Jan. 30, 1968 C. F. ZEILSTRA ET AL 3,366,397

RUBBISH CARRYING HAND CART

Filed May 9, 1966 2 Sheets-Sheet 1

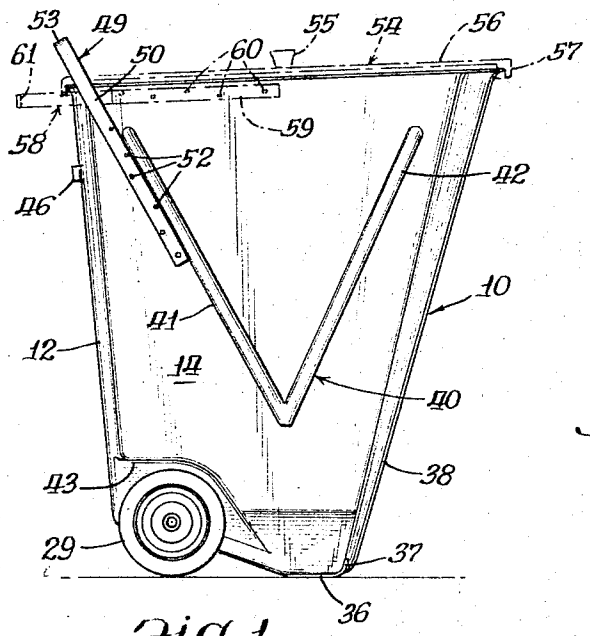


Fig. 1.

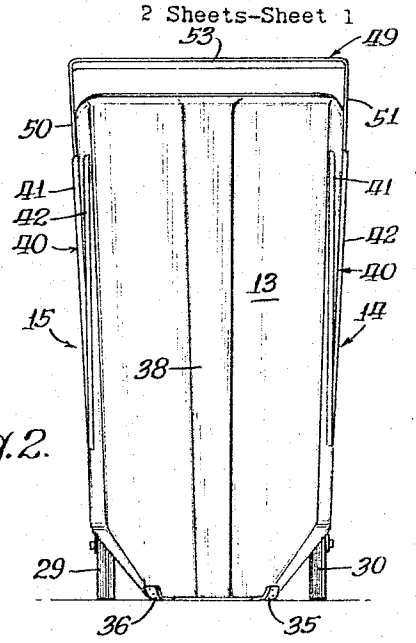


Fig. 2.

Fig. 4.

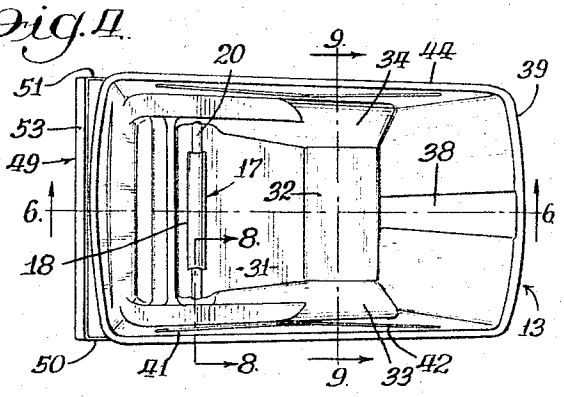
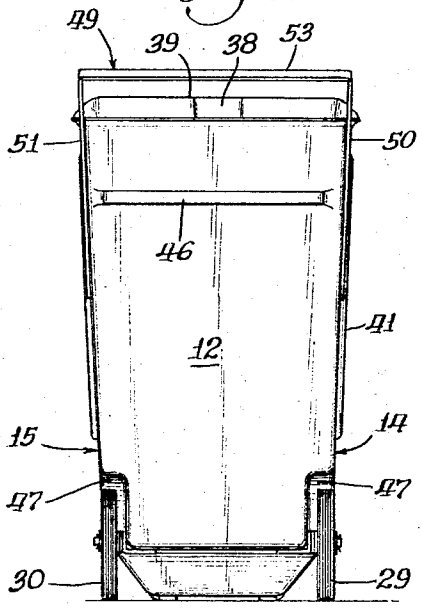


Fig. 3.



