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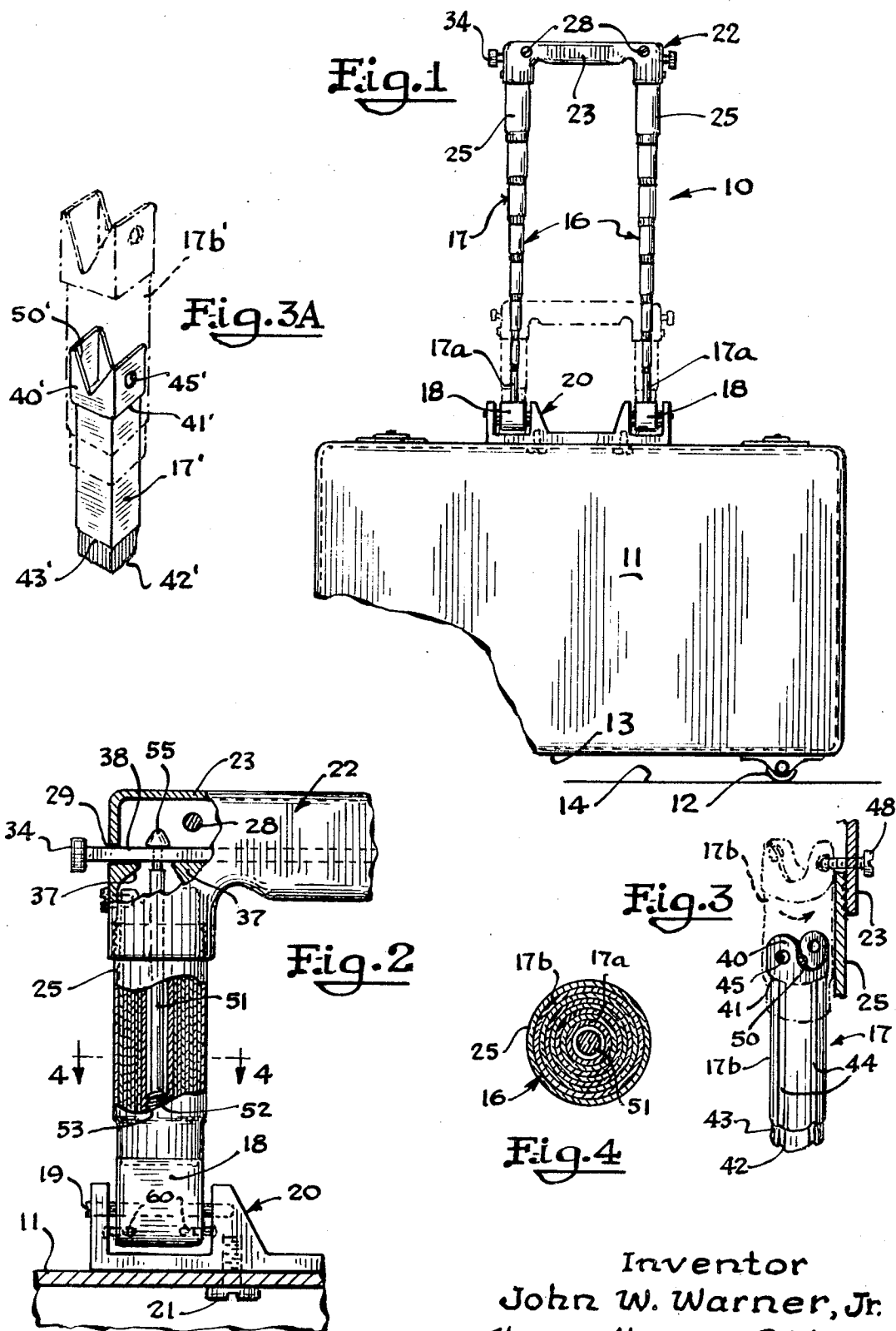
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EXTENDABLE HANDLE STRUCTURE

