Aug. 27, 1968 T. L. EDWARDS ETAL 3,398,974

WALKER ATTACHMENT FOR WHEEL CHAIR

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FIG-1

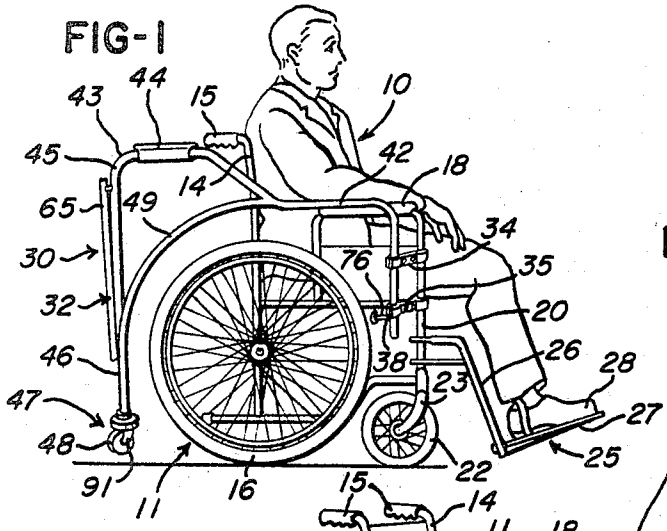
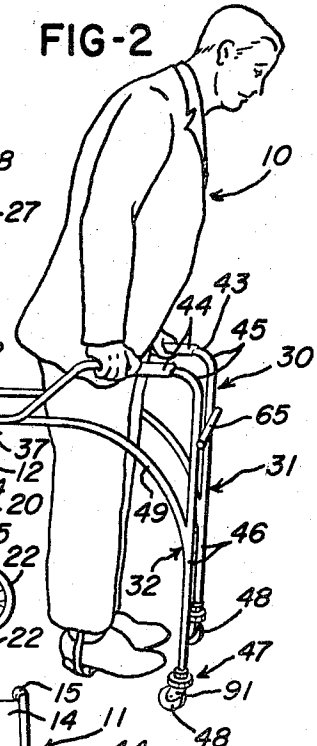


FIG-2



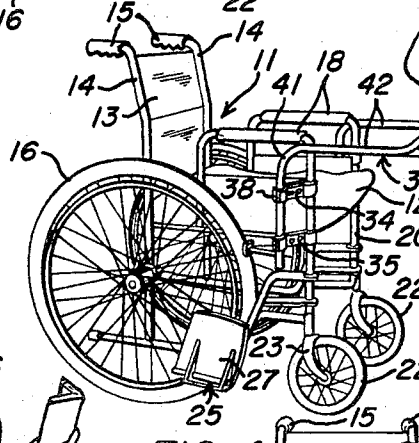


FIG-3

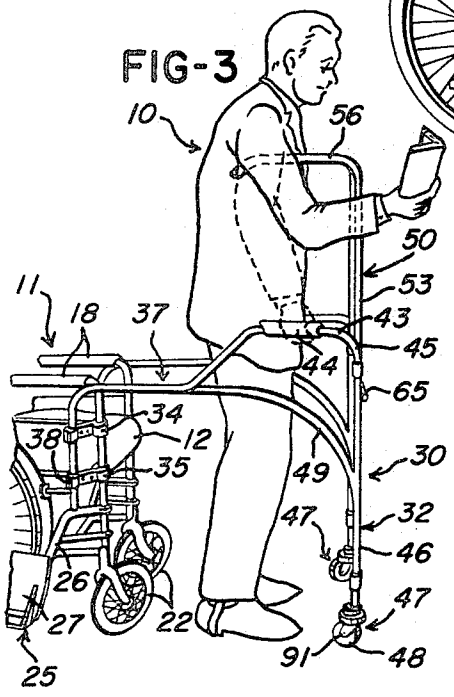
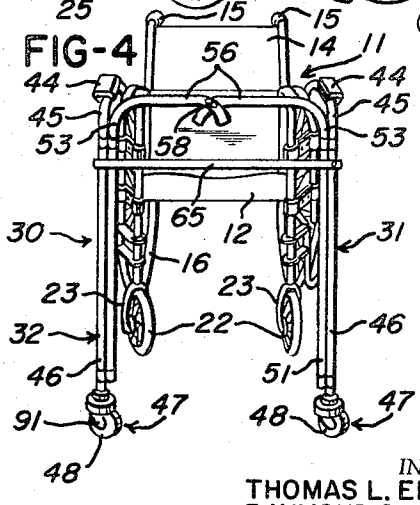


FIG-4



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WALKER ATTACHMENT FOR WHEEL CHAIR

