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STORAGE AND CARRYING APPARATUS

Filed Aug. 25, 1969

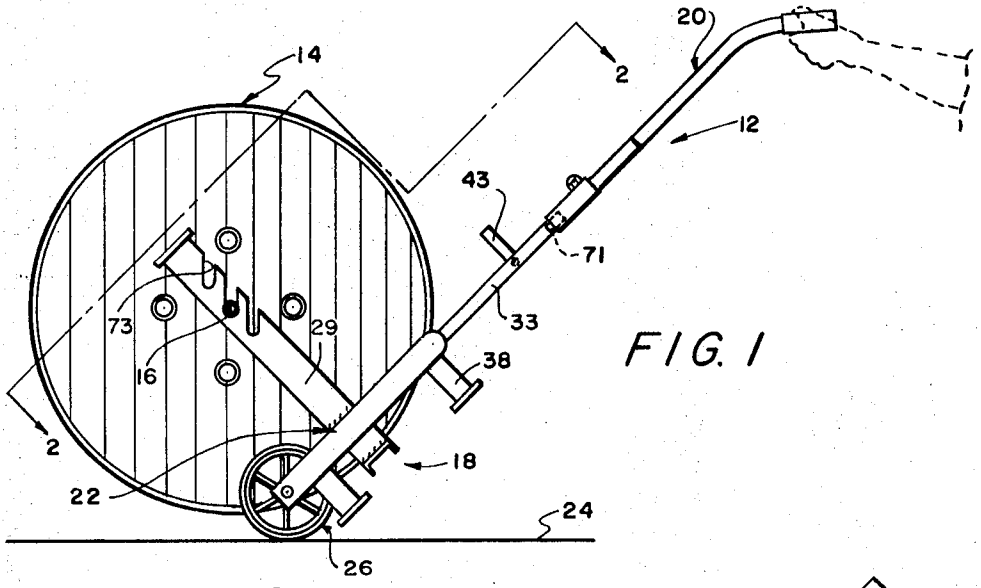


FIG. 1

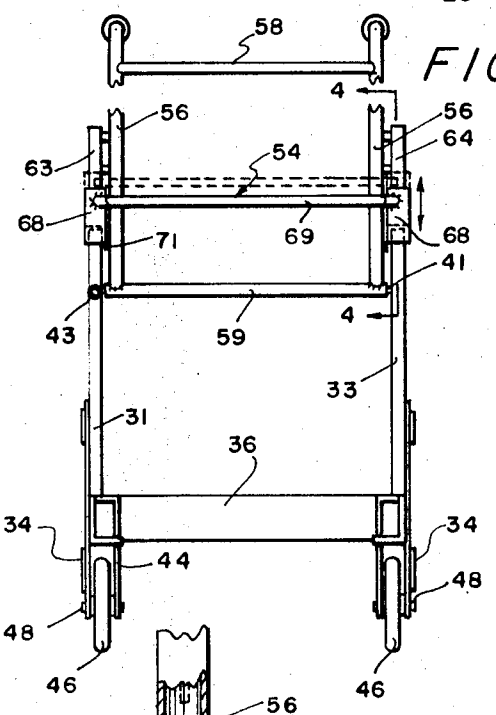


FIG. 2

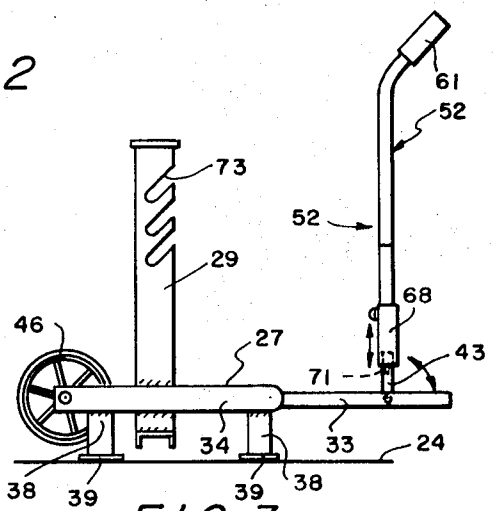


FIG. 3

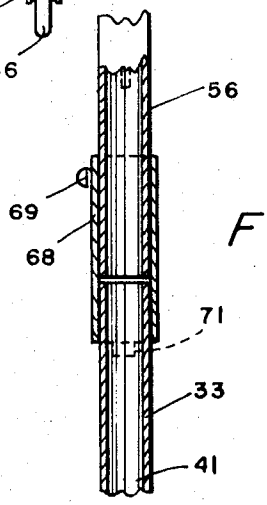


FIG. 4

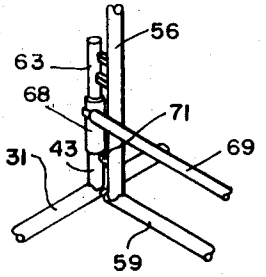


FIG. 5

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STORAGE AND CARRYING APPARATUS