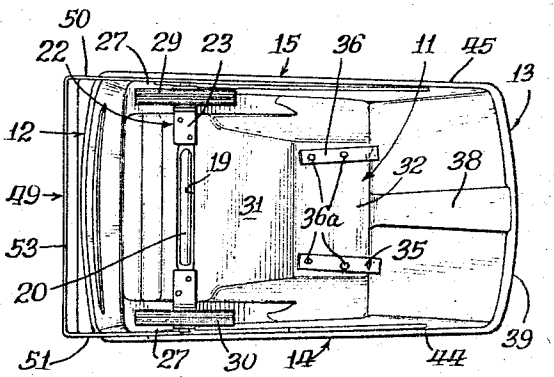


Fig. 5.

Inventors:
Charles F. Zeilstra
Carol R. Zeilstra
By: Snow and Benno
Attys.

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Fig. 6.

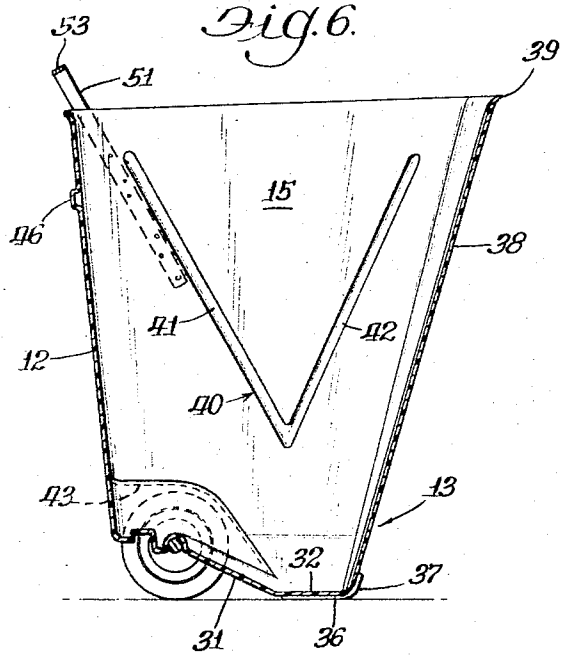
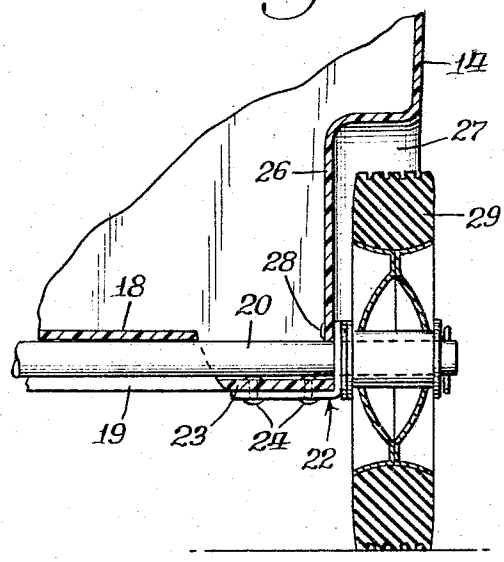


Fig. 8.



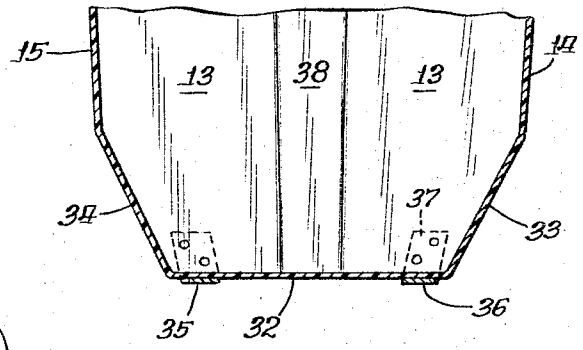
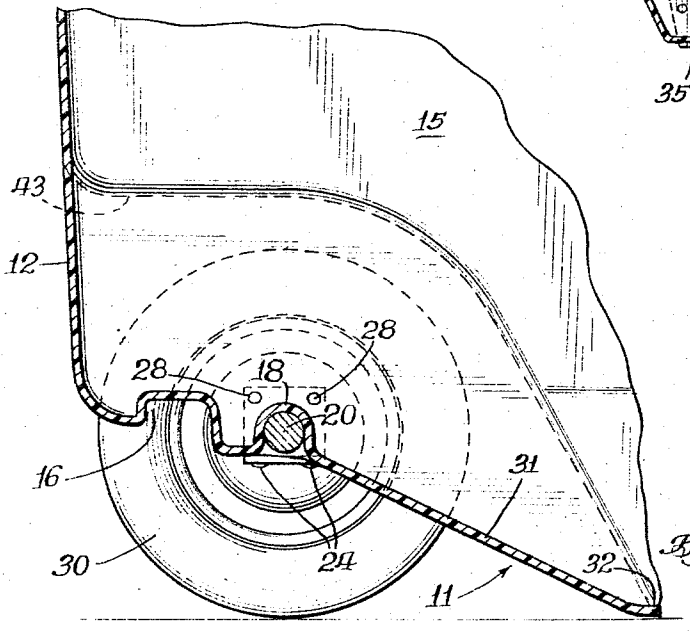


Fig. 9.

