

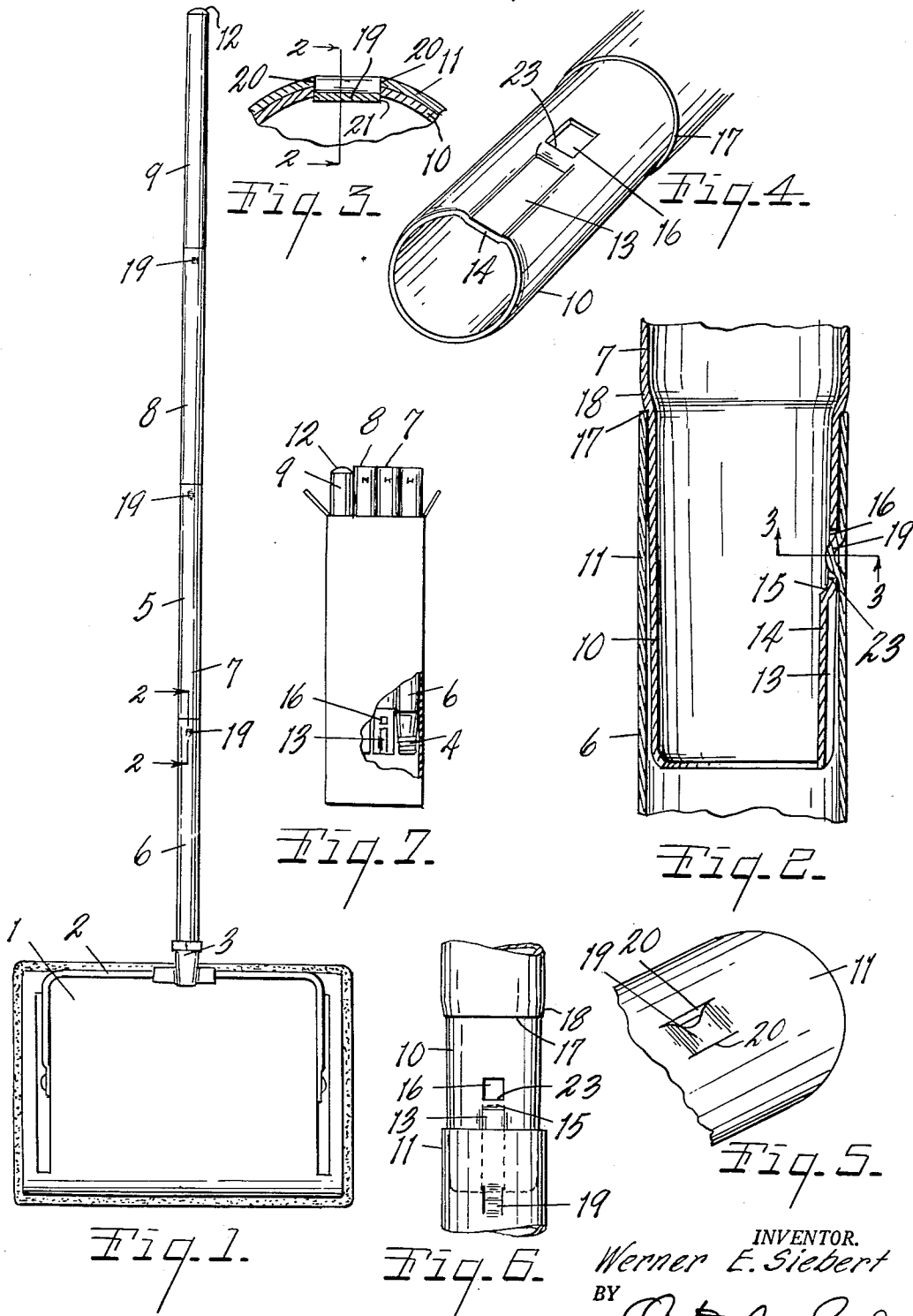
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W. E. SIEBERT

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TUBULAR SECTIONAL HANDLE WITH INTERLOCKING MEANS

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INVENTOR.  
Werner E. Siebert  
BY  
*Arthur A. Carl*  
Attorney.

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**TUBULAR SECTIONAL HANDLE WITH INTERLOCKING MEANS**

Werner E. Siebert, Grand Rapids, Mich., assignor to Bissell Carpet Sweeper Company, Grand Rapids, Mich.

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This invention relates to a sectional implement handle which is adapted for use as a handle for carpet sweepers, floor brushes, wall brushes, mops and the like.

