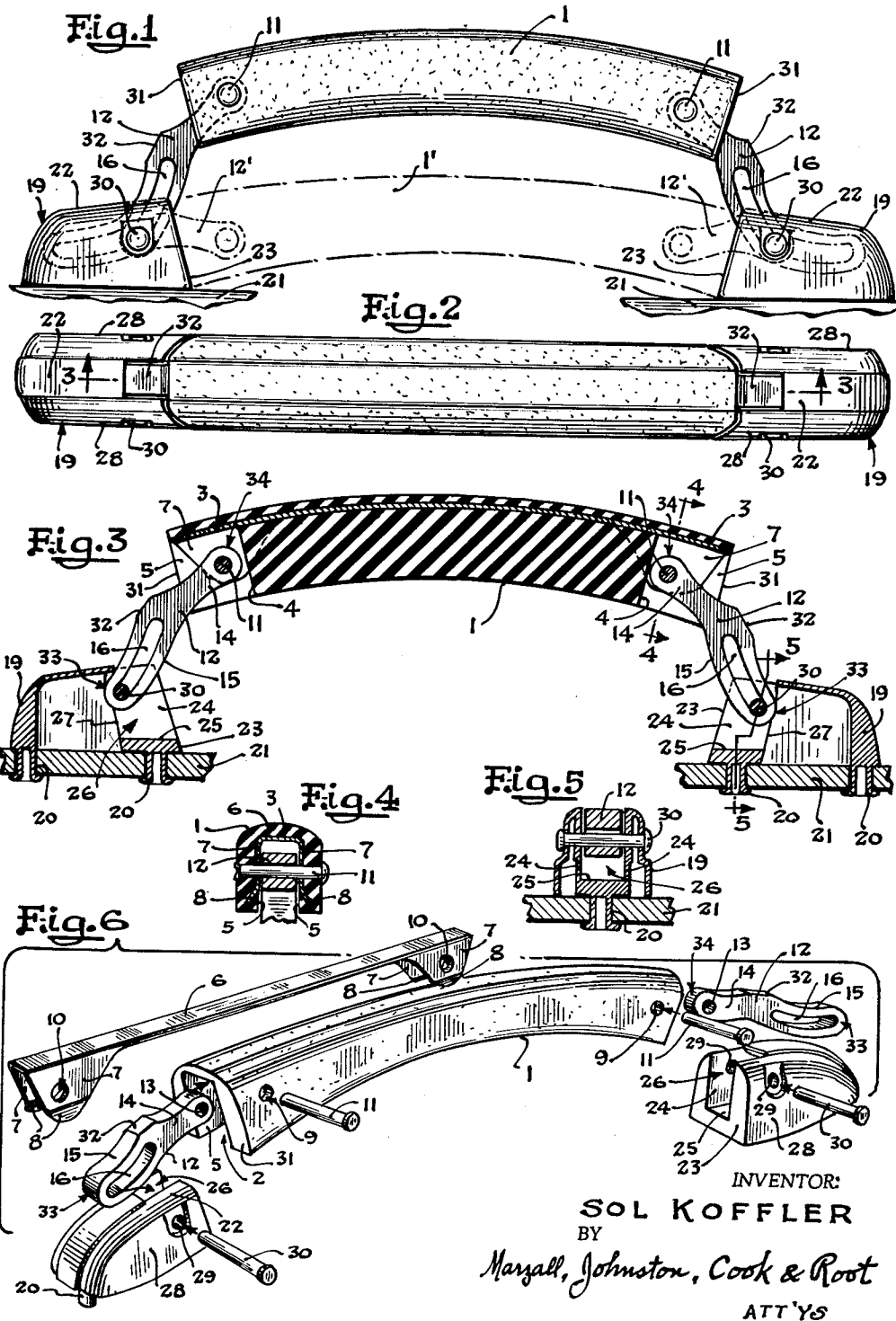


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S. KOFFLER
COLLAPSIBLE HANDLE

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COLLAPSIBLE HANDLE

Sol Koffler, 600 Blackstone Blvd., Providence, R.I.

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4 Claims. (Cl. 190—58)

This invention relates to handles, and more particularly to collapsible handles for luggage and the like.

It is the principal object of this invention to provide a novel handle for use on luggage and the like.

Another object of the present invention is to provide a handle for luggage and the like, wherein the grip portion is movable, relative to the attaching portion thereof, between a raised carrying position and a lowered storage position.