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FIG-5

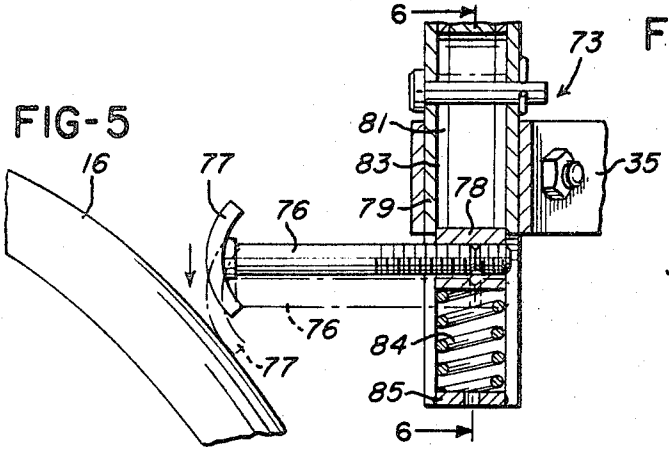


FIG-6

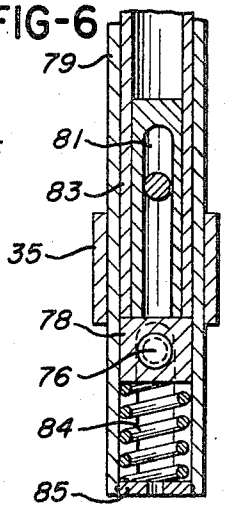


FIG-7

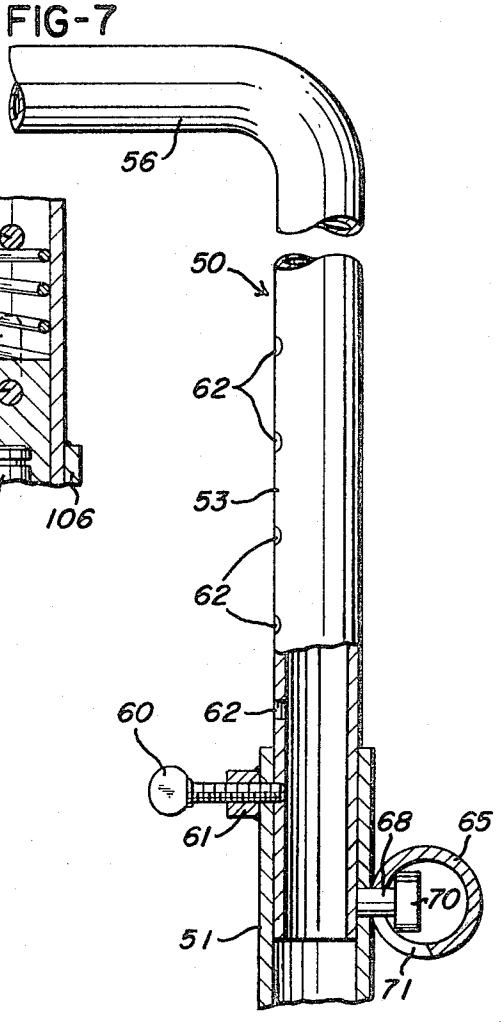


FIG-8

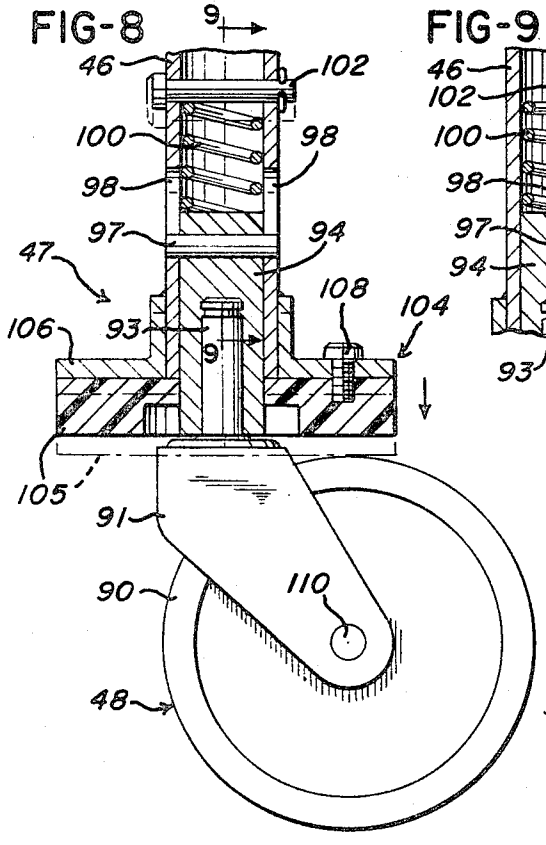


FIG-9

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3,398,974

WALKER ATTACHMENT FOR WHEEL CHAIR

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7 Claims. (Cl. 280—289)

