

Sept. 7, 1954

E. C. BINGGELY

2,688,408

UTILITY STAND FOR SUCTION CLEANER TOOLS

Filed May 28, 1949

9 Sheets-Sheet 1

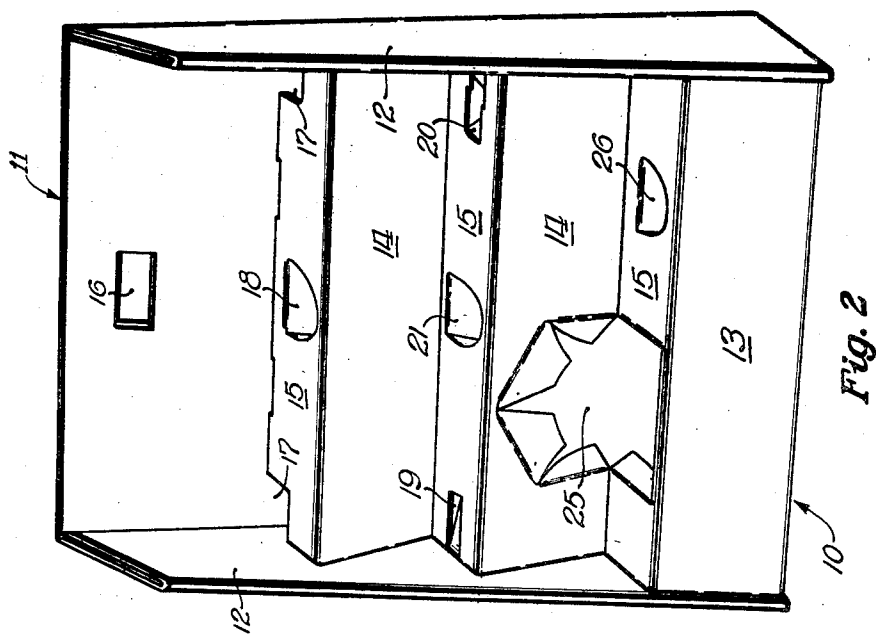


Fig. 2

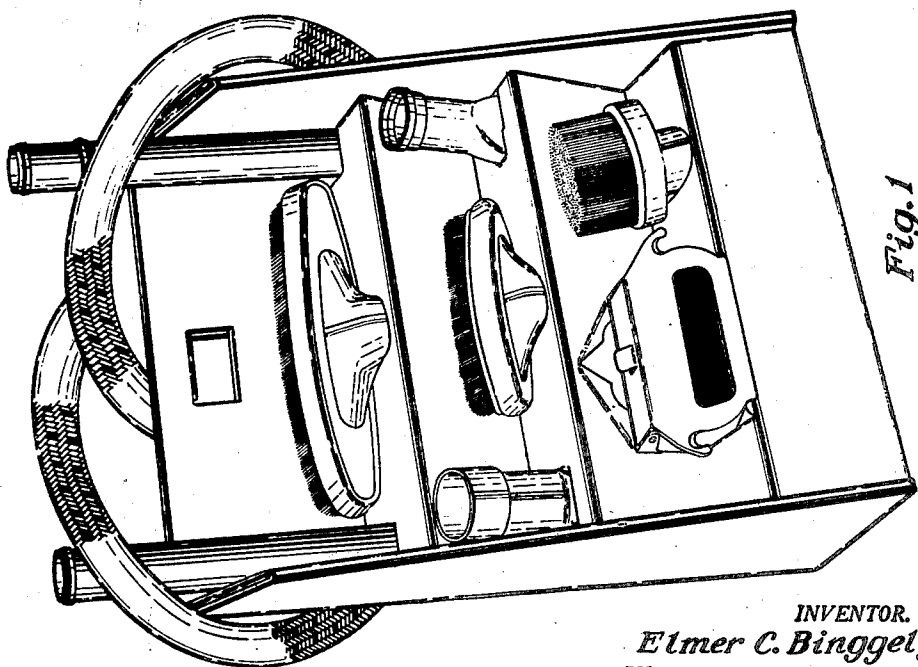


Fig. 1