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U.S. Cl. 280—47.24 4 Claims

ABSTRACT OF THE DISCLOSURE

This invention is a storage and carrying apparatus operable to convey items such as a cable or hose reel and readily converted from a storage condition to the usage condition through lift and storage means. More particularly, this invention is a support and conveyance means operable to be moved through lift and storage means including a lift handle assembly releasably connected to a connector assembly whereupon the handle assembly is readily movable from a horizontal lift condition to an upright storage condition.

Numerous types of hand cart or truck conveyance structures are known to the prior art but are not readily adaptable to lift very heavy, bulky objects easily nor having the support structure easily placed in a storage condition when not in use. Additionally, the prior art hand truck apparatus is generally bulky in size, complicated in nature, hard to use, and not operable to present a very compact structure during both usage and storage conditions.

In one preferred embodiment of this invention, a cable storage and carrying apparatus is provided operable to receive objects such as large reels of telephone cable thereon for conveyance and storage. More particularly, the storage and carrying apparatus includes a support and conveyance means adapted to receive the cable reel thereon with movement controlled through a lift and storage means. The support and conveyance means includes a main support means connected to wheel means for moving the same along a given support surface. The support means includes a main body assembly having parallel tube members provided with upright support posts extended substantially 90° thereto to receive the cable reel therebetween. Additionally, the support means includes a spaced pair of support legs on each tube member extended perpendicular to the main body assembly in the opposite direction of the support posts for supporting the same on the support surface in the storage condition. The lift and storage means includes a lift handle assembly mounted through a connector assembly to the parallel support tube members of the support means. More particularly, the lift handle assembly includes a pair of handle members interconnected at upper and lower portions by support bars and pivotally connected to support lugs on the tube members for pivotal movement thereabout. The connector assembly includes a pair of guide tubes connected to outer respective edges of the tube members and having an anchor bar assembly operably connected thereto. The anchor bar assembly includes a pair of spaced support tubes interconnected as by an anchor bar having the support tubes telescopically mounted about the parallel guide tubes. The anchor bar assembly is axially movable about the guide tubes to an upper released position whereupon the lift handle assembly can be pivoted about the support lugs. The anchor bar assembly is movable toward the guide tubes to place the support tubes in telescopic engagement about the adjacent abutting guide tubes and tube members to provide a connection thereto for lifting and conveyance of the storage and carrying apparatus. In the released condition, it is obvious that the lift handle assembly can be pivoted to a position substantially perpendicular to the tube members whereupon the anchor bar assembly can be moved downwardly to place one of the support tubes about a connector tube on one of the tube members to hold the lift handle assembly in an upright position for storage purposes.

One object of this invention is to provide a storage and carrying apparatus overcoming the aforementioned disadvantages of the prior art devices.

One other object of this invention is to provide a storage and carrying apparatus having a support and conveyance means connected to a lift and storage means which is pivotally movable substantially 90° from a storage condition to a conveyance condition.

Still one further object of this invention is to provide a storage and carrying apparatus having a lift and storage means connectable to a support structure whereupon the lift and storage means has a lift handle assembly connected through a connector assembly so as to move from a locked lift condition to an upright storage condition as required.

Still another object of this invention is to provide a storage and carrying apparatus which is economical to manufacture, simple to use, maintenance free, and rigid in construction.

Various other objects, advantages, and features of the invention will become apparent to those skilled in the art from the following discussion, taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a side elevational view of the storage and carrying apparatus of the invention illustrated as having a cable reel mounted thereon;

FIG. 2 is a fragmentary sectional view taken along line 2—2 in FIG. 1 having the cable reel removed therefrom;

FIG. 3 is a side elevational view of the storage and carrying apparatus of this invention illustrated in the storage condition;

FIG. 4 is an enlarged fragmentary sectional view taken along line 4—4 in FIG. 2; and

FIG. 5 is a perspective view illustrating a storage locking feature of the storage and cable apparatus of this invention.

