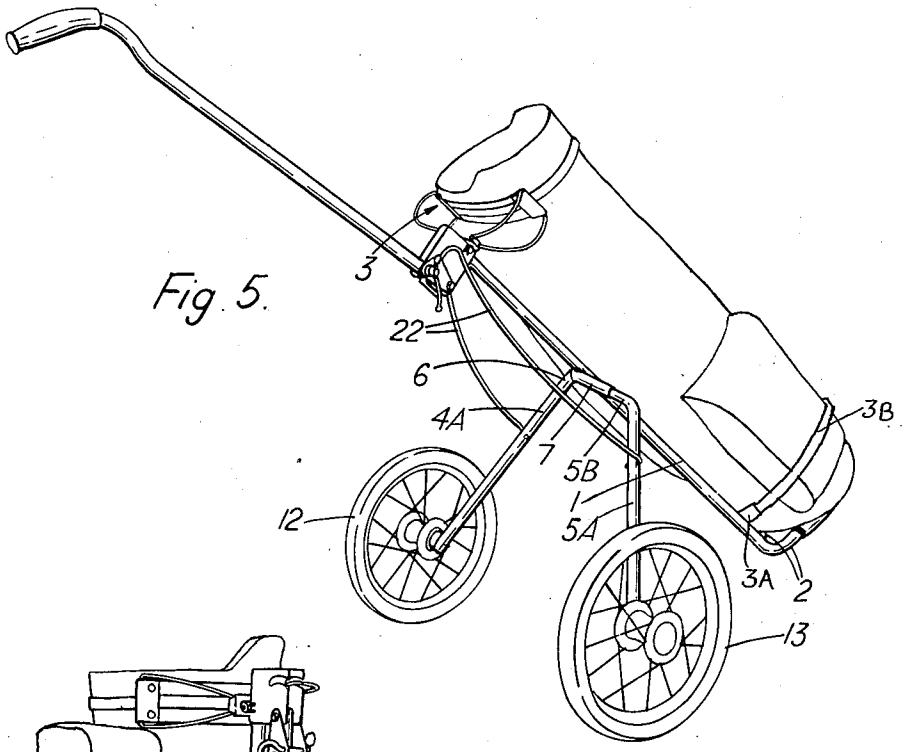


Fig. 5.

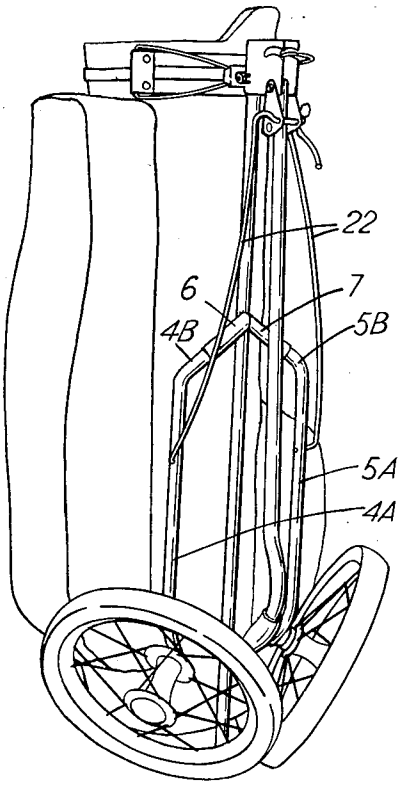


Fig. 6.

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WHEELED CARRIERS, ESPECIALLY GOLF-BAG CARRIERS

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12 Claims. (Cl. 280—38)

This invention relates to wheeled carriers, especially golf-bag carriers, in which a pair of wheeled leg structures are pivotally mounted on a load receiving frame for movement between extended and collapsed positions.

An object of the invention is to provide simple and efficient actuating means for effecting said movement of the leg structures.

A further object of the invention is to provide for resilient support of the load on the wheeled leg structures.

According to the invention I provide a wheeled carrier, especially a golf-bag carrier, comprising a load-receiving frame, a pair of wheeled leg structures pivotally mounted on the frame for movement from a collapsed position adjacent to the frame outwards from the frame and laterally apart from each other to an extended position, lever means on the frame, and resiliently deformable strut means extending between and pivotally connected to the lever means on the one hand and said leg structures on the other hand, said strut means on actuation of the lever means causing movement of said leg structures which is simultaneously outward and lateral and said strut means being resiliently deformed laterally by such movement.