Fig. 7.



Inventors:
Charles F. Zeilstra
Carol R. Zeilstra
By: Howard Benno
Attys.

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RUBBISH CARRYING HAND CART

Charles F. Zeilstra and Carol R. Zeilstra, both of 9950 Chaucer Ave., Westchester, Ill. 60153

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4 Claims. (Cl. 280—47.26)

The present invention relates to a new and improved rubbish carrying hand cart.

Scavenger services for the removal of rubbish and garbage have, like most other businesses, been undergoing changes. In certain municipalities the city performs their own rubbish pick-up. In other communities private scavenger companies are granted the scavenging concession and the residents and commercial occupants buy their rubbish pick-up service. The conditions under which rubbish is picked up varies from community to community. However, all of the scavenging companies use large power driven trucks into which the rubbish is dumped and removed from the premises. In many instances the scavenger workmen are required to carry full rubbish cans to the truck on the street and dump the can contents into the truck. The distances travelled by the workmen in carrying the cans varies. In some places he would be required to walk into a subscriber's yard, find the cans, and thence carry the cans to the truck which is parked some distance away. In other instances the subscriber is required to move his rubbish to the curb where it is lifted by the scavenger workmen and dumped into the large rubbish receiving truck with a minimum of walking. The present invention is concerned with a device to ease the difficulty of scavenger workmen walking with heavy loads.

A principal object of the present invention is to provide a novel rubbish cart for use by scavenger workmen and others in the transporting of rubbish from a place of deposit by a building occupant to a large rubbish receiving truck parked some distance away.

Another important object of this invention is the provision of a novel rubbish carrying cart in which rubbish may be successfully carried by the cart either within another container or loose as desired.

A further important object of this invention is to provide novel cart means for carrying rubbish in which the cart may be conveniently rolled on wheels over suitably paved walks and driveways and may be further conveniently carried over places not suitable for wheeled cart use.

A still further important object of this invention is to equip a novel rubbish carrying cart with stable support means during a time when rubbish is loaded therein and effectively counter-balanced during a time when the cart is rocked from its stable support means for convenient movement of the loaded cart.

Another and still further important object of this invention is to supply a novel rubbish carrying cart with a molded body having a hand gripping portion at the bottom thereof and a handle at the top thereof for ease in lifting and dumping the rubbish contents by an operator when he simultaneously engages both the hand gripping portion at the bottom of the cart and the handle at the top of the cart.

Still another important object of this invention is to provide a novel rubbish carrying cart having an effective three point base in which two of the points are wheels and the wheels are recessed in complementary notches in the sides, back and bottom of the cart.

Another important object of this invention is the provision of a novel molded rubbish cart having a particular arrangement of integrally formed ribs for reinforcement and to maintain the desired cart configuration.

A still further important object of this invention is to provide a novel rubbish carrying cart having a molded body with integrally formed V-shaped ribs on the sides thereof with the V apices located near the bottom and including a separately formed bail-like handle in which the side arms of the handle are fastened to the sides of the cart in abutting relationship with one of the V-shaped ribs whereby the cart and its handle are sturdily constructed.

A further important object of this invention is to supply a novel rubbish removal cart with a molded body having a bottom with an axle molded therein, spaced apart and transversely aligned wheels on the outer ends of the axle within notches provided in the cart adjacent both ends of the axle, and a flat centrally disposed and slightly forwardly disposed portion lying in a plane including the lower edges of the wheels.

Other and further important objects and advantages of this invention will become apparent from the disclosures in the following specification and the accompanying drawings.

In the drawings:

FIGURE 1 is a side elevational view of the rubbish carrying cart of this invention.

FIGURE 2 is a front elevational view of the cart of FIGURE 1.

FIGURE 3 is a rear elevational view of the cart of FIGURE 1.

FIGURE 4 is a top plan view of the cart of FIGURE 1.