The following is a discussion and description of preferred specific embodiments of the new storage and carrying apparatus of this invention, such being made with reference to the drawings, whereupon the same reference numberals are used to indicate the same or similar parts and/or structure. It is to be understood that such discussion and description is not to unduly limit the scope of the invention.

Referring to the drawings in detail and in particular FIG. 1, the storage and carrying apparatus of this invention, indicated generally at **12**, is shown as having a cable reel **14** mounted thereon through connector shafts **16**. As such cable reels **14** are generally heavy and very bulky but requiring the same to be easily moved during the process of laying cable, it is obvious that the storage and carrying apparatus **12** of this invention provides a new and novel structure to solve a known problem.

The storage and carrying apparatus **12** includes a main support and conveyance means **18** which is controlled and maneuvered through a lift and storage means **20**. More particularly, the support and conveyance means **18** includes a main support means **22** to be moved over a given support surface **24** through the use of wheel means **26**.

The support means **22** includes a main body assembly **27** having one end secured to the wheel means **26** and having a mid portion thereof secured to upright parallel support posts **29**. The main body assembly **27** includes elongated parallel tube members **31** and **33** secured to rigid support plates **34** and having the forward ends there-

of interconnected as by a support channel **36**. The support plates **34** are provided on the undersides with spaced foot structures **38** extended parallel in the opposite direction to the support posts **29**, each having a foot member **39** adapted to contact the support surface **24** when in the storage condition which will be explained. The rearward ends of the support tubes **31** and **33** are provided with inwardly extended support lugs **41** being axially aligned to each other. The support tube **31** is provided with an upright storage connector tube **43** extended perpendicular thereto for reasons to become obvious.

The wheel means **26** includes additional support members **44** secured as by welding to the inner side of the upright support posts **29** cooperating with the support plates **34** and having wheel members **46** mounted therebetween. More particularly, the wheel members **46** are connected by bolt members **48** and bearing members between the respective support plates **34** and the support members **44** so as to be readily rotatable therewithin in a substantially conventional manner. The wheel means **26** is positioned so that when the support means **22** is extended in a horizontal condition, the wheel members **46** are elevated from the support surface **24** for the storage condition. Also, in this condition, it is seen that the support posts **29** extend perpendicular to the support surface **24**.

The lift and storage means **20** includes a main lift handle assembly **52** operably connected through a connector assembly **54** to the support means **22**. More particularly, the lift handle assembly **52** includes a pair of parallel handle members **56** having the upper and lower ends thereof interconnected as by cylindrical support members **58** and **59**, respectively. The upper ends of the handle members **56** are curved in a parallel fashion having handle grip members **61** on the outer ends thereof usable for the maneuvering of the storage and carrying apparatus **12** as will become obvious. The lowermost cylindrical support member **59** is pivotally connected by having its outer open ends mounted about the support lugs **41** connected to the tube members **31** and **33**. It is seen therefore, that the lift handle assembly **52** as described is pivotal about the support means **22** from usage to storage conditions as will be explained.

The connector assembly **54** includes parallel guide tubes **63** and **64** secured to the lift handle assembly **52** and operably connected to an anchor bar assembly **66**. More particularly, the guide tubes **63** and **64** are secured to respective outer surfaces of the handle members **56** as by welding or the like at mid-portions thereof.

The anchor bar assembly **66** includes a pair of support tubes **68** interconnected as by an actuator bar member **69**. In assembly, the support tubes **68** are telescopically mounted over respective ones of the guide tubes **63** and **64** so that the same is movable axially relative thereto. The connector assembly **54** further includes a pair of opposed facing stop lugs **71** secured as by welding to the outer surface of the handle members **56** to receive the support tubes **68** thereagainst to provide a feature limiting downward movement of the actuator bar assembly **66**. It is noted that the connector tube **43**; the tube members **31**, **33**; and the guide tubes **63** have substantially the identical external diameter so as to receive the support tubes **68** of the actuator bar assembly **66** thereabout in a snug manner as will become obvious.

In the use and operation of the storage and carrying apparatus **12** of this invention, it is obvious that the support posts **29** are provided with parallel spaced slots **73** therein to receive the connector shafts **16** of the cable reel **14** whereupon downward movement of the lift and storage means **20** as shown in FIG. 1 results in a lifting of the cable reel **14** for easy conveyance. After moving the cable reel **14** to a desired location, it is obvious that the lift and storage means **20** can be moved clockwise as viewed in FIG. 1 so as to place the support means **22** in a substantially horizontal position whereupon the foot structures **38** are had in supporting engagement with the surface **24** to achieve the storage condition of the support and conveyance means **12** as shown in FIG. 3.