The main objects of this invention are:

First, to provide a tubular metal implement handle which may be shipped in the knock-down or disassembled form and quickly assembled by an unskilled person and one which when assembled is very difficult to disassemble without substantially destroying the handle.

Second, to provide a sectional handle having these advantages in which the sections may be coated or finished, for example, with metal paint and the finish is not destroyed or injured in the assembling.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a plan view of a carpet sweeper mainly conventionally shown with a handle embodying my invention, the handle being shown in lowered position.

Fig. 2 is an enlarged fragmentary longitudinal section on a line corresponding to 2—2 of Fig. 1 showing details of the joint between the sections.

Fig. 3 is a fragmentary view in transverse section on a line corresponding to 3—3 of Fig. 2.

Fig. 4 is a fragmentary perspective view of the dowel end of one of the sections.

Fig. 5 is a fragmentary perspective view of the socket end of a section.

Fig. 6 is a fragmentary elevational view illustrating certain steps in the assembly of the sections.

Fig. 7 is a side elevational view of a package with the handle partially telescoped therein illustrating the manner of assembly for storage and shipment.

It is a matter of common experience and observation that the packaging and delivery of implements such as carpet sweepers, mops, floor and wall brushes and the like which are provided with handles of considerable length in individual packages or cartons has been greatly handicapped by the fact that it is not practical to include the handle with the implement but it must be separately packaged or handled. This greatly adds to the expense and frequently results in incomplete delivery to the final customer.

The handle of the applicant's invention is formed of sections which may be compactly assembled for packaging and shipment and quickly and easily set up by a relatively unskilled person and one when assembled cannot be disassembled without exerting more force than is commonly available or without practically destroying the handle.

In the accompanying drawing 1 represents a carpet sweeper mainly shown in conventional form and provided with a bail 2 having a handle receiving socket 3 which is commonly internally threaded and adapted to receive the threaded end 4 of the handle, designated generally by the numeral 5.

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While I illustrate a carpet sweeper it will be understood that the handle of my invention is adapted for use in various implements and is particularly desirable for implements such as mops, floor brushes, wall brushes and the like which require handles of considerable length or of a length greatly exceeding the longest dimension of the implement with which the handle is used.

The handle 5 illustrated is made up of sections 6, 7, 8 and 9. It will be understood that the number of sections may be varied according to the length of the handle required but desirably the length of the sections does not substantially exceed the longest dimension of the implement with which the handle is to be used.

The sections may be formed of drawn tubing but desirably for economy of rolled welded stock. The joints of the rolled stock are not illustrated as they form no part of this invention and are not observable at least externally in the finished handle. The sections 7, 8 and 9 are provided with dowel portions 10 at one end and the sections 6, 7 and 8 have socket portions 11 adapted to telescopingly receive the dowel portions 10. The section 9 is the outer or top section and has a closure cap 12. The section 6 is tapered and threaded at 4 to engage a socket as 3 of the implement. The walls of the sections are of uniform thickness and of uniform diameter from end to end except as hereinafter pointed out. One end of each section 7, 8 and 9 is reduced desirably by means of a suitable compressing die into which the section is forced endwise to provide the dowel 10 which are perfectly tapered to facilitate the die forming thereof and also the assembling of the sections. The taper is shown considerably exaggerated in Fig. 2 to facilitate illustration.

The dowels are provided with longitudinally extending grooves 13 formed by inseting a portion 14 of the wall of the dowel. This groove is open at its outer end and terminates at its inner end in the curved wall portion 15. An opening 16 desirably rectangular and of the same width as the groove is formed in the dowel in alignment with the groove. The wall portion 15 constitutes a keeper element. The adjacent end of the adjacent section, as stated, constitutes a socket 11 for the dowel. The dowel is formed to provide an abrupt external shoulder 17, there being a slight curved portion 18 merging into the wall of the section. This however is the result of the compressing action in forming the dowel and is not noticeable when the sections are telescoped together.

The socket members have loop like lugs 19 struck inwardly therefrom, the walls of the socket having longitudinal slits 20 formed therein and the portions between the slits being struck inwardly providing lugs which are longitudinally curved but have parallel edges 21 which closely fit the edges of the openings 16. These lugs are not springable in themselves and when they are engaged in the openings the keeper elements effectively prevent separations of the sections under any force that can ordinarily be manually applied thereto and they effectively prevent rotating movement of one section relative to the adjacent sections.