FIGURE 5 is a bottom plan view of the cart of FIGURE 1.

FIGURE 6 is a sectional view through the cart taken on the line **6—6** of FIGURE 4.

FIGURE 7 is an enlarged sectional view detail of a portion of the bottom of the cart as shown in FIGURE 6.

FIGURE 8 is an enlarged sectional view detail of a portion of the cart taken on the line **8—8** of FIGURE 4.

FIGURE 9 is an enlarged sectional view taken transversely through the bottom of the cart on the line **9—9** of FIGURE 4.

As shown in the drawings:

The reference numeral **10** indicates generally the molded body of the rubbish carrying cart of this invention. The body may be made of any one of many suitable materials including various plastics and fibreboards. Preferably the body should be a lightweight, tough and durable material which will have yieldable characteristics to permit a small degree of deformability of the cart and yet one which will resume its molded shape after discharging a load.

The molded body **10** has a bottom **11**, a back **12**, a front **13** and spaced apart generally parallel sides **14** and **15**. As best shown in FIGURE 5 the bottom has a transversely extending hand gripping recessed portion **16** located adjacent the rear juncture of the bottom with the back of the cart body. The recess **16** is utilized by an operator to grip the bottom of the cart and as will be subsequently described the cart is easily lifted for dumping.

The bottom **11** further includes a transversely extending axle carrying portion **17** located forwardly of the hand gripping portion. As best shown in FIGURES 5, 7 and 8 the axle carrying portion includes a molded central portion **18** which is substantially circular in cross section. The bottom of the molded circular central portion constitutes an open transverse slit **19**. An axle **20**, transversely disposed relative to the cart, is mounted in the circular central portion **18** and as shown in FIGURE 7 is sufficiently large in diameter to prevent its movement through the slit **19**. The portion **18** snugly engages a substantial portion of the circumference of

the axle **20** whereby it is firmly held in and with the cart. Spaced outwardly of the central portion **18** and on both ends thereof there is provided underportions **21** of the bottom **11** to support the underside of the axle **20**. Metal reinforcing angle brackets **22** have horizontal sides **23** which are riveted or otherwise fastened at **24** to the under-supports **21**. Vertical sides **25** of the metal brackets **22** abut generally parallel spaced apart walls **26** of the lower portions of the cart. These walls **26** form generally symmetrical wheel carrying notches **27** on both sides of the cart. Rivets **28** or other fastening means hold the bracket **22** tightly to each of the notch walls **26**. The vertical notch walls **26** and the vertical sides **25** of the brackets **22** are equipped with axially aligned, horizontally disposed apertures to permit sliding passage of the axle **20**. Ground engaging wheels **29** and **30** are mounted on the outer ends of the axle **20** within the notches **27**.

The bottom **11** further includes a forwardly and downwardly inclined portion **31** which extends from the transversely disposed axle carrying portions **17**. Immediately forward of the inclined portion **31** there is an adjoining, generally flat rectangularly shaped portion **32**. As best shown in the enlarged sectional view of FIGURE 9 the flat portion **32** is joined on both lateral sides by oppositely extending upwardly and outwardly inclined sides **33** and **34**. Finally the forward edge of the bottom is equipped with metal reinforcing skids or runners **35** and **36** as shown in FIGURES 1, 5 and 6. The skids **35** and **36** are disposed in slightly diverging directions and are each bent upwardly at their forward ends. The skids act to resist abrasion of the bottom of the cart and assume the brunt of the cart load when the cart is standing in an upright position or when the cart is slid along the ground in an upright position. The upturned forward ends of the skids shield the bottom of the front of the cart and permit sliding of the cart without stubbing on any irregular pavings. The horizontally disposed portions of the skids are riveted or otherwise fastened to the bottom of the cart as shown at **36***a*.

The front **13** of the cart includes a lower portion **37** which adjoins the forward edge of the flat portion **32** of the cart bottom. This lower portion **37** is inclined upwardly and slightly forwardly. The front also includes a generally centrally disposed vertical rib **38** which extends from the top of the front to substantially the bottom. The rib performs the function of reinforcing the front portion of the cart and tends to maintain the molded shape of the front of the cart. The front **13** is provided with a top rim **39** which further acts to reinforce the molded body of the cart and causes it to retain its original formed shape.