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9 Sheets-Sheet 2

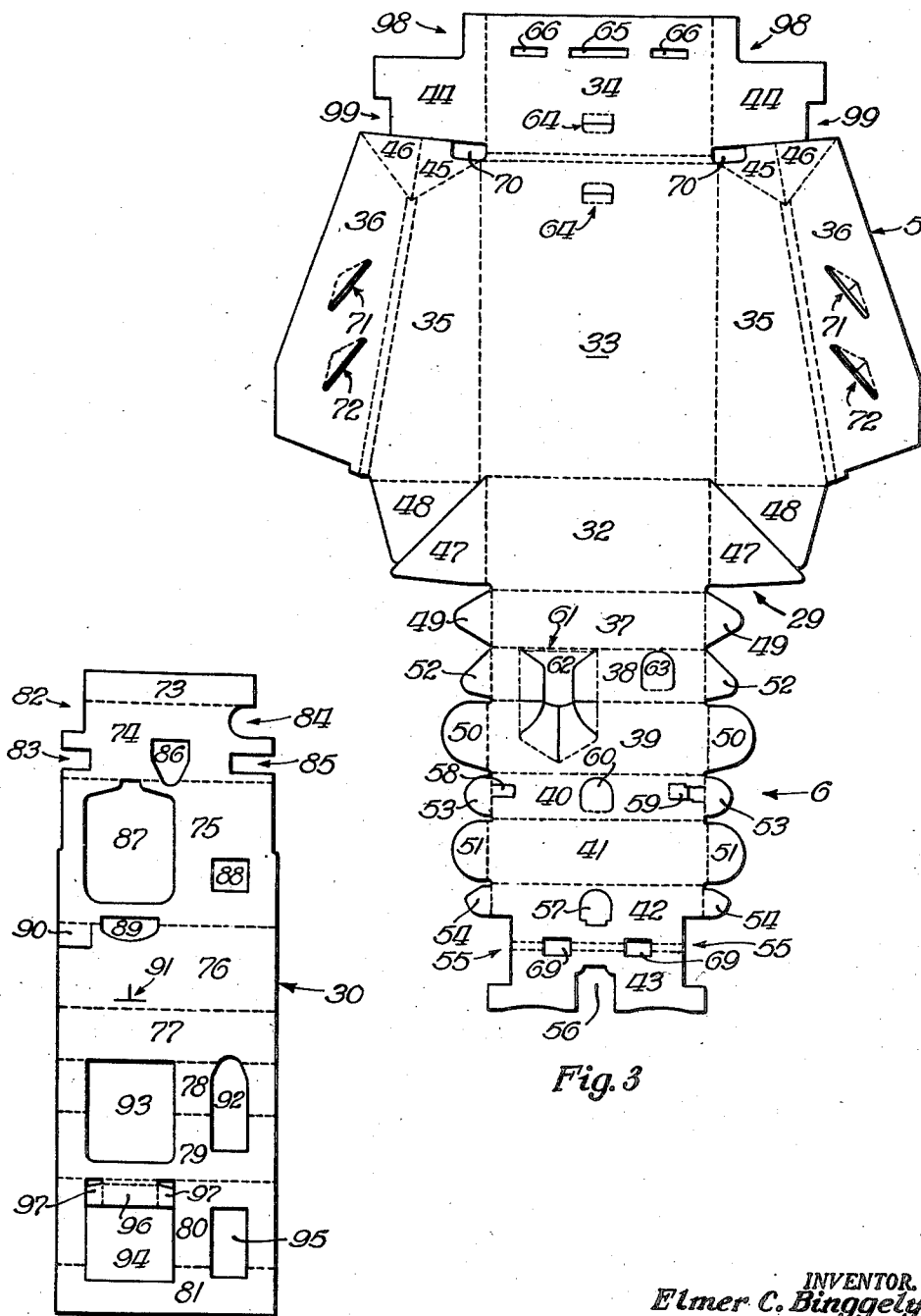


Fig. 3

Fig. 4

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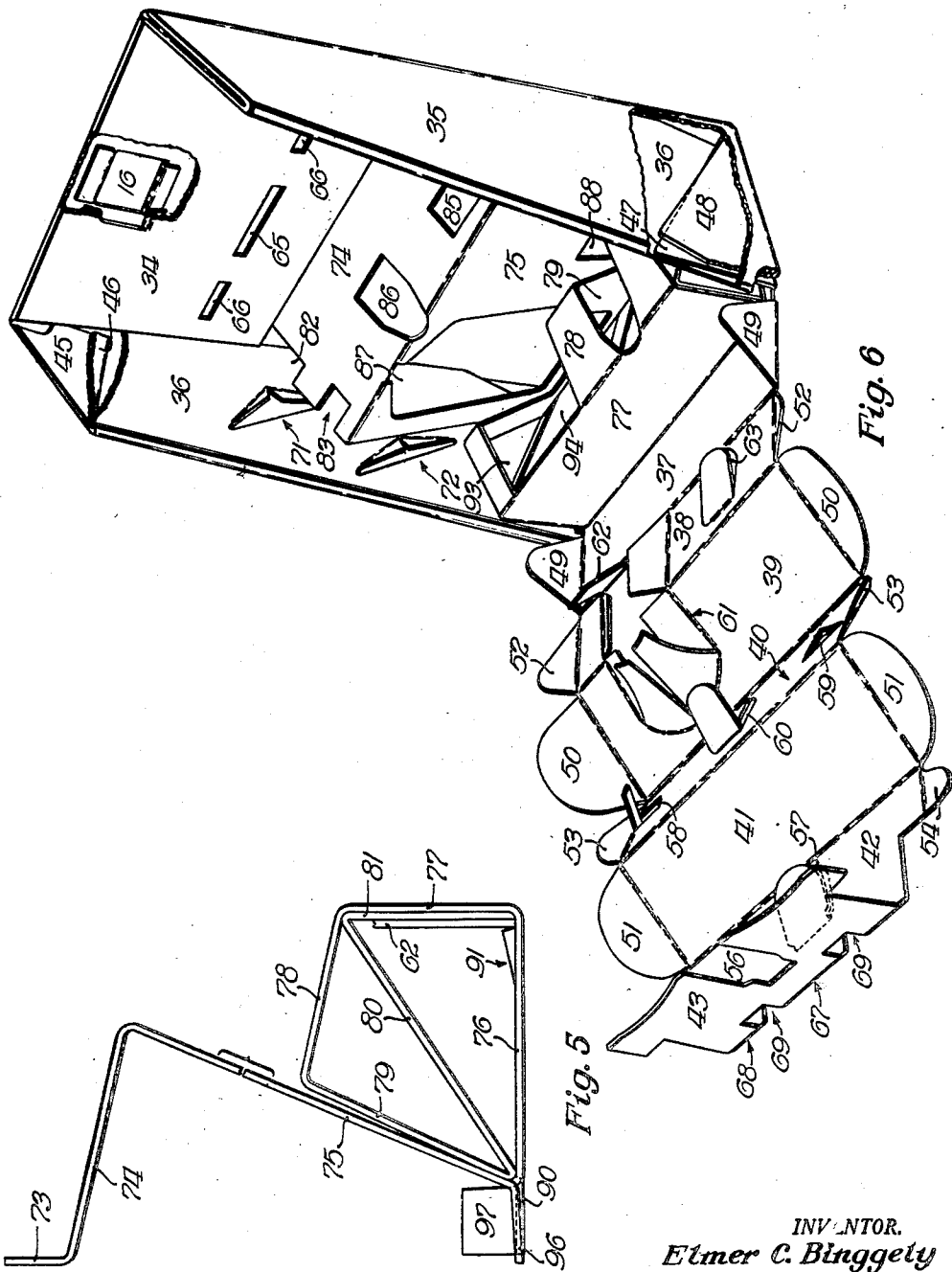