Yet another object is to provide a handle of the type described, wherein, when the grip portion is disposed in the aforementioned storage position, the handle affords an attractive, compact, substantially smoothly contoured unit closely adjacent to the luggage to which it is attached.

A further object is to provide a handle of the type described, wherein, when the grip portion is disposed in the aforementioned carrying position, it is spaced a substantial distance from the luggage so that it may be readily grasped in the hand of the person carrying the luggage.

Another object of the invention is to provide a handle of the type described wherein the grip portion can be raised to the carrying position without substantial change in shape.

A still further object is to provide a handle of the type described which is practical and efficient in operation, and which may be readily and economically produced commercially.

These and other objects and advantages will be apparent from the following description, when it is read in light of the drawings, in which:

FIGURE 1 is a side elevation of the present handle in the raised luggage carrying position;

FIGURE 2 is a top view of the handle in the raised luggage carrying position;

FIGURE 3 is a detail sectional view taken along line 3—3 in FIGURE 2;

FIGURE 4 is a detail sectional view taken along line 4—4 in FIGURE 3;

FIGURE 5 is a detail sectional view taken along line 5—5 in FIGURE 3; and

FIGURE 6 is an exploded perspective view of the parts of the handle shown in FIGURE 1, with the parts shown as they appear prior to assembly.

Broadly described, the invention utilizes an elongated grip member with link members pivotally attached at each end thereof. The grip member preferably comprises an outer resilient nonmetallic handle portion having an inner channel or recess extending lengthwise, the upper part of said recess containing a sheet metal strip which is flexible and extends lengthwise to points adjacent the ends of the handle. Adjacent each end of said metal strip is a pair of metal tabs, each metal tab extending downwardly from said metal strip along the side of said recess forming a pair of opposing aligned tabs adjacent opposite ends of said recess. Each pair of said tabs has a pair of aligned holes. These holes are also aligned with holes in the grip member adjacent its opposite ends. Pins or rivets pass through the grip member holes, the tab holes and a hole in the upper end of each of the link members and are flanged at their outer ends to secure them to the grip member. These serve the dual purpose of fastening the metal strip to the grip member and of providing pivoting means for one end of the link members. Each of the link members has a lateral slot extending therethrough. Attaching members are provided, each having means for mounting same on an article of luggage

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and the like. Link pin members pass laterally through certain of said slots and attaching members whereby each of said link members is attached in pivotal and slidable relation to one of said attaching members.

The accompanying drawings illustrate a preferred embodiment of the present invention, and the principles thereof, and what is considered to be the best mode of applying these principles. Other forms of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claims.

Referring in detail to the drawings, in which like numbers refer to like parts throughout the same, the preferred embodiment of the present invention utilizes an elongated grip member 1. Grip member 1 may be slightly concave in shape, and additionally may be slightly thicker at its ends than in the middle so as to provide a more convenient and comfortable gripping surface. However, it may be of any suitable shape. Grip member 1 may be made from substantially any material. It may be flexible or semi-flexible but need not be; in preferred form it is semi-flexible or slightly elastic, thus providing a good gripping surface. Typically, it is made of a molded plastic material, e.g., polyvinyl chloride, rubber, neoprene, or other natural or synthetic polymer.

Each end of grip member 1 is cut away to form a substantially arcuate recess 2 which is rectangular in cross section with top wall 3, back wall 4 and side walls 5. Running longitudinally through grip member 1 is flexible metal strip 6, the ends of which are bent down to form tabs 7. Tabs 7 and the ends of strip 6 fit within the recesses 2 in grip member 1. The bottom portions 8 of tabs 7 are flared outwardly and are anchored within the material forming grip member 1. Metal strip 6 serves to reinforce the strength of grip member 1. More importantly it forms a framework for recesses 2 and prevents pull-out of link members 12, subsequently to be described.

Holes 9 are provided in the sides of grip member 1 adjacent opposite ends, said holes communicating with recess 2. Similar holes 10 are provided in tabs 7. Holes 9 and 10 are positioned so that pivot pins 11 laterally pass through grip member 1, tabs 7 and recesses 2.

A pair of dog-leg shaped link members 12 have holes 13 in upper segments 14 thereof. Upper segments 14 of link members 12 are positioned within recesses 2. Pivot pins 11 pass through holes 13 in upper segments 14 of link members 12 whereby link members 12 pivot about pins 11.