ABSTRACT OF THE DISCLOSURE

A walker attachment for a wheel chair which includes two side assemblies which pivot between a retracted position adjacent the side of the chair and an extended position wherein they cooperate to provide a walker in front of the chair. Wheels are provided on the front portion of the side assemblies, and brakes lock these wheels and the large chair wheels when downward pressure is applied to the side assemblies. Arm supports can be extended to engage the armpits of the patient to support him in a standing position with his hands free.

This invention relates to wheel chairs, and particularly to a walker attachment for use with a standard wheel chair.

Many different types of wheel chairs are manufactured throughout the world for use by older persons, by persons who are physically disabled, and by patients recuperating from illness of one type or another. Many of these wheel chairs have large rear wheels which can be used by the person sitting in the chair to propel the chair while the person sits therein. Frequently it is desirable for the patient to walk or exercise or to regain the strength lost from illness. For this purpose, a separate walker device is used and there normally is great difficulty in getting from the wheel chair to the walker device.

Accordingly, an important object of this invention is to provide a wheel chair having a walker attachment secured thereto which enables the patient to stand up and walk in front of the wheel chair.

Another object of this invention is to provide a walker attachment which is adapted for use with substantially all types of standard wheel chairs, and further to provide such a walker attachment which is easily converted from the walking position to a storage or retracted position so that the wheel chair operates in the usual manner without any substantial interference from the walker attachment.

Another object of this invention is to provide a wheel chair-walker apparatus having a braking device on the walker attachment which applies brakes to the wheels of the apparatus when downward pressure is applied to the walker attachment thereby locking the apparatus in place as the patient takes a step but which automatically releases the brakes when the pressure is relieved so that the apparatus will move with the patient.

Another object of this invention is to provide a walker attachment which can be easily mounted on a standard wheel chair and which is simple in design for low cost and dependable operation over long periods of time, and particularly to provide such an attachment which has adjustable supports which engage the armpits of the patient so that the hands of the patient can be freed for other uses.

Additional objects and advantages of the invention will be apparent from the following description, the accompanying drawings and the appended claims.

In the drawings—

FIG. 1 is a side elevation view of a patient sitting in a wheel chair with the walker attachment in its retracted position;

FIG. 2 is a perspective view of a patient standing in the walker attachment shown in its operative position;

FIG. 3 is a perspective view similar to FIG. 2 and showing the supports engaging the patient in the armpits;

FIG. 4 is a perspective view showing the front of the wheel chair and walker attachment;

FIG. 5 is an enlarged elevation view partially in section showing the rear brake assembly;

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 5;

FIG. 7 is an enlarged elevation view partially in section showing the shoulder arm support;

FIG. 8 is an enlarged sectional view of the front brake assembly; and

FIG. 9 is a sectional view taken along the line 9—9 of FIG. 8.

Referring to the drawings wherein a preferred embodiment of the invention is shown, FIG. 1 illustrates an invalid or medical patient **10** seated in the standard wheel chair **11**. This wheel chair **11** comprises a seat **12** having a back rest **13** with the vertical tubes **14** on either side thereof and the handle members **15** on top thereof for pushing the chair **11**. The vertical tubes **14** extend downwardly and support the large wheels **16** for rotation in a conventional manner. The forward portion of the seat **12** has the arm rests **18** thereon and the downwardly extending tubular members **20** support the smaller front wheels **22** on the fork assemblies **23** which are free to rotate about a vertical axis so that the direction of the wheel chair **11** can be easily changed.

A foot rest **25** is provided on each of the vertical members **20** and each includes a downwardly extending tubular support **26** having the flat plate **27** on the end thereof which receives one foot **28** of the invalid or patient **10**. This plate can be pivoted upwardly and the entire assembly can be rotated on the vertical member **20** to a retracted position as shown in FIG. 2. While one embodiment of a wheel chair has been shown, it should be understood that other types of wheel chairs can be used with the walker attachment **30** which is the subject of this invention.