Fig. 5

Fig. 6

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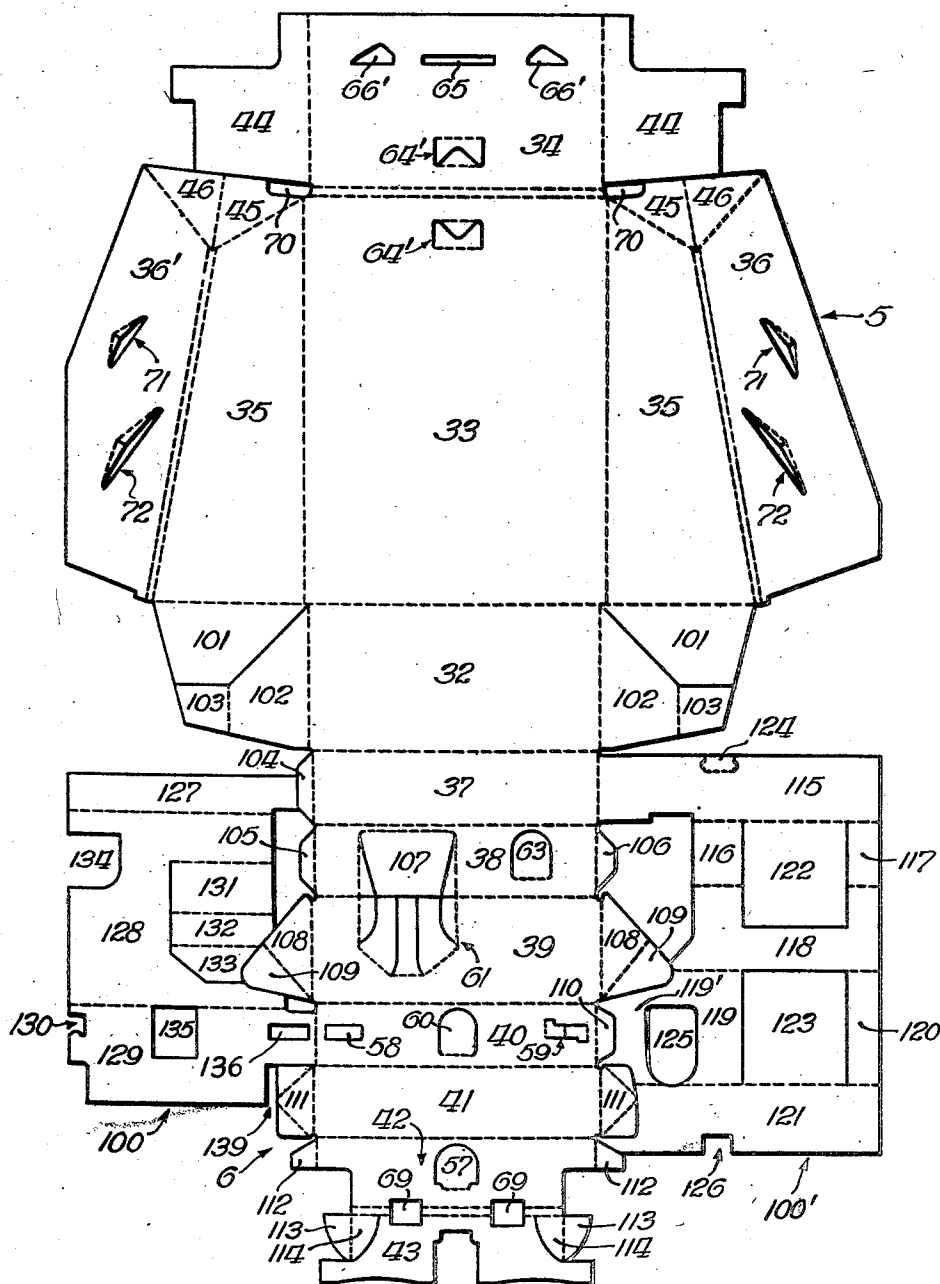