Filed Aug. 19, 1968

2 Sheets-Sheet 1



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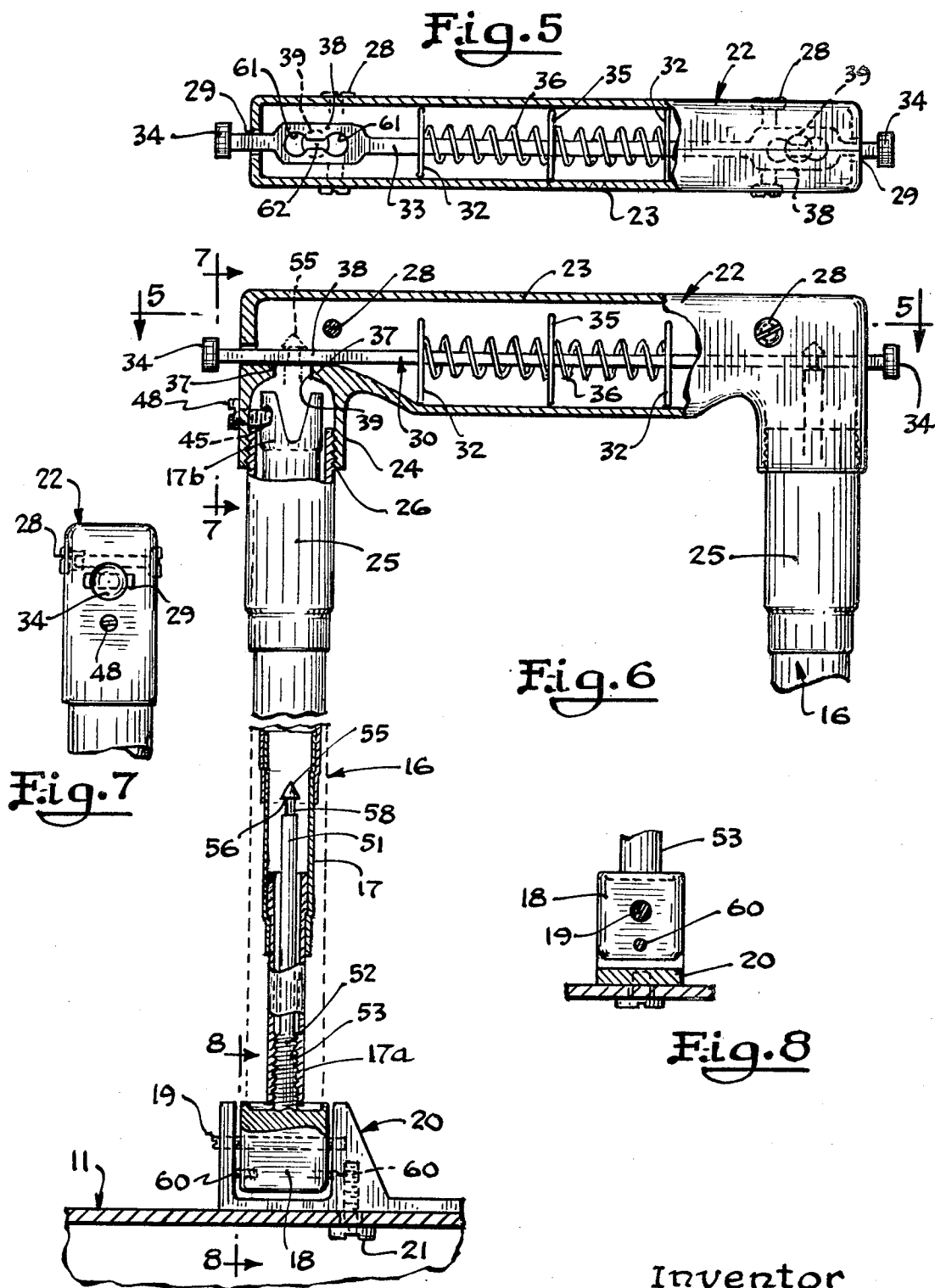
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2 Sheets-Sheet 2



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EXTENDABLE HANDLE STRUCTURE

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6 Claims

ABSTRACT OF THE DISCLOSURE

An extendable handle structure for an article of luggage having support means on the lower surface thereof and wherein the extendable handle structure comprises a plurality of telescopic sections forming an extendable collapsible arm member having the lower end thereof secured to the luggage and the upper end connected to a hand engageable section with latch means thereon for releasably holding the handle section adjacent the upper surface of the luggage in load supporting relationship therewith while permitting the handle section to be moved into an elevated position above the upper surface of said luggage when the latch means is released to facilitate moving the luggage along the supporting surface without lifting the luggage.