The walker attachment **30** includes a pair of side assemblies **31** and **32** which are mounted on one of the vertical members **20**. Each of the side assemblies **31** and **32** includes a pair of brackets **34** and **35** which are rigidly clamped near the top of the vertical members **20** adjacent the front of the wheel chair **11**. These brackets thus can be secured to almost any standard wheel chair. These brackets extend outwardly and reawardly to support pivotally the main frame member **37** which extends vertically through the outer ends **38** to create the horizontal section **42** thereof. The main frame member **37** is then bent to form the handle section **43** for mounting the hand grips **44** in the horizontal portion thereof, and then the frame member is bent at **45** to create the vertical section **46** which supports the front wheel assemblies **47** including the caster wheels **48**, as will be described.

A reinforcing tubular member **49** extends between the horizontal section **42** and the vertical section **46** of each side of the assemblies **43** and **44** and is curved as shown to provide additional rigidity to each of the side assemblies. The brackets **34** and **35** permit the entire side assemblies **31** and **32** to pivot about one end thereof so that each side assembly can be pivoted from the walking position shown in FIG. 2 to the retracted position shown in FIG. 1. The ends **38** of the brackets **34** and **35** are offset slightly so that the caster wheels **48** are spaced above the floor when the assemblies **31** and **32** are in retrated position whereas they engage the floor while in the forward position.

Each of the side assemblies **31** and **32** also includes

an arm support **50** which includes a tubular member **51** secured on the inside of each of the vertical sections **46**, as shown in FIG. 4, with the extendable arm support **53** telescoped therein. This arm support slides internally within the support **50**, as shown in FIG. 7, and it has a horizontal section **56** on the upper end thereof for engaging the armpits of the patient **10** (FIG. 3) when in its raised position. In its lowered position, the horizontal section **56** is aligned with the handle section **43** and thus does not interfere with the use of the walker attachment **30**. The arm supports **53** can pivot to allow the horizontal sections **56** to overlap and be secured together by the removable wing nut **58** as shown in FIG. 4. In this position, the arm supports **53** provide additional rigidity to the walker attachment, as well as a vertically adjustable support for the patient's hands.

The arm supports **50** are held in the raised position by the wing nuts **60** which threadedly engage the nuts **61** and pass through the tubular member **51** and into any one of a plurality of openings **62** in the extendable member, as shown in FIG. 7. In this manner, the actual height of the horizontal section **56** can be varied to accommodate the height of the patient.

A horizontal cross bar **65** releasably secures the front of the assemblies **31** and **32** together, as shown in FIGS. 2 and 4, so that the walker attachment **30** is rigid when in its walking position. This bar is pivotally attached to one of the assemblies **31**, and its opposite end is connected to the other assembly **32** by the pin **68** on one of the tubular members **46** having an enlarged head **70** (FIG. 7) which is engaged by the keyhole slot **71** in the end of the cross bar **65**. Thus the cross bar **65** can be easily detached and moved to a storage position as shown in FIG. 1.

Front and rear brake assemblies **73** are provided on each of the side assemblies **31** and **32** for braking the caster wheels **48** and the large rear wheel **16**, respectively, when weight is applied to the handle grips **44**. The rear brake assemblies **73** each include a horizontal brake member **76** having a tire engaging abutment **77** on one end thereof and being threaded into the plug **78** within the vertical sleeve **79** held in position by the brackets **34** and **35**. The elongated slots **81** are provided in the sides of the tube sleeve **79** to allow the brake member **76** and the tube **83** on the end of main frame member **37** to move vertically against the bias of the spring **84** which is interposed between the disk **85** on the bottom of the sleeve **79** and the plug **78**. Thus, when the weight forces the main frame downwardly, the brake member **76** moves with the tube **83** downwardly so that the abutment **77** engages the rubber tire or wheel **16** and locks it against rotation.

Each of the front brake assemblies **47** includes the conventional caster wheel **48** comprising a rubber tire mounted on the fork **91** which is supported and pivots with the vertical support pin **93**. The support pin **93** is held in the plug member **94** which is secured within the lower end **95** of the vertical tube **46** by the cross pin **97** which also extends through the elongated slots **98** in the opposite sides of the tube **46**. A coil spring **100** is mounted inside of the tube **46** between the plug member **94** and the upper cross pin **102** which extends through the tube **46** (FIG. 8). On the lower end of the tube **46** is rigidly secured the brake member **104** which comprises an annular disc **105** of phenolic or other plastic material secured to the support plate **106** by the conventional screws **108**.

Accordingly, when downward pressure is applied to the handle grips **44** the tube **46** is forced downwardly against the bias of the spring **100** so that the lower end **95** of the tube slides downwardly with respect to the plug member **94** to enable the brake member **104** to engage the rubber tire **90** of the caster wheel **48** and lock it against movement. When this pressure is relieved the spring **100** forces the plug member **94** downwardly until the cross pin **97** engages the bottom of the slots **98** at which time the brake member **104** is spaced from the tire which is then free to rotate about its support pin **93** and about the vertical axle **110**, in the conventional manner.