In assembling the sections they are disposed with the dowel of one section within the socket of an adjacent section as illustrated in Fig. 6 and with the lugs in alignment with the groove and the sections are telescoped as far as convenient with the hands. Desirably all the sections are thus arranged. The joints are then completely telescoped by grasping the outer section and striking the inner section against some object placed upon the floor or some other support until all the joints are completely telescoped. It is not necessary to use a hammer or impact tool in doing this. However, when the joints are completely telescoped it is practically impossible to disassemble the sections by manual longitudinal

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pull and the lugs cannot be disengaged from the openings by relative twisting or turning of the sections.

While the lug is not springable in itself the longitudinal curving of the lug and the curving of the wall 15 at the inner end of the groove facilitates the engaging of the parts but the keeper element presents a sharp surface or edge 23 to resist disengaging movement and the edges 22 engaging the edges 20 of the opening prevent rotative movement.

While the lug is not springable or substantially springable the walls of telescoping parts, that is, the socket and dowel appear to springably yield sufficiently to permit the engagement of the parts but effectively resist the disengagement thereof.

My present invention is an improvement on the handle of my application for Letters Patent, Serial No. 306,548, filed August 27, 1952. While the structure of that application is highly desirable the sections may be disengaged by a rotative movement which results in disengaging the springable detent of that structure from the keeper. In the structure of my present invention that manipulation is not possible as the parts cannot be rotated relative to each other.

I have illustrated and described my invention in a practical commercial embodiment thereof. I have not attempted to illustrate or describe other embodiments as it is believed that this disclosure will enable those skilled in the art to embody or adapt the invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A sectional handle comprising a plurality of like tubular metal sections having an integral portion at one end of reduced diameter and of slight outward taper constituting a dowel, the other end constituting a dowel socket telescopingly receiving the dowel of an adjacent section, the reduction at the base of the dowel corresponding to the thickness of the walls of the sections, there being an abrupt external shoulder at the base of the dowel, and an elongated longitudinally extending segment portion of uniform width of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end, the wall at the inner end of the groove being axially outwardly curved, the dowel having a rectangular opening therein aligned with and of a width corresponding to the width of the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a loop-like substantially nonspringable longitudinally curved inwardly projecting lug having parallel side edges struck inwardly from the wall thereof to fittingly engage in said opening when the coating dowel is in fully telescoped position with the end of the socket portion abutting the shoulder at the base of the dowel, the groove of the dowel member coating with the lug to guide the parts into telescoping interlocking engagement, the walls of the socket and dowel being continuous but springably yieldable when telescoping driving force is applied thereto to permit the nonspringable lug to pass the keeper element.

2. A sectional handle comprising a plurality of like tubular metal sections having an integral portion at one end of reduced diameter constituting a dowel, the other end constituting a dowel socket telescopingly receiving the dowel of an adjacent section, and an elongated longitudinally extending portion of uniform width of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the wall at the inner end of the groove being axially outwardly curved, the dowel having a rectangular opening therein aligned with and of a width corresponding to the width of the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a loop-like substantially nonspringable

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longitudinally curved inwardly projecting lug having parallel side edges struck inwardly from the wall thereof to fittingly engage in said opening when the coating dowel is in fully telescoped position, the groove of the dowel member coating with the lug to guide the parts into telescoping interlocking engagement, the walls of the socket and dowel being continuous but springably yieldable when telescoping driving force is applied thereto to permit the nonspringable lug to pass the keeper element.

3. A sectional handle comprising a plurality of like tubular metal sections having an integral portion at one end of reduced diameter and of slight outward taper constituting a dowel, the other end constituting a dowel socket telescopingly receiving the dowel of an adjacent section, the reduction at the base of the dowel corresponding to the thickness of the walls of the sections, there being an abrupt external shoulder at the base of the dowel, and an elongated longitudinally extending portion of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the dowel having an opening therein aligned with the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a substantially nonspringable lug struck inwardly therefrom to engage in said opening when the coating dowel is in fully telescoped position with the end of the socket portion abutting the shoulder at the base of the dowel, the groove of the dowel member coating with the lug to guide the parts into telescoping interlocking engagement, the walls of the socket and dowel being continuous but springably yieldable when the sections are subjected to telescoping driving force to permit the nonspringable lug to pass the keeper element.

4. A sectional handle comprising a plurality of like tubular metal sections having an integral portion at one end of reduced diameter constituting a dowel, the other end constituting a dowel socket telescopingly receiving the dowel of an adjacent section, and an elongated longitudinally extending portion of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the dowel having an opening therein aligned with the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a substantially nonspringable lug struck inwardly therefrom to engage in said opening when the coating dowel is in fully telescoped position, the groove of the dowel member coating with the lug to guide the parts into telescoping interlocking engagement, the walls of the socket and dowel being continuous but springably yieldable when the sections are subjected to telescoping driving force to permit the nonspringable lug to pass the keeper element.