The present invention relates generally to an improved handle structure for an article and more particularly to an extendable handle structure for an article, such as hand luggage, which has roller support means on a lower surface thereof.

With the increasing number of travellers and the shortage of porters, bellhops and the like attendants to assist with carrying luggage in airports, railroad stations, hotels and motels, it is becoming increasingly important to provide hand luggage with means for conveniently rolling or sliding the luggage over the supporting surface, while at the same time permitting the luggage to be hand carried in a normal manner whenever desired. One example of handle structure meeting the foregoing requirements is shown in the Warner U.S. Pat. No. 3,275,336. Other extendable handle structures which can be readily mounted on luggage of conventional design and other articles are desirable.

It is therefore an object of the present invention to provide an extendable handle structure which can be conveniently and readily converted from a conventional load carrying handle into an extendable handle structure elevated above the surface of the article to facilitate rolling or sliding the article over a supporting surface.

It is also an object of the present invention to provide for an article an extendable handle structure formed of interengageable telescopic sections having an improved latch means for releasably holding the telescopic sections in a retracted or collapsed position and in load support relationship with the article.

It is still another object of the present invention to provide for an article an extendable handle structure formed of a plurality of interengageable telescopic sections having improved means for adjusting the heights to which the handle structure can be elevated above the surface of the article.

It is a further object of the present invention to provide in an extendable handle structure formed of interengageable telescopic sections improved means for maintaining the handle structure in an elevated position.

Other objects of the present invention will be apparent to those skilled in the art from the following detailed description and claims when read in conjunction with the accompanying drawing wherein:

FIG. 1 is a fragmentary side elevational view of an article of luggage showing one embodiment of the extendable handle structure of the present invention.

FIG. 2 is a fragmentary side elevational view partially in vertical section showing the extendable handle structure of FIG. 1 in a fully retracted position.

FIG. 3 is a fragmentary schematic perspective view of interengaging telescopic sections of the structure shown in FIGS. 1 and 2.

FIG. 3A is a fragmentary schematic perspective view of a modified form of a telescopic section.

FIG. 4 is a horizontal sectional view taken along the line 4—4 of FIG. 2.

FIG. 5 is a fragmentary top plan view partially in section showing a portion of the extendable handle structure of FIG. 1.

FIG. 6 is a fragmentary vertical sectional view partially in elevation showing a portion of the extendable handle structure of FIG. 1.

FIG. 7 is a fragmentary and elevational view showing a portion of the extendable handle portion of FIG. 1; and

FIG. 8 is a fragmentary elevational view partially in vertical section taken along the line 8—8 of FIG. 6.

The improved extendable handle structure 10 in the preferred embodiment shown in FIG. 1 is secured to an article of luggage 11 which has several rollers 12 or other support means having a low frictional resistance to facilitate moving the luggage along a floor or like supporting surface 14 mounted on the lower surface 13 of the luggage. The extendable handle structure 10 in the preferred form of the invention shown is comprised of two spaced extendable arm assemblies 16 formed of a plurality of interengaging tubular telescopic sections 17. The lowermost telescopic sections 17a of the arm assemblies 16 are pivotally secured to the surface of the article, preferably the uppermost surface thereof opposite the surface having the roller support means, by means of base members 18 having a pin 19 which extends through the base members 18 and securely hold the sections 17a in a mounting bracket 20 fastened to the upper surface of the article of luggage 11 by means of suitable fasteners 21.