In operation, when the walker attachment is not in use it is pivoted about the outer ends **38** of the brackets **34** and **35** so that the side assemblies remain in their retracted position as shown in FIG. 1. In this position, the caster wheels **48** are spaced above the floor and there is substantially no interference with the use of the wheel chair in the conventional manner. Suitable means may be provided to hold releasably the side assemblies in this retracted position.

When it is desired to use the walker attachment **30** it is merely necessary to pivot the side assemblies **31** and **32** about the brackets **34** and **35** to a position in front of the wheel chair and then connect the cross bar **65** to interconnect the side assemblies and provide rigidity to the unit. The patient may then use the walker attachment to pull himself up to the standing position as shown in FIG. 3 wherein the handle grips **44** are use to support the patient in this standing position. The patient is free to walk forward and each time that the hands apply downward pressure to the side assemblies, for example, when a step is being taken, the front and rear brake assemblies **47** and **73** lock the wheels **48** and **16** against rotation in any direction. Thus, the wheel chair-walker unit **10** becomes a substantially immovable fixture by merely pressing downwardly on the side assemblies **31** and **32**. When a patient releases the pressure on the side assemblies the brakes are automatically released thus allowing the unit **10** to be moved forward for the next step.

When the patient desires to free his hands for use in working or for some other reason, the arm supports **50** are raised so that the horizontal sections **56** thereof engage the patient in the armpits. As indicated above, these shoulder members are adjustable to accommodate different heights of patient. The patient can then walk in the manner described above with the arm supports **50** absorbing the downward pressure and transferring the same to the brake assemblies **47** and **73** which operate in the same manner as described above. Should the patient lose balance or become weakened, the increased pressure on the arm supports **50** would be transferred to the arm supports to lock the side assemblies **31** and **32** rigidly in position. The horizontal sections **56** can also be secured together as shown in FIG. 4 to add rigidity and provide additional support for the patient.

The invention has thus provided a walker attachment for use with a standard wheel chair which enables the patient to stand up and walk with ease. The walker attachment is easily moved to a retracted position wherein it provides substantially no interference with the normal use of the wheel chair, and it can be easily moved to the walking position by the patient. Both the front and rear wheels are locked in position when pressure is applied to the walker attachment to prevent the unit from moving during the time the patient is taking a step or is otherwise resting on the walker. In addition, adjustable supports are provided for engaging the armpits of the patient to free his hands for use or to provide additional support for the patient.

While the form of apparatus herein described constitutes a preferred embodiment of the invention, it is to be understood that the invention is not limited to this precise form of apparatus, and that changes may be made therein without departing from the scope of the invention which is defined in the appended claims.

1. A walker attachment adapted for use with a wheel chair which has front and back and two sides, said walker attachment comprising a pair of side assemblies mounted on the wheel chair near the front thereof and extending forwardly of the chair generally parallel to the sides thereof, means connecting the forward end of said as-

semblies together to provide rigidity thereto, wheel means supporting said forward end of said assemblies for movement across the floor, said means connecting the forward end of said assemblies together being manually disengageable and said side assemblies being pivotally supported on the wheel chair for movement to a retracted position spaced from in front of said chair.

2. A walker attachment as defined in claim 1 wherein each said side assembly includes a tubular main frame member having one end pivotally secured to the wheel chair, a horizontal section on each of said main frame members having hand grip means thereon, a forward vertical section connected to said horizontal section and having said wheel means secured to the lower end thereof, arm support means mounted on said vertical section and adapted to extend vertically from a retracted position to a raised position for engaging a patient's armpits to support the patient in a standing position with hands free.

3. A walker attachment as defined in claim 2 wherein said arm support means has a horizontal upper section for engaging the armpits of the patient, and said horizontal upper section being aligned with said horizontal section of said main frame member when said arm support means is in said retracted position.

4. A walker attachment as defined in claim 1 wherein brake means are provided to lock said wheel means against rotation when downward pressure is applied to said side assemblies.

5. A walker attachment as defined in claim 1 wherein arm support means are provided on each of said side assemblies for engaging a patient's armpits to support the patient in the walker ateachment.

6. A walker attachment as defined in claim 1 wherein brake means are provided to lock at least two of the wheels on the wheel chair against rotation when downward pressure is applied to said side assemblies.

7. A walker attachment as defined in claim 1 wherein brake means simultaneously lock at least two of the wheels on the wheel chair and said wheel means when downward pressure is applied to said side assemblies, said brake means being automatically disengaged when the downward pressure is relieved from said side assemblies.

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