Next, it is obvious that the actuator bar member **69** can be grasped by one utilizing the storage and carrying apparatus **12** of this invention and pulled outwardly towards the lift handle assembly **52**. This causes the support tubes **68** to move axially relative to the tube members **31** and **33** so as to move further up on the parallel guide tubes **63** and **64**. Thereupon, it is obvious that this movement results in a release or disconnection of the abutting adjacent tube members **31** and **33** and guide tubes **63**, **64** whereupon the lift handle assembly **52** can be pivoted counterclockwise to the storage condition as viewed in FIG. 3. On reaching the upright position extended substantially perpendicular to the support surface **24**, it is obvious that the actuator bar member **69** can be moved downwardly upon the parallel guide tubes **63** and **64** whereupon the support tube **68** is telescopically engageable with the upright connector tube **43** as shown in FIG. 5. As clearly shown in FIG. 3, this results in a neat, compact storage condition of the storage and carrying apparatus **12** of this invention whereupon the support tube members **31** and **33** are protected by the lift handle assembly **52** to prevent anyone from tripping thereover and the cable reel **14** and storage and carrying apparatus **12** achieves a compact condition which is necessary and desirable in such operations.

It is seen that the storage and carrying apparatus of this invention provides a device which is readily connectable to reels or other such bulky and heavy items for conveyance similar to a hand truck to any given desired location. Also, the storage and carrying apparatus of this device is provided with a new and novel lift and storage means having a lift handle assembly readily movable from a rigid usage condition to a compact storage condition in a most efficient and effective manner. Also, the lift and storage means of this invention is provided with connector assemblies to anchor the same in its usage or storage condition in a minimum amount of time and effort. Also, it is noted that the storage and carrying apparatus of this invention is economical to manufacture, reliable in operation and use, substantially maintenance free, and provides utmost efficiency of time and space.

While the invention has been described in conjunction with preferred specific embodiments thereof, it will be understood that this description is intended to illustrate and not to limit the scope of the invention, which is defined by the following claims.

We claim:

1. A storage and carrying apparatus adapted to convey a cable reel or the like comprising:

(a) a support and conveyance means having a support means to receive the item to be carried thereon connected to ground or floor engaging means for moving the same along a surface;

(b) a lift and storage means having a lift handle assembly mounted on said support means by a connector assembly;

(c) said lift handle assembly having parallel handle members pivotally connected to said support means;

(d) said connector assembly having spaced parallel guide tube members slidably mounted relative to said handle members and interconnected by a bar member whereupon said connector assembly is movable from one condition in engagement with said support means to provide a rigid connection thereto and movable to a second condition providing for the ready pivotal movement of the lift handle assembly to a compact storage condition;

(e) said support means having a pair of parallel tube members having one end thereof secured to wheel means and the other opposite ends thereof connected to said lift handle assembly;

(f) said connector assembly having said support tube members movable axially relative to said handle members so as to be telescopically engageable with said tube members to provide for a rigid lateral connection thereto; and

(g) said connector assembly also including guide tubes secured to said tube members having said support tube members telescopically mounted thereon whereby said support tube members are movable to a position concurrently about said guide tubes and said tube members providing lateral stability for lifting purposes.

2. A storage and carrying apparatus as described in claim **1**, wherein:

(a) said support means having an upright storage connector tube mounted upon one of said tube members extended substantially perpendicular thereto; and

(b) one of said support tube members operable to be telescopically engaged with said connector tube in the upright storage condition to prevent lateral movement of said lift handle assembly.

3. A storage and carrying apparatus as described in claim **1**, wherein:

(a) said connector assembly having stop lugs secured to said handle members to limit downward movement of said support tube members in the lift conditions by engagement therewith.

4. A storage and carrying apparatus as described in claim **1**, wherein:

(a) said support means having upright support posts extended perpendicular to said tube members to carry such as a cable reel thereon and a plurality of foot structures extended in the opposite direction to engage with the support surface in the storage condition, and

(b) said foot structures each having flat foot members engageable with the support surface in the storage condition and of a size to hold said wheel means of said support and conveyance means out of engagement with the support surface for lateral stability.

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16—112; 214—384; 280—47.37; 287—99