An embodiment of the invention will now be described, but merely by way of example, with reference to the accompanying drawings in which:

FIG. 1 is a perspective view of a carrier in bag-supporting position.

FIG. 2 is a side view of the upper end of the carrier, with the lever means in collapsed position.

FIG. 3 is a top plan view of FIG. 2.

FIG. 4 is a perspective view of the carrier of FIG. 1 with the leg means in collapsed position.

FIGS. 5 and 6 are perspective views corresponding to FIGS. 1 and 4 and showing a modified form of wheel-carrying legs.

Referring to the drawings:

A golf-bag carrier consists of a main frame in the form of a straight tube **1**, a bag-supporting V-frame **2** projecting from the bottom of the tube, a bag-receiving rest **3** at the top of the tube, a bag-receiving rest **3A** at the bottom of the tube and fitted with a bag-securing strap **3B**, and a pair of wheel-carrying leg structures **4** and **5** pivotally mounted in a pair of outwardly divergent brackets **6** and **7** on the tube **1** intermediate the tube ends for movement between a collapsed position closely alongside the tube **1** (FIG. 4) and an expanded position in which they diverge in a plane at an angle to the tube **1** (FIG. 1). The leg structures consist of pairs of parallel tubes **8** and **9** pivotally connected at **8A** and **9A** to the brackets **6** and **7** and at **8B** and **9B** to brackets **10** and **11** carrying stub axles (not shown) on which the wheels **12** and **13** are removably mounted. Thus, the wheels **12** and **13** in collapsed position (FIG. 4) lie one on each side of the frame tube **1** in parallel vertical planes and permit wheeling of the carrier.

A pair of spaced bracket plates **14** are formed by a U-plate projecting laterally from the top of the frame tube **1**, and accommodate between them the lower end of a handle tube **15** which is hinged at said end on a pivot **16** bridging the plates and has a hand grip **17** at its upper end. A pair of segmental lever plates **18** on said

pivot **16** slidably engage the outer faces of the bracket plates **14** and are penetrated by a diametral clamping bolt **19** on the handle tube **15**, the bolt **19** also entering open-ended arcuate slots **20** in the bracket plates **14** and having thereon a wing nut **21** for use in clamping the lever plates **18** and handle tube **15** to the bracket plates.

The lever plates **18** have pivotally connected thereto strut means consisting of a spring-steel round-section wire **22** of substantially inverted U-shape, the base of the U penetrating aligned bearings **23** in the lever plates and being disposed to enter the arcuate slots **20** in the bracket plates **14**. The free ends of the wire **22** are inwardly turned to form pivot pins **24** which lie in bearing apertures in a pair of opposite leg-structure tubes **8** and **9**, intermediate the tube ends, the pins **24** being turnable relatively to bearing sleeves secured within the apertures.

The bag-receiving rest **3** at the top of the frame tube **1** consists of a leather strap **25** secured at its ends to the outer ends of opposed U-frames **26** and **27** of spring-steel wire which frames are clamped at their inner ends to the tube **1** by a bolt **28** extending through the tube, and are supported in position by a flanged guide plate **29** secured to the tube **1** and apertured to receive the ends of the U-frames. The cantilever U-frames **26**, **27** yield resiliently under pressure so that the rest forms a spring sling which accommodates itself to the contour of the bag resting thereon. A buckled strap **30** threaded through end slots in the strap **27** secures the bag of clubs to the strap **25**.

With the wheeled leg structures **8** and **9** in collapsed position (FIG. 4), the handle tube **15** lies alongside the frame tube **1** with the lever plates **18** clear of the bracket plates **14**, and the U-wire **22** unstressed.

To expand the wheeled leg structures **8** and **9**, the handle tube **15** is raised until the U-wire **22** and clamping bolt **19** engage in the arcuate slots **20**, whereupon the wing nut **21** is tightened to clamp the lever plates **18** and the handle tube **15** to the bracket plates **14**. The limbs of the U-wire **22** act as connecting rods to raise the leg structures **8**, **9** to expanded position and are resiliently deflected laterally from each other during the expanding movement. With the leg structures fully expanded (FIG. 1), the U-wire **22** is located at the inner ends of s lots **20**, just past the dead centre position in relation to the handle pivot **16** and pivot pins **24**, and the limbs of the U-wire serve as struts to maintain the wheel structures **8**, **9** against upward collapse under load. Moreover, angular adjustment of the handle tube **15** between plates **14**, to a position giving optimum balance in use of the carrier, is permitted without materially affecting the position of the leg structures **8**, **9**.