The uppermost telescopic sections 17b of the arm assemblies 16 are operatively associated with a hand engageable assembly or handle assembly 22. The hand engageable assembly 22 is formed of a generally transversely extending portion 23 having a shape which can be conveniently held by the hand with depending cylindrical portions 24 extending downwardly perpendicularly from each end of the transversely extending section 23. Each of the depending cylindrical portions 24 is internally threaded and has an inner diameter which permits threadably mounting within the lower end thereof a depending tubular section 25 with the cylindrical upper end 26 thereof externally threaded for engaging the internally threaded portion 24 and with the lower end section 27 having a reduced diameter enabling the upper telescopic section 17b of the arm assembly 16 to be seated and retained.

The transversely extending portion 23 and the depending end portions 24 are preferably formed of two molded sections having a generally semi-circular cross section which are adapted to be joined by fastener means 28 to form a unitary structure similar to a conventional handle for luggage. Suitable axial openings 29 are provided at the opposite ends of the handle portion 23, and spaced support guides 32 are provided between the ends of the handle portion 23 for supporting a latch bar 33. A latch actuating member 34 is formed at the opposite ends of the latch bar 33, which together form part of the latch control mechanism 30. A spring mounting means 35 for a latch actuating spring 36 is also provided within the handle

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portion 23. Spaced latch plate supports 37 are also preferably formed integrally within the handle assembly 22.

Any suitable means can be used to maintain a sliding telescopic engagement between the contiguous tubular telescopic sections 17 forming each arm assembly 16 which prevents complete separation of the interengaging tubular telescopic sections when the arm assembly 16 is fully extended. In the preferred embodiment, as best shown in FIG. 3, the upper end portion of each tubular telescopic section 17b has an enlarged upper end portion 40 which provides at the lower end thereof an abutment surface or outer shoulder 41. A constricted lower end portion 42 of each telescopic section 17 forms an inner shoulder or seating surface 43 at the lower end of each telescopic section. Since the outer diameter of the abutment surface 41 is greater than the inner diameter of the seating surface 43 of the next lower telescopic section, the tubular telescopic sections 17 are maintained in engagement when each arm assembly 16 is fully extended. Also, if desired, the wall section of the constricted lower end portion 42 can be slotted and bent inwardly to provide a surface which frictionally engages the outer surface of the enlarged upper end section of the contiguous tubular telescopic section 17 and thereby facilitate maintaining the contiguous telescopic sections in fully extended relationship. If preferred, the wall of the enlarged upper end portion 40 can be cut so as to provide a tang or outwardly bowed tab portion to provide increased frictional contact with the contiguous telescopic section. Longitudinally extending alignment grooves 44 spaced 90° are preferably formed in the lateral wall of each telescopic section.

The upper end sections 17b of each of the tubular telescopic sections 17 are also preferably provided with a small threaded passage 45 which co-acts with a threaded fastener 48 extending through the wall of the depending end portion 24 of handle assembly 22. When it is desired to change the lengths of the extendable arm assembly 16 one or more of the upper telescopic sections 17 can be moved into the depending tubular section 25 of the handle assembly 22 until the threaded passage 45 in the telescopic section is aligned with the axis of the threaded fastener 48. When the threaded fastener 48 is moved into engagement with the threaded passage 45 in a tubular telescopic section 17, the tubular telescopic section 17 is held within the handle assembly 46 even when the handle assembly is fully extended. In this way the length of the arm assemblies 16 can be adjusted to accommodate the height of the individual.

In order to avoid having the tubular telescopic sections 17 which are not held by the threaded fastener 48 in the depending tubular sections 25 being obstructed by the inner end of the threaded fastener 48 extending into the interior of the depending portion 24 when the telescopic sections are moved into fully retracted position within the handle assembly 22, the enlarged upper end portion 40 of each telescopic section 17 is formed with a slotted or concave end surface 50 so that the midpoint of the end surface 50 lies below the end of the threaded fastener 48 when the tubular sections 17 are fully seated in the handle assembly 22. And, by aligning the tubular telescopic sections 17 which are not engaged by the threaded fastener 48 so that the midpoint of the slotted end surface 50 is opposite the threaded fastener 48, the telescopic sections 17 can be seated within the handle assembly 22 without being obstructed by the threaded fastener 48. Other means, such as complete removal of one or more of the telescopic sections, can also be used to effectively control or adjust the length of the arm assemblies, if desired.