Fig. 7

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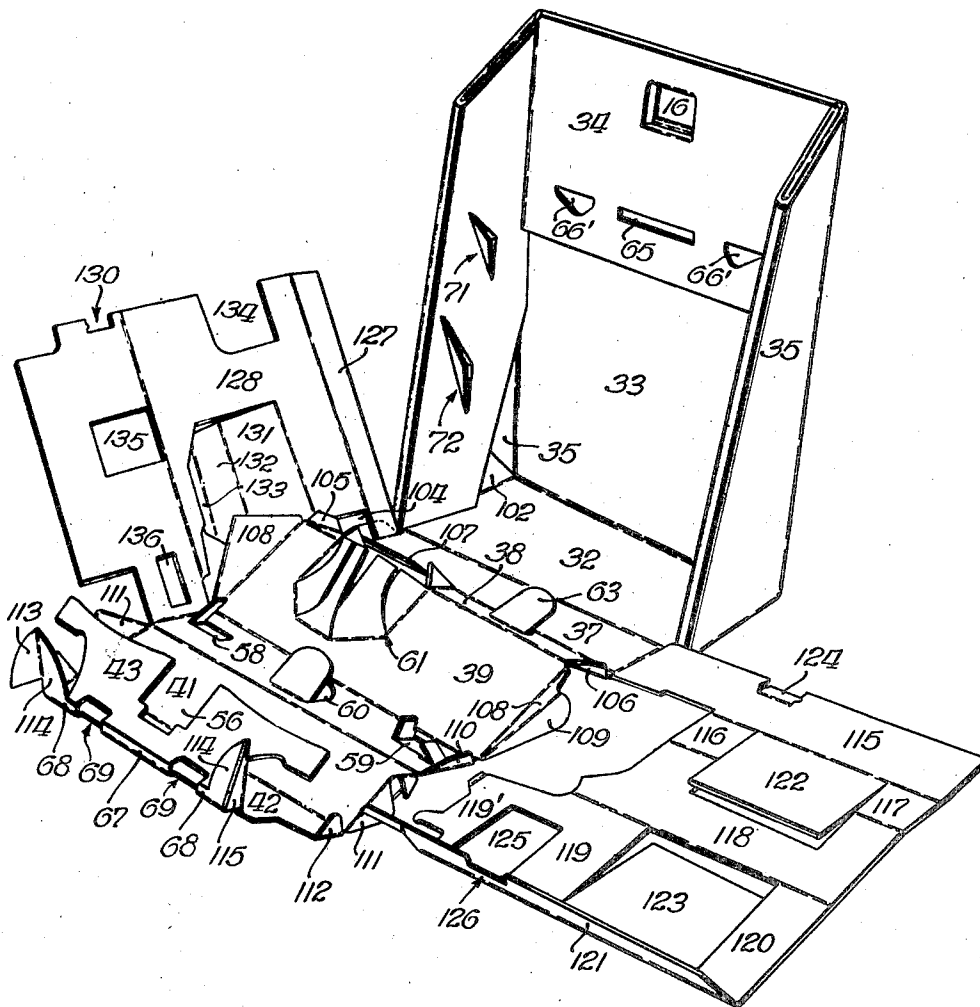