The U-wire **22** constitutes a spring mounting for the wheeled leg structures **8** and **9** in use of the carrier.

To collapse the leg structures **8**, **9**, the wing nut **21** is loosened and the handle tube **15** is pivoted downwards. The limbs of the U-wire **22** act as connecting rods to lower the leg structures to collapsed position, and during the lowering movement are urged inwards towards each other to their initial undeformed position.

In the modification shown in FIGS. 5 and 6, the wheel-carrying leg structures **4A** and **5A** consist of single tubes with cranked ends **4B** and **5B** pivoted in a pair of downwardly and outwardly divergent sockets **6** and **7** on the tube intermediate the ends of the tube, for gyratory movement between collapsed and expanded positions. In this modification the wheels **12** and **13** are removably mounted on stub axles carried by the tubes **4A** and **5A**, and are only parallel to each other in the expanded position, in the closed position being inclined towards each other and to the frame **1**. Also the limbs of the U-wire **22** are not only deflected laterally during the expanding movement but also undergo slight torsional displace-

ment as their pivotal axes on the tubes 4A and 5A are out of parallel with the pivotal axes of the tubes themselves. Also, the rest 3 is secured to the base of the U-plate forming the bracket plates 14, the top of the tube 1 terminating within the U-plate.

By virtue of the invention, the actuating mechanism for expanding and collapsing the wheeled leg structures is much simplified, there being no need for elaborate joints, and the cost of manufacture is therefore considerably reduced.

I claim:

1. A wheeled carrier, especially a golf-bag carrier, comprising a load-receiving frame, a pair of wheeled leg structures pivotally mounted on the frame for movement from a collapsed position close to the frame outwards from the frame and laterally apart from each other to an extended position, a handle pivotally mounted on the frame for movement between an extended carrier-manipulating position and a collapsed position close to the frame, a first pair of parallel clamping plates projecting from the frame, a second pair of parallel clamping plates mounted co-axially with the handle on a common pivot on said first pair of plates, a manually operable clamping bolt on the handle spaced from said common pivot and penetrating said second pair of plates, a pair of aligned arcuate slots in said first pair of plates to receive the bolt shank on pivotal movement of the handle to extended position in which position said second pair of plates lies closely alongside the exterior of and the handle lies between said first pair of plates so that tightening of the bolt causes frictional interengagement of the pairs of plates, and a substantially inverted-U-shaped strut of spring wire with the base of the U pivotally mounted in said second pair of plates so as to bridge said plates and enter said slots ahead of the bolt shank and with the ends of the U limbs pivotally connected to the respective leg structures, said strut on pivotal movement of the handle to extended position causing movement of said leg structures which is simultaneously outward and lateral and said strut having its limbs resiliently splayed laterally by such movement.

2. A wheeled carrier according to claim 1, in which the arcuate aligned slots are adapted to permit movement of the handle to an extended position in which the strut is located past the dead-centre position in relation to said common pivot.

3. A wheeled carrier, especially a golf-bag carrier, comprising a load-receiving frame, a pair of wheeled leg structures pivotally mounted on the frame for movement from a collapsed position adjacent to the frame simultaneously outwards from the frame and laterally apart from each other to an extended position, a lever pivoted on the frame, inverted resilient U-shaped strut means extending between the lever on the one hand and the leg structures on the other hand, pivots connecting the strut means to the lever at a position remote from the leg structures and to the leg structures at the ends of the U-shaped strut means and permitting the outward component of movement of the leg structures, and the resiliency in the strut means adapted to cause movement of the leg structures to collapsed position on actuation of the lever.

4. A wheeled carrier according to claim 3 having strut means constituted by spring limbs which are tensioned apart by movement of the lever means operating to extend the leg structures apart, and the said tensioned limbs act positively to return the leg structures to the closed position on reversal of movement of the lever means.