Since the extendable handle assembly 22 must support the weight of the article, such as an article of luggage, when the handle assembly 22 is used as a conventional handle for carrying the luggage, it is an important feature of the present invention to provide means which will securely hold the handle assembly 22 in fully retracted or

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telescoped load supporting position but which also permits conveniently releasing the handle to permit fully extending the handle assembly 22 whenever it is desired to move the luggage over a surface without lifting by means of the handle. The preferred means for releasably securing the handle assembly 22 in a telescoped or retracted position comprises generally providing a latch head means extending upwardly from the mounting bracket means 20 which co-acts with a latch control mechanism 30 mounted in the handle assembly 22. More particularly, the base member 18 which is pivotally secured to the mounting bracket 20 has an axially extending shank 51 with an externally threaded portion 52 at the lower end thereof which threadably engages an internally threaded lower end section 53 of the lowermost telescopic section 17a. The shank 51 has at the upper end thereof a latch head member 55 disposed axially within the tubular section 17a. The latch head member 55 preferably has a generally conically shaped upper end portion and a transversely extending lower end wall surface 56 which is connected to the remainder of the shank 51 by a reduced diameter section 58. The transversely extending end wall surface 56 of the latch head member 55 is spaced from the upper transverse surface of the base member 18 a distance equal to the distance between the lower end surface of the depending tubular section 25 of the handle assembly 22 and the upper transverse surface of the latch plate 38 so that the tubular telescopic sections 17 can be fully collapsed within the depending tubular section 25 of the handle assembly 22, and permit the lower end of the depending tubular section 25 to abut the upper end of the base member 18 when the handle assembly 22 is latched in retracted position.

The latch control mechanism 30 which co-acts with the latch head member 55 is mounted within the handle assembly 22 at the upper end of the depending tubular section 25 and comprises the transversely extending slideable latch plates 38 and latch plate support means 37 disposed within the handle assembly 25. The latch plate support means 37 have an axial passage 39 through which the latch head member 55 extends when the arm assembly 16 is in fully retracted position. Each of the latch plates 38 ride on the upper surface of the latch plate support means 37 and have a dumbbell shaped passage extending therethrough with the larger spaced circular end openings 61 of the dumbbell shaped passage having a sufficiently large diameter to permit the conical shaped latch head member 55 to pass therethrough. The walls of the latch plate 38 forming the reduced diameter passage 62 connecting the two circular end openings 61 of the dumbbell shaped passage are spaced a distance less than the diameter of the conical latch head section but greater than the diameter of the connecting section 58 of the shank 51 and are adapted to engage the lower transverse surface 56 of the latch head member 55 and securely restrains the latch head 55 against downwardly movement. Each of the latch plate sections 38 is mounted on the spring biased latch bar 33 which normally maintains each of the latch plates 38 with the reduced diameter connecting passage 62 over the center of the axial passage 39 in the latch plate support member 37. One end of the latch spring means 36 is secured to the inner surface of the handle assembly 22 while the other end is secured to the latch bar 33. The ends 34 of latch bar 33 extends outwardly beyond the end walls of the handle assembly 22 to permit convenient movement thereof for releasing the latch head 55 from engagement by the latch plate section 38 when it is desired to raise the handle assembly to its elevated or extended position.

In operating the latch control mechanism 30 to release the handle assembly 22 from proximity to the mounting bracket 20, the end 34 of the latch bar is pressed inwardly toward the handle assembly 22 so that the latch plate section 38 is moved transversely until one of the enlarged openings 61 is directly over the axial opening 39 in the

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latch plate support section 37, thereby permitting the latch head 55 to pass downwardly through the latch plate 38 and the opening 39 in the latch plate support sections 37. With the latch plate 38 and the latch head 55 in the latter relationship, the handle assembly 22 can be moved upwardly to the fully extended or elevated position. When pressure on the spring biased latch bar 33 is released, the latch plate section 38 returns to its normal position with the restricted portion 62 of the latch plate centered over the axial opening 39 in the latch plate support 37.