Fig. 8

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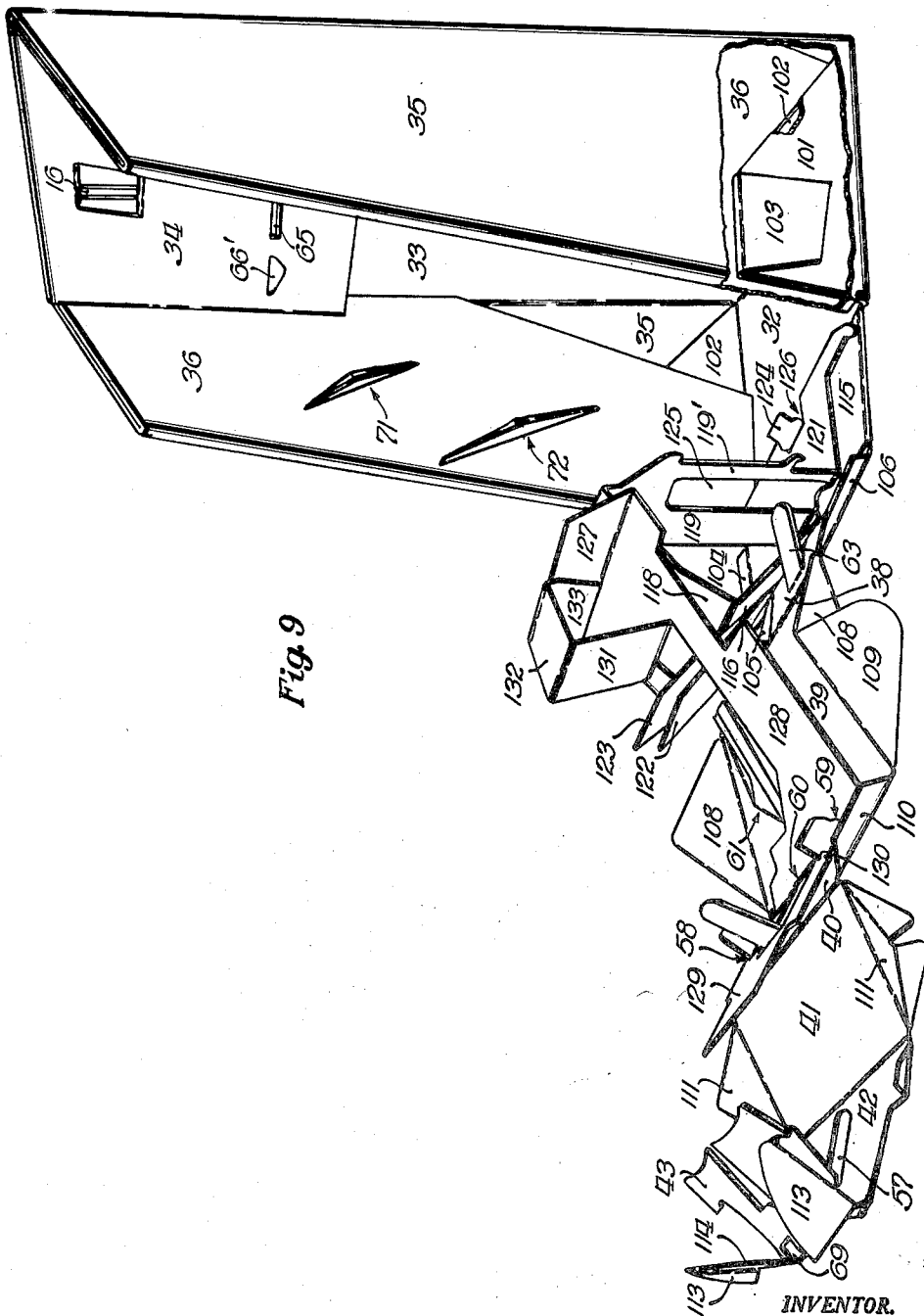
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UTILITY STAND FOR SUCTION CLEANER TOOLS

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9 Sheets-Sheet 6



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UTILITY STAND FOR SUCTION CLEANER TOOLS

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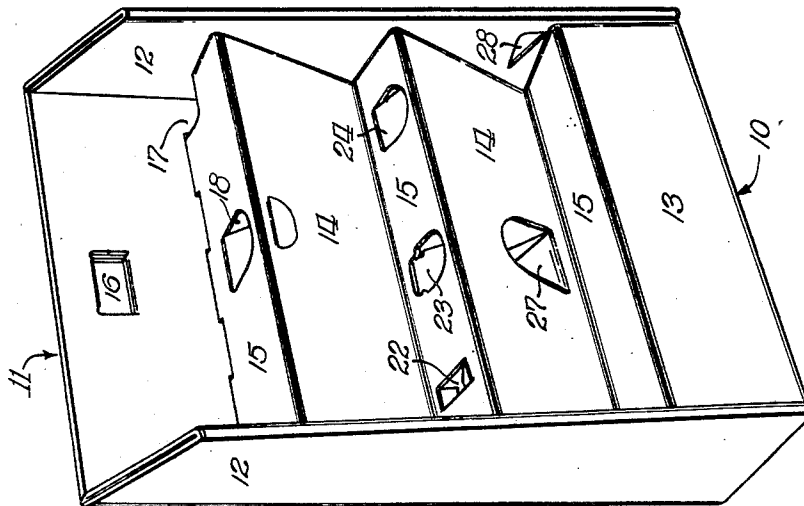


Fig. 11

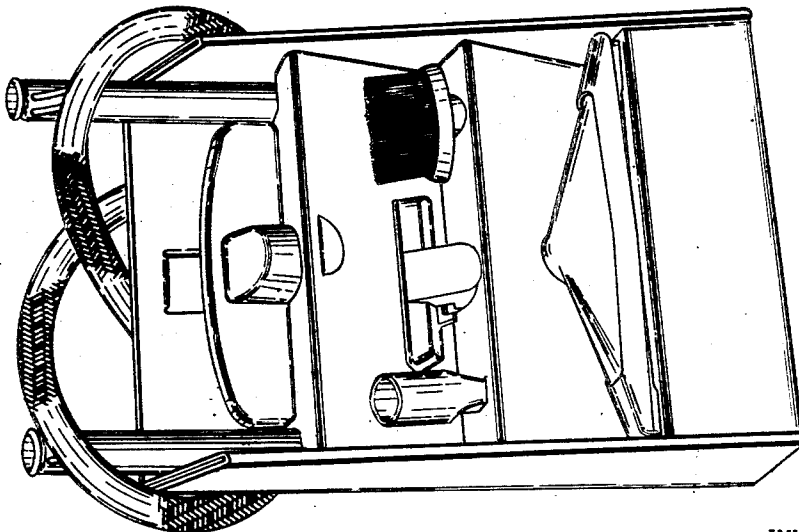


Fig. 10

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UTILITY STAND FOR SUCTION CLEANER TOOLS