5. A wheeled carrier according to claim 3, wherein the leg structures consist of pairs of members pivotally connected at their ends to brackets on the frame and wheels to form with the brackets supporting parallelograms for the wheels which are in parallel planes in both the extended and collapsed positions.

6. A wheeled carrier according to claim 3, wherein the leg structures consist of a pair of members with cranked inner ends pivotally mounted in a pair of downwardly and outwardly divergent sockets on the frame.

7. A wheeled carrier according to claim 3, wherein the base of the U is pivotally connected to the lever.

8. A wheeled carrier according to claim 3, in which the inverted U-shaped strut means includes limbs resiliently bendable apart from each other and also torsionally resilient, the base of the U being pivotally connected to the lever and the extremities of the limbs being pivotally connected to the leg structures.

9. A wheeled carrier, especially a golf-bag carrier, comprising a load-receiving frame, a pair of wheeled leg structures pivotally mounted on the frame for movement from a collapsed position adjacent to the frame outwards from the frame and laterally apart from each other to an extended position, lever means on the frame, resilient strut means extending between and pivotally connected to the lever means on the one hand and said leg structures on the other hand, said resilient strut means being adapted to resist said lateral outward movement, said strut means on actuation of the lever means causing simultaneous outward and lateral movement of said leg structures, the resiliency in said strut means serving to restore said strut means to their relative inward position on reversal of the movement of the said lever means, said strut means constituted by an inverted U-shaped member tensioned normally to urge the limbs of the U towards one another, and said strut means being pivotally connected at the base of the U to the said lever means in inverted position and the extremities of the limbs pivotally connected respectively with the leg structures.

10. A wheeled carrier, especially a golf-bag carrier, comprising a load-receiving frame, a pair of wheeled leg structures pivotally mounted on the frame for movement from a collapsed position adjacent to the frame outwards from the frame and laterally apart from each other to an extended position, lever means on the frame, resilient strut means extending between and pivotally connected to the lever means on the one hand and said leg structures on the other hand, said resilient strut means being adapted to resist said lateral outward movement, said strut means on actuation of the lever means causing simultaneous outward and lateral movement of said leg structures, the resiliency in said strut means serving to restore said strut means to their relative inward position on reversal of the movement of the said lever means, said strut means constituted by an inverted U-shaped member, the said strut means being pivotally connected at the base of the U to the said lever means and the limbs of the U extending downwardly and pivotally connected to the respective leg members by inturned ends at the extremities of the limbs entering holes in the leg members.

11. A wheeled carrier, especially a golf-bag carrier, comprising a load-receiving frame, a pair of wheeled leg structures pivotally mounted on the frame for movement from a collapsed position close to the frame outwards from the frame and laterally apart from each other to an extended position, a handle pivotally mounted on the frame for movement between an extended carrier-manipulating position and a collapsed position close to the frame, clamping means for releasably securing the handle in extended position, and resiliently deformable strut means extending between and pivotally connected to the handle on the one hand and said leg structures on the other hand, said strut means on movement of the handle to extended position causing movement of said leg structures which is simultaneously outward and lateral and said strut means being resiliently deformed laterally by such movement, said clamping means comprises a first pair of parallel plates projecting from the frame, a second pair of parallel plates mounted on the handle and adapted to lie closely alongside said first pair of plates on movement of the handle to extended position, a bolt bridging one of said pairs of plates and operable to cause frictional interengagement of the pairs of plates, and a

pair of aligned arcuate slots in the other of said pairs of plates to receive the bolt shank on movement of the handle to extended position.

12. A wheeled carrier, especially a golf-bag carrier, comprising a load-receiving frame, a pair of wheeled leg structures pivotally mounted on the frame for movement from a collapsed position close to the frame outwards from the frame and laterally apart from each other to an extended position, a handle pivotally mounted on the frame for movement between an extended carrier-manipulating position and a collapsed position close to the frame, clamping means for releasably securing the handle in extended position, and resiliently deformable strut means extending between and pivotally connected to the handle on the one hand and said leg structures on the other hand, said strut means on movement of the handle to extended position causing movement of said leg structures which is simultaneously outward and lateral and said strut means being resiliently deformed laterally by such movement, said arcuate aligned slots being adapted to permit movement of the handle to an extended position in which the strut means are located past the dead-centre position in relation to the handle's pivotal mounting.

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