Lower segments 15 of link members 12 have therein a lateral slot 16 extending through said link members substantially from the lower ends to the centers thereof. Lower segments 15 are slightly curved in shape. Slots 16 have a configuration which is similar to that of lower segments 15.

Substantially hollow attaching members 19 are provided at each end of grip member 1. Extensions 20, extending downwardly from attaching members 19, enable the latter to be mounted on a piece of luggage 21, for example. Part of the tops 22 and fronts 23 of each attaching member 19 is cut away. In conjunction with cut away parts, parallel side faces 24 and base 25, perpendicular thereto, form a recess 26 in attaching member 19. Back faces 27 of recesses 26 are open. Sides 28 of attaching member 19 have holes 29, communicating with recesses 26. Link pins 30 pass through holes 29 in each attaching member 19. Pins 30 also pass through slots 16 in link members 12, the lower segments 15 of which extend past recesses 26 into the interior of the substantially hollow attaching member 19 through open back 27 in recess 26.

Each link member 12 is adapted to slidably move in

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and out of the interior of the hollow attaching member 19, the movement being limited by link pins 30 and the ends of slot 16. In addition to the inward and outward movement of link members 12 with respect to attaching members 19, the former also are adapted to pivot about link pins 30. The cut away portions of tops 22 of attaching members 19 permit the upwardly pivotal movement of link member 12, as member 12 is moved outwardly from the interior of attaching member 19.

In operation, therefore, when grip member 1 is raised to the carrying position, as shown in FIGURE 1, link members 12 slide outwardly from attaching members 19, link members 12 at the same time pivoting downwardly about pivot pins 11 and upwardly about link pins 30. The grip member is raised to the carrying position without substantial alteration in shape, due to the use of the novel sliding, pivoting link members.

The reverse operation occurs when grip member 1 is returned to the storage position. Link members 12 pivot upwardly about pivot pins 11 and downwardly about link pins 30. Link members 12 at the same time slide inwardly into the hollow interior of attaching member 19. Thus, in the storage position, link members 12 are concealed within attaching members 19.

FIGURE 1 shows a side elevation of the handle with the grip member 1 in the raised, carrying position. The relative positions of the grip member 1, link members 12 and attaching members 19 are clearly shown. The broken lines in FIGURE 1 also illustrate the relative position of grip member 1', link members 12' and attaching members 19, when grip member 1' is disposed in the storage position.

Attaching members 19 and grip member 1 have similar cross-sectional shapes. Furthermore, they are constructed so that when grip member 1 is in the collapsed or storage position, the adjacent faces 23, 31 of attaching members 19 and grip member 1 are substantially parallel to each other. Additional projecting faces 32 are provided on link members 12 whereby, when grip member 1 is in the collapsed or storage position, projecting faces 32 fill the cut away portions of tops 22 of attaching members 19. Thus, when the grip member 1 is in the storage position, the handle forms an attractive, substantially smoothly contoured, compact unit closely adjacent to the luggage to which it is attached, with no dirt collecting cavities.

The present novel handle is non-jammable. The ends of link members 12 are rounded so as to form smooth surfaces 33, 34 between the bottoms and top surfaces of said link members. Thus, when grip member 1 is moved downwardly from the raised luggage carrying position (as in FIGURE 1), link members 12 smoothly slide into attaching members 19 without catching against member 19 or the luggage 21. Jamming does not occur even where only one end of the grip member is lowered.

It will be seen that the instant invention affords a novel handle wherein the grip portion is readily movable in a novel and expeditious manner between a raised luggage carrying position, wherein the hand grip thereof is disposed a sufficient distance from the article to be carried that it may be readily grasped by the person carrying the article, and a lowered storage position in which it may be disposed when the article is not being carried. Moreover, the structure of the grip member 1 is such that it is elastic and resilient so that pressure against it from above in the central portion will cause said portion to be depressed and said portion will restore to its initial position when the pressure is relieved, all without damage to the handle or the handle assembly.

Another important feature of the invention resides in the fact that the dog-leg link members are relatively wide, each being around $\frac{1}{4}$ inch to $\frac{3}{8}$ inch in width. Since the attaching members are at least twice this width (e.g., $\frac{3}{4}$ inch), the combination of the two produces an unusually strong handle structure. The strength is further

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enhanced by the fact that there is only one relatively heavy link member on each end of the handle.