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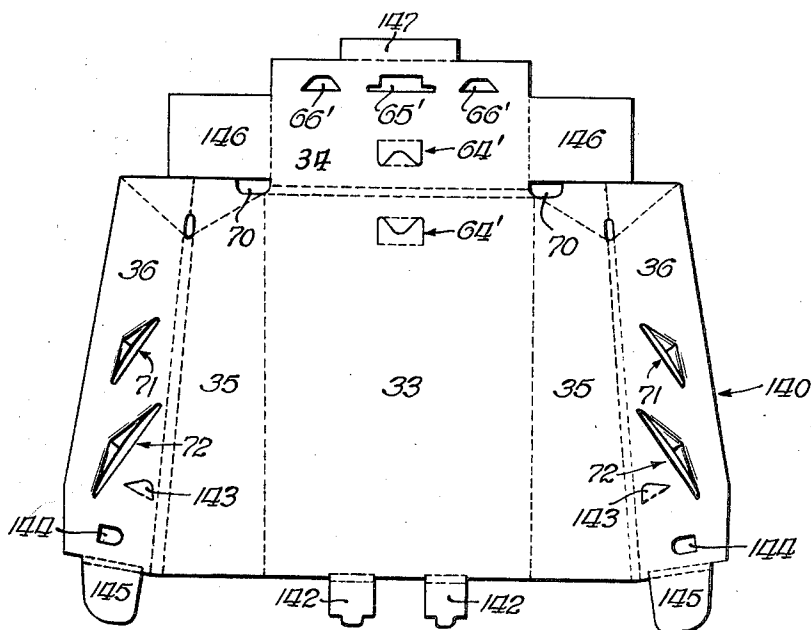


Fig. 13

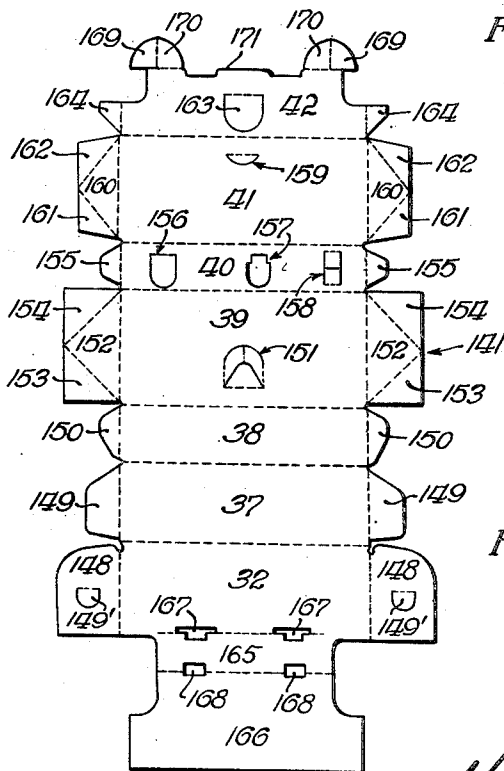


Fig. 12

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UTILITY STAND FOR SUCTION CLEANER TOOLS