If it is desired to again latch the handle assembly 22 to the mounting bracket 20, the handle assembly 22 is depressed, causing the tubular telescopic sections to slide within each other, until the conical latch head member 55, preferably by a camming action of the conical latch head 55, the latch plate section 38 is moved transversely until the enlarged end section of the latch head 55 is centered in the axial passage 39 in the latch support plate 37 thereby permitting the latch head to pass through the latch support plate, and the upper surface of each latch plate 38 engages the lower transverse surface of the latch head 55 effectively locking the handle assembly 22 in the fully retracted position with the lower end of each depending tubular section 25 of the handle assembly 22 abutting the upper surface of the base member 18 secured to the luggage 11.

Resilient means, such as the spring detent means 60 or a spring clip plate are mounted in the end of the base section 18 so that there is a definite frictional resistance between the end of the base section 18 and the mounted bracket 20, whereby the base member 18 and the handle assembly 22 secured thereto are maintained in a vertical position until moved by positive pressure into a horizontal position.

In the modified form of the mention of FIG. 3A, the telescopic sections 17, instead of having a circular cross section, have a square cross section with enlarged upper end sections and reduced lower end sections with parts corresponding to those shown in FIG. 3.

I claim:

1. A handle structure for an article comprising a telescopic arm means formed of a plurality of slideably interengageable tubular telescopic sections, the lowermost tubular telescopic section thereof being connected with a handle mounting bracket of said article and the uppermost tubular telescopic section being operatively connected with a handle assembly, said handle assembly having a transversely extending hand engageable portion and a depending tubular section operatively engaging said uppermost tubular telescopic section, said depending tubular section adapted to receive said tubular telescopic sections therein when said handle assembly is in a position adjacent said mounting bracket, and said telescopic sections permitting movement of said handle assembly into spaced relationship above said mounting bracket to

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facilitate moving said article along a supporting surface without lifting said article, and latch means adapted to releasably hold said handle assembly adjacent said mounted bracket in weight supporting relationship with said article.

2. A handle structure as in claim 1, wherein said latch means comprises a latch head means secured to said mounting bracket and a latch head engaging means mounted on said handle assembly.

3. A handle structure as in claim 2, wherein said latch head means extends upwardly axially within said tubular telescopic sections and said latch head engaging means is disposed within said handle assembly.

4. A handle structure as in claim 3, wherein said latch head means comprises a stem member secured to said mounting bracket with an enlarged latch head at the end thereof, and said latch head engaging means comprises a transversely movable latch plate member mounted within said handle assembly normally engaging said latch head and a latch plate actuating means extending from said handle assembly for effecting transverse movement of said latch plate member to move said latch plate member out of engagement with said latch head member.

5. A handle structure as in claim 1, wherein said transversely extending hand engageable portion of said handle assembly has at the opposite ends thereof latch release means or disengaging said handle assembly from weight supporting relationship with said article; whereby said latch means can be operated from said handle engageable portion.

6. A handle structure as in claim 1, wherein a said tubular telescopic section has an upper end section thereof provided with a threaded passage extending through at least one wall thereof, and a concave recess extending inwardly from the outer end thereof circumferentially spaced from said passage, and said handle assembly being provided with a fastener member extending transversely through a wall section of said assembly for engaging said threaded passage in said tubular section, whereby said telescopic section is retained within said handle assembly when said telescopic arms means is fully extended.

References Cited

UNITED STATES PATENTS

2,245,899	6/1941	Campbell.	
2,392,926	1/1946	Kelly	190—57
3,153,252	10/1964	Ricciardi	16—115 X
3,236,538	2/1966	Johansen.	

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16—115; 190—18; 280—47.37