While the preferred embodiment has been described, it is to be understood that the present invention is capable of variation and modification; and therefore, it is not limited to the precise details set forth herein, but extends to such changes and alterations as fall within the purview of the following claims.

The invention is hereby claimed as follows:

1. A collapsible handle for luggage and the like comprising

(a) an elongated grip member with a recess formed in each end thereof,

(b) a reinforcing member passing longitudinally through said grip member from one end thereof to the other, said reinforcing member embodying a flexible metal strip extending longitudinally to points adjacent the ends of said grip member and also embodying metal tabs extending downwardly from each side of said metal strip at each end thereof and forming pairs of opposing aligned tabs adjacent the sides of said recesses in said grip member, and link-attaching members on respective pairs of said tabs,

(c) a pair of dog-leg shaped link members, each, respectively, pivotally attached to said link attaching member within each of said recesses, each of said link members having therein a slot extending laterally from one side of said link member to the other and longitudinally from the central portion of said link member substantially to the end thereof away from said grip member,

(d) a pair of substantially hollow attaching members, one disposed at each end of said grip member, part of the top and face of each of said attaching members adjacent to said grip member being removed to provide an opening in the face and top of each said attaching member, each said link member being receivable within the substantially hollow interior portion of the corresponding attaching member,

(e) means for mounting said attaching members on an article of luggage and the like, and

(f) a pair of link pin members, one passing through each of said attaching members and the slot in the corresponding link member, whereby said link members slidably and pivotally move in and out of the substantially hollow interior portion of said attaching members when said grip member is moved between a raised carrying position and a collapsed position.

2. A collapsible handle for luggage and the like comprising

(a) an elongated grip member with a recess formed in each end thereof, the ends of said grip member sloping downwardly and inwardly,

(b) a reinforcing member passing longitudinally through said grip member from one end thereof to the other, said reinforcing member embodying a flexible metal strip extending longitudinally to points adjacent the ends of said grip member and also embodying metal tabs extending downwardly from each side of said metal strip at each end thereof and forming pairs of opposing aligned tabs adjacent the sides of said recesses in said grip member, and a pin extending between each respective pair of said tabs,

(c) a pair of relatively wide dog-leg shaped link members, each, respectively, pivotally attached to one of said pins within each of said recesses, each of said link members having therein a slot extending laterally from one side of said link member to the other and longitudinally from the central portion of said link member substantially to the end thereof away from said grip member,

(d) a pair of substantially hollow attaching members,

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one disposed at each end of said grip member, the faces of said attaching members adjacent to the ends of said grip member being substantially parallel thereto, said grip member and said attaching members having substantially the same cross-sectional shapes, part of the tops and said faces of said attaching members being cut away, said link members thereby being receivable within the substantially hollow interior portions of the corresponding attaching members, each of said link members having a projecting face positioned to substantially fill the cut away portion of the top of the corresponding attaching member when said link member is positioned within the substantially hollow interior portion of said attaching member,

(e) means for mounting said attaching members on and article of luggage and the like, and

(f) a pair of link pin members, one passing through each of said attaching members and the slot in the corresponding link member, whereby said link members slidably and pivotally move in and out of the substantially hollow interior portion of said attaching members when said grip member is moved between a raised carrying position and a lowered collapsed position.

3. In a handle for luggage and the like, an elongated molded grip member having a recess formed in each end thereof which opens outwardly and downwardly, a flexible metal strip imbedded in said grip member extending longitudinally to points adjacent the ends of said grip member, and metal tabs integral with said metal strip extending downwardly from each side of said metal strip at each end thereof forming pairs of opposing aligned tabs adjacent the sides of said recesses in said grip member.

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4. A collapsible handle for luggage and the like comprising

(a) an elongated grip member with a recess formed in each end thereof,

(b) a dog-leg shaped link member at each end of said grip member,

(c) means pivotally mounting one end of each of said link members in a respective one of said recesses,

(d) each of said link members having an elongated slot extending laterally therethrough from one side to the opposite side and longitudinally from the central portion toward the opposite end of said link member,

(e) a substantially hollow attaching member at each end of said grip member, each attaching member having a slot defining an opening in a face facing said grip member and in a part of the top of said attaching member contiguous thereto, said opposite end of each of said link members extending through said slot and being receivable within the substantially hollow interior of portion of the respective attaching member, and

(f) the portion of said dog-leg shaped link member at the apex of the bend in said link member substantially filling the slot in said part of said top of said attaching member when the handle is in collapsed position.

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