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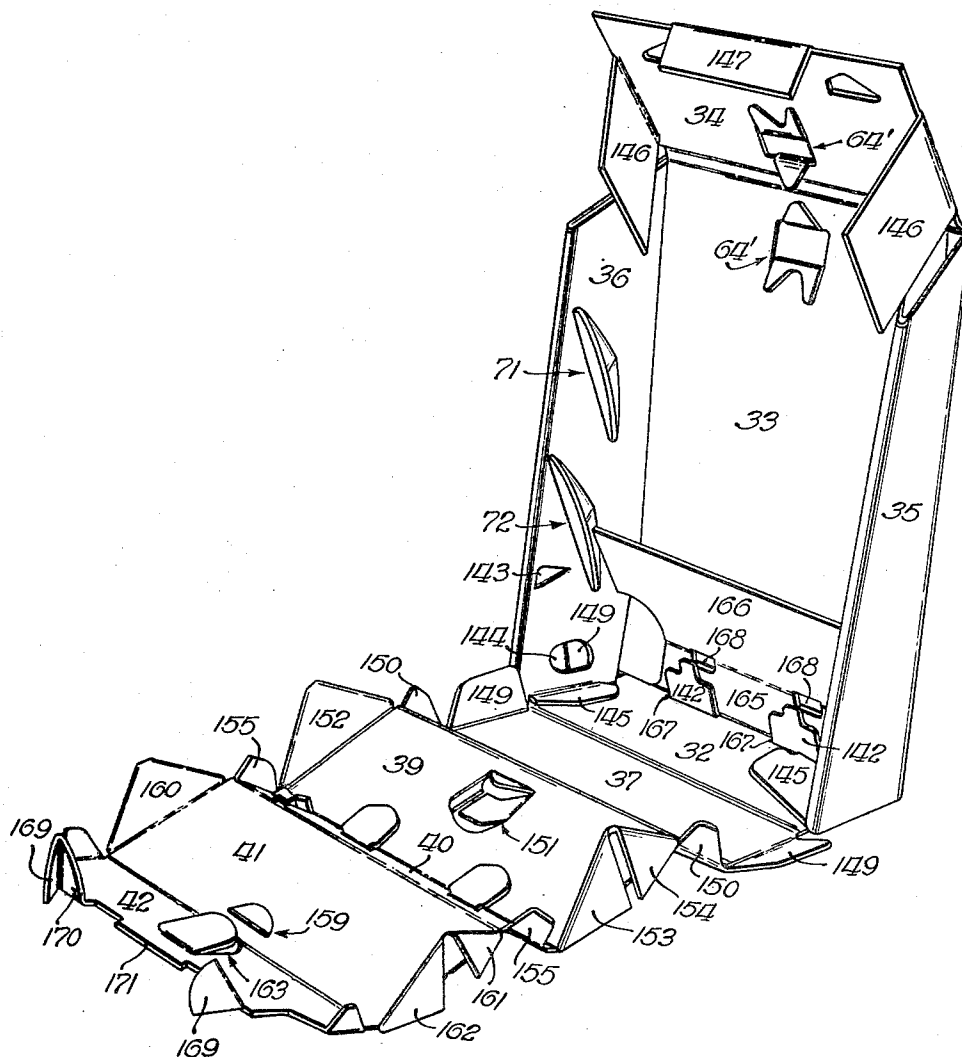


Fig. 14

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UNITED STATES PATENT OFFICE

2,688,408

UTILITY STAND FOR SUCTION CLEANER
TOOLS

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Hoover Company, North Canton, Ohio, a cor-
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Continuation of application Serial No. 19,964,
April 9, 1948. This application May 28, 1949,
Serial No. 96,125

11 Claims. (Cl. 211-137)

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This invention relates to utility stands and more particularly to a stand for holding accessory tools for suction cleaners. The stands are provided with pockets for receiving the various implements, a base upon which it may be supported to hold the various implements in a readily accessible position when being used and for supporting the implements for display purposes and an opening in the back panel near its upper end whereby the stand and implements may be easily transported from place to place or hung on a hook for storage or display.

The stands are made from a blank or blanks of plain or corrugated cardboard suitably cut and creased to form support and reinforcing panels, spacing flaps, locking tabs, implement receiving openings, etc., whereby the blank or blanks may be folded into a rigid stand without the use of separate fasteners.

According to one feature of this invention is a reinforcement for the stand which renders it specially useful as a shipping container for the implements. The reinforcement includes a strut extending from the base of the stand upwardly and forwardly to the forward hinge line between each of the lower two shelves and its supporting riser. According to one modification the reinforcement is formed integrally with the blank forming the stand proper and according to another modification it is formed from a separate blank whereby it may be omitted if desired.

The paper stock is finished only on one side and the blanks are so cut and creased that when folded into the finished stands the entire stand will have the finished side of the stock positioned outwardly. If desired suitable indicia may be placed on the finished side of the stock in such position as to instruct the user where the various implements are to be placed. The stock forming the back of the stand may have instructions placed thereon as to the method of using the various implements.

Other objects and advantages of this invention will become apparent as the description proceeds when taken in connection with the accompanying drawings in which:

Figure 1 is a perspective view of a completed utility stand according to the first two modifications with the various implements in place;

Figure 2 is a perspective view of the stand of Fig. 1 with the implements removed to show the various implement receiving openings;

Figure 3 shows the main stand forming blank of the first modification;

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Figure 4 shows the reinforcing blank of the first modification;

Figure 5 shows the blank of Fig. 4 in its final folded position preliminary to its assembly with the stand;

Figure 6 is a perspective view of the first modification partially assembled with the reinforcement of Fig. 5 in place;

Figure 7 shows the blank of the second modification;

Figure 8 is a perspective view showing the blank of Fig. 7 partially folded in a first preliminary stage of assembly;

Figure 9 is a perspective view showing the blank of Fig. 7 in a second preliminary stage of assembly;

Figure 10 is a perspective view of the completed stand of the third modification with the various implements in place;

Figure 11 is a perspective view of the stand of Fig. 10 with the implements removed to show the implement receiving openings;

Figure 12 shows the blank forming the bottom shelves and risers of the third modification;

Figure 13 shows the blank forming the back and side walls of the third modification; and

Figure 14 is a perspective view of the third modification in a preliminary stage of assembly.

This application is a continuation of my co-pending application, Serial No. 19,964, filed April 9, 1948, now abandoned.

Description of the completed stand

The stand of Figs. 1 and 2 is specially constructed for supporting the various implements usable with an on-the-floor type cleaner when it is converted for off-the-floor cleaning. The stand of Figs. 10 and 11 is specially constructed for supporting the various implements usable with a tank type cleaner.