5. A sectional handle comprising, coating tubular metal sections having walls of substantially uniform thickness, one section of an adjacent pair having an integral portion at one end of reduced diameter and of slight outward taper constituting a dowel, the adjacent end of the other section of the pair constituting a dowel socket telescopingly receiving the dowel, the reduction at the base of the dowel corresponding to the thickness of the walls of the sections, there being an abrupt external shoulder at the base of the dowel, and an elongated longitudinally extending portion of uniform width of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the wall at the inner end of the groove being axially outwardly curved, the dowel having a rectangular opening therein aligned with and of a width corresponding to the width of the groove, the portion of the wall between the inner

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end of the groove and said opening constituting a keeper element, the socket portion having a loop-like substantially nonspringable longitudinally curved lug having parallel side edges struck inwardly from the wall thereof and aligned with said groove to fittingly engage in said opening when the dowel is in fully telescoped position within the socket portion with the end of the socket portion abutting the shoulder at the base of the dowel, the groove of the dowel member coacting with the lug to guide the parts into telescoping interlocking engagement, the walls of the sections being continuous but springably yieldable under telescoping force to permit the lug to pass the keeper element.

6. A sectional handle comprising, coating tubular metal sections having walls of substantially uniform thickness, one section of an adjacent pair having an integral portion at one end of reduced diameter constituting a dowel, the adjacent end of the other section of the pair constituting a dowel socket telescopically receiving the dowel, and an elongated longitudinally extending portion of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the wall at the inner end of the groove being axially outwardly curved, the dowel having a rectangular opening therein aligned with and of a width corresponding to the width of the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a loop-like substantially nonspringable longitudinally curved lug having parallel side edges struck inwardly from the wall thereof and aligned with said groove to fittingly engage in said opening when the dowel is in fully telescoped position within the socket portion with the end of the socket portion abutting the shoulder at the base of the dowel, the groove of the dowel member coacting with the lug to guide the parts into telescoping interlocking engagement, the walls of the sections being continuous but springably yieldable under telescoping force to permit the lug to pass the keeper element.

7. A sectional handle comprising, coating tubular metal sections having walls of substantially uniform thickness, one section of an adjacent pair having an integral portion at one end of reduced diameter constituting a dowel, the adjacent end of the other section of the pair constituting a dowel socket telescopically receiving the dowel, and an elongated longitudinally extending portion of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the wall at the inner end of the groove being axially outwardly curved, the dowel having a rectangular opening therein aligned with and of a width corresponding to the width of the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a loop-like substantially nonspringable longitudinally curved lug having parallel side edges struck inwardly from the wall thereof and aligned with said

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groove to fittingly engage in said opening, the groove of the dowel member coacting with the lug to guide the parts into telescoping interlocking engagement, the walls of the sections being continuous but springably yieldable under telescoping force to permit the lug to pass the keeper element.

8. A sectional handle comprising, coating tubular metal sections, one section of an adjacent pair having an integral portion at one end of reduced diameter and of slight outward taper constituting a dowel, the adjacent end of the other section of the pair constituting a dowel socket telescopically receiving the dowel, the reduction at the base of the dowel corresponding to the thickness of the walls of the sections, there being an abrupt external shoulder at the base of the dowel, and an elongated longitudinally extending portion of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the dowel having an opening therein aligned with the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a substantially nonspringable lug struck inwardly from the wall thereof and aligned with said groove to engage in said opening when the dowel is in fully telescoped position within the socket portion with the end of the socket portion abutting the shoulder at the base of the dowel, the groove of the dowel member coacting with the lug to guide the parts into telescoping interlocking engagement.

9. A sectional handle, coating tubular metal sections, one section of an adjacent pair having an integral portion at one end of reduced diameter, the adjacent end of the other section of the pair constituting a dowel socket telescopically receiving the dowel, and an elongated longitudinally extending portion of the wall of the dowel being struck inwardly providing an external longitudinal groove open at its outer end and closed at its inner end, the dowel having an opening therein aligned with the groove, the portion of the wall between the inner end of the groove and said opening constituting a keeper element, the socket portion having a substantially nonspringable lug struck inwardly from the wall thereof and aligned with said groove to engage in said opening when the dowel is in fully telescoped position within the socket portion, the groove of the dowel member coacting with the lug to guide the parts into telescoping interlocking engagement.

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