As best shown in FIGURES 1 and 6, the sides **14** and **15** of the cart body **10** are substantially symmetrical and have V-shaped outwardly formed or raised reinforcing ribs **40**. These V-shaped ribs tend to keep the desired shape of the molded body. The V-shaped ribs include rear arms **41** extending diagonally from the upper rear edges of each side of the cart to the lower forward edges of each side of the cart. The V-shaped ribs include front arms **42** which are inclined in the opposite direction to that of the rear arms and tend to parallel the inclined front wall **13**. However, the rib arms **42** are not in true parallelism with the front wall but rather act to brace the sides of the cart from the upper forward edge to the lower rearward edge of both sides. The sides **14** and **15** of the cart include wheel notches **43** at the lower rear portions of both sides which act to complement the bottom wheel notches **27**. The sides **14** and **15** are provided with top rims **44** and **45** respectively which are contiguous with the top rim **39** of the front **13** of the cart.

As best shown in FIGURES 1, 3 and 6 the back wall **12** of the cart includes a generally horizontally disposed outwardly formed or raised rib **46** extending across the back at a position spaced below the top but at a position nearer the top than the bottom. The raised rib **46** acts to reinforce the cart back in the same manner as the ribs on the front of the cart and the sides of the cart tend to retain the molded shape of the cart. Wheel notches **47** are provided at the lower outside corners of the back which further complement the wheel notches **27** and **43** to provide ample room for the free rotation of the ground engaging wheels **29** and **30** within the outer confines of the molded body of the cart. This specification has defined the bottom as having notches **27**, the sides as having notches **43** and the back as having notches **47**. These notches together form a pair of spaced apart three-dimensional notches to receive the wheels **29** and **30**. The back **12** includes a top rim **48** which lies in the same general horizontal plane with the top rims **39**, **44** and **45** as previously described for the front and the two sides of the cart. All of the top rim portions form an endless perimeter. The top rim serves to reinforce the body and permit full loading of the cart with rubbish or the like without material distortion of the lightweight molded body.

The bottoms of the wheels **29** and **30** lie substantially in the plane of the flat portion **32** of the bottom so that the cart is stable when standing in an upright position on its generally three-pointed footing as defined by the flat bottom **32** at the front center and the spaced apart wheels **29** and **30** at the rear and sides of the bottom of the cart. This construction makes it possible for the cart to be loaded while there is no movement of the cart or any tendency toward movement of the cart by reason of the ground engaging wheels **29** and **30** rolling on a pavement. It is not until the cart is rocked or tilted rearwardly about the axle **20** as a hinge that the cart becomes effectively wheel mounted and capable of easy transportation.

A handle **49** having a bail or U-shape is provided with parallel spaced-apart side arms **50** and **51**. The arms **50** and **51** are preferably disposed in abutting relationship to the rear diagonal arm **41** of the V-shaped reinforcing ribs on each side of the molded cart. Rivet or other attaching means **52** provide the attaching means for the handle **49** to the cart body **10** by reason of their passing through the arms **50** and **51** and into the sides **14** and **15** of the cart. The handle **49** includes a hand gripping portion **53** which is disposed generally transversely of the cart and provides the means for a user to engage the cart and cause the cart to be rocked about its wheels and then transported. The hand gripping portion **53** also provides one gripping location for the operator when the cart is to be lifted and dumped.

The operation of the rubbish carrying cart of this invention may be varied depending upon the job to which the cart may be put. However, in normal usage, the cart will be wheeled by scavenger workmen by engaging the handle **49** and rocking the cart about its wheels **29** and **30** and then pushing the cart on its wheels to a position where it is close to the side of a building's rubbish cans or trash containers. The workman then sets the cart in its upright position where, as previously explained, it remains stable during the time rubbish from the building's containers are deposited into the cart. Now, with a full cart the workman again tilts the cart about its wheel axle **20** as a central pivot and the cart is pulled or pushed to the site of a large power driven rubbish receiving truck which is usually left on the street in front of or to the rear of the building being serviced. When the workman reaches the truck he thereupon stands the cart in its upright position and grips the handle **49** with one hand and with his other hand grips the transverse recess **16** at the bottom and rear of the cart and either lifts or slides the cart up on the back end of the truck and dumps the rubbish contents into the truck. The inclined front wall **13** and its outwardly formed, generally vertically extending rib **38**, constitute a rail-like means on which the cart is slid up onto the receiving truck for easy dumping.

In an alternative form of the invention a cover **54** may

be used to enclose the top opening of the cart. This optional cover **54** includes a centrally disposed handle **55**, a generally top surface plate **56** and a peripheral skirt **57** depending from the plate **56** to flank the continuous top rim of the cart formed around the top of the cart as shown at **39, 44, 45** and **48**.

As shown in FIGURE 6, applicant contemplates an optional positioning of the cart handle. FIGURE 6 shows such an optional handle **58** in dash lines. The handle **58** is positioned so that its parallel spaced apart side arms **59** lie parallel with the ground line when the cart is upright. The side arms **59** are riveted at **60** to the side walls **14** and **15** of the cart close to the top rims **44** and **45** of the side walls. The handle **58** is provided with a transversely disposed handle gripping portion **61** comparable to the handle gripping portion **53** of the handle **49**. This optional positioning of the handle provides for a closer spacing of the spaced apart hand gripping elements which a user employs in the lifting of the cart for dumping its contents. The positioning of the handle would depend on the size of the scavenger workmen using the cart. The taller men would probably prefer the wider spacing of the hand gripping elements and conversely the shorter men would prefer the closer spacing of the hand gripping elements. Both the preferred form of the handle and the optional handle give added rigidity to the cart by reason of the further bracing of the molded side walls **14** and **15** of the cart.

We are aware the numerous details of construction may be varied throughout a wide range without departing from the principles disclosed herein, and we therefore do not propose limiting the patent granted hereon otherwise than as necessitated by the appended claims.

What is claimed is:

1. A rubbish carrying hand cart comprising a molded body having

a bottom

a back

a front and

generally parallel sides

said bottom including

a generally hand gripping recessed portion adjacent the rear juncture of the bottom with the back,

an axle carrying portion located forwardly of the hand gripping portion,

a downwardly and forwardly inclined portion extending forwardly from the axle carrying portion,

a generally flat portion adjoining the lower forward edge of the inclined portion,

said bottom having a wheel notch disposed adjacent each of the generally parallel sides and each wheel notch extending through the hand gripping recessed portion, the axle carrying portion and at least a part of the downwardly and forwardly inclined portion,

said generally flat portion having upwardly and outwardly inclined sides,

said front including

a portion adjoining the forward edge of said flat portion of said bottom inclined upwardly and slightly forwardly,

a top rim,

a generally centrally disposed vertically extending rib in said front extending from the top rim to substantially the bottom,

said generally parallel sides including

portions adjoining the side edges of said bottom and the front and back of said molded body,

said sides terminating at their upper edges in a top rim continuous with said top rim of the front,

said sides having wheel notches complementing the wheel notches in the bottom of said molded body,

and said sides each having a V-shaped rib between the top rim and the bottom,

said back including

a portion adjoining said bottom at the rear edge thereof and extending upwardly,

a top rim at the upper edge of said back portion, said back top rim being continuous with the top rims of the front and sides,

and said back having wheel notches in the lower outsides thereof complementing the wheel notches of the bottom and sides,

a transversely disposed axle fixedly mounted in said axle carrying portion of said bottom and having the axle ends projecting into the complementary wheel notches of the bottom, sides and back of the molded body,

a ground engaging wheel mounted on each end of the axle and confined within the complementary wheel notches of the bottom, sides, and back of the molded body, the bottoms of said ground engaging wheels lying in substantially the same plane as the flat portion of the bottom of the body,

a cart handle extending rearwardly of the molded body of the cart and having side arms flanking the generally parallel sides of the molded body, and

means attaching said handle side arms to the parallel sides of the cart,

whereby a user may deposit rubbish in the cart and move the cart on its wheels to the site of a receiving truck and thereupon dump the rubbish contents of the cart into the receiving truck.

2. A hand cart as defined in claim **1** in which each of the side arms of the handle abut the rear arm of the V-shaped rib on each of said generally parallel sides.

3. A hand cart as defined in claim **1** in which there is included reinforcing skids under the flat side of the bottom, and said skids upturned adjacent the front of said cart for a short distance.

4. A hand cart as defined in claim **1** in which there is included spaced apart reinforcing metal angle brackets having horizontally disposed faces riveted to the bottom of the cart at opposite ends of the axle carrying portion, and having vertical faces riveted to the inner sides of the wheel carrying notches, and said vertical faces having axially aligned openings therein to receive the axle.

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LEO FRIAGLIA, *Primary Examiner.*

L. D. MORRIS, JR., *Assistant Examiner.*