Referring to the drawings and particularly to Figs. 2 and 11, the completed utility stand of all modifications comprises a base 10 upon which the stand may be supported in upright position, a back wall 11, a pair of end walls 12, lower vertically extending riser 13, two superposed inclined risers 14 above the lower riser, and three superposed shelves 15. The back wall 11 is provided with an opening 16 for use in carrying the stand about or for hanging it up for storage or display purposes.

The finished stand of the first and second modifications is shown in Fig. 2 and that of the third modification is shown in Fig. 11. In each modification the upper shelf is provided with side

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openings 17 to receive sections of a wand which connect the suction hose to the cleaning tool and a central opening 18 for receiving the shank of a cleaning tool.

In Fig. 2 the middle shelf is provided with side openings 19 and 20 to receive a crevice tool and a converter coupling respectively and a central opening 21 for receiving the shank of another type of cleaning tool. In Fig. 11 the middle shelf is provided with an end opening 22 for receiving a crevice tool, a central opening 23 and an end opening 24 to receive the shanks of different types of cleaning tools.

In Fig. 2 an opening 25 is provided in the lower inclined riser 14 and in the lower shelf 15 for receiving an insecticide dispenser. A second opening 26 is provided in the lower shelf 15 for receiving a cleaning tool. In Fig. 11 the lower inclined riser 14 is provided with an opening 27 for receiving the shank of a floor cleaning tool while the side walls 12 are provided with openings 28 for receiving ends of the floor tool.

The various parts and openings described above are formed in a manner to be explained hereinafter in connection with the description of the blank or blanks from which the utility stand is made and from the description of the manner of assembling the stand from the blank or blanks.

In each modification the finished stand comprises a base upon which it may be supported for display or use, a back wall which supports the article receiving shelves having an opening near its upper end by which it may be carried about or supported on a hook for display or storage purposes, two side panels of ornamental contour which enclose the shelves and, as will appear hereinafter, help to lock the finished parts in assembled relation, a vertical front riser for supporting the lower shelf, two inclined front risers which help to support the upper two shelves, and three horizontal shelves for supporting various suction cleaning tools.

No reference characters have been applied to Figs. 1 and 10, in which the various tools are shown supported on the stand, since the various parts have been adequately described in the description of Figs. 2 and 11.

In order to simplify the description of the blanks the creased folding or hinge lines and the cut lines will not be described in detail, it being noted that the dotted lines indicate creased folding or hinge lines and the solid lines indicate that the stock material is cut clear through to form edges, apertures, slots and separation lines which form the various panels, locking tabs, etc. of the display stand of this invention.

Description of Figs. 3 to 6

In the first modification shown in Figs. 3 to 6, inclusive, the display stand is formed of a main blank 29 (Fig. 3) and a reinforcing member 30 (Fig. 4). The blank 29 is formed of two sections, the section 5 forming the base, back and side walls of the completed stand and the section 6 forming the shelves and risers.

The blank 29 is cut and scored as shown in Fig. 3 to form a bottom panel 32, a back panel 33, a back lining panel 34, duplicate side panels 35, duplicate side lining panels 36, a vertical riser panel 37, lower shelf panel 38, intermediate inclined panel 39, middle shelf panel 40, upper inclined panel 41, upper shelf panel 42, and a reinforcing panel 43.

The back lining panel 34 is scored and cut as

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shown to form duplicate spacing flaps 44. The side panels 35 and the side lining panels 36 are scored and cut as shown to form spacing tabs 45 and 46. The base panel 32 and the side panels 35 are cut and scored as shown to form duplicate spacing flaps 47 and 48 respectively. The riser panels 37, 39, and 41 are creased and cut to form duplicate locking tabs 49, 50, and 51 respectively. The shelf panels 38, 40, and 42 are cut and creased to form duplicate locking tabs 52, 53, and 54 respectively.

The upper shelf panel 42 and the reinforcing panel 43 are cut to form notches 55 which eventually will form the openings 17 of Fig. 2. Reinforcing panel 43 is notched at 56 and the shelf panel 42 is cut and notched to form an opening 57 which forms the opening 18 of Fig. 2 and its implement retaining tab. The shelf panel 40 is cut and creased as shown at 58, 59, and 60 to form the openings 19, 20, and 21 respectively of Fig. 2 and their implement retaining tabs. The lower shelf panel 38 and the riser panel 39 are cut and creased as shown generally at 61 to form the opening 25 of Fig. 2 and its implement retaining tabs and a locking tab 62. The lower shelf 38 is also cut and creased at 63 to form the opening 26 of Fig. 2 and its implement retaining tab.

The back lining panel 34 and the back panel 33 are cut and creased at 64 to form the opening 16 of Fig. 2. The back lining panel 34 is cut to form a central opening 65 and side openings 66 which receive the folded central sections 67 (Fig. 6) and side folded sections 68 of the upper shelf panel 42 and the reinforcing panel 43 formed between the notches 55 and the openings 69 cut in those panels as shown in Fig. 3.

The flaps 45 are cut to form clearance openings 70 and the side liner panels 36 are cut and creased at 71 and 72 to form openings for receiving the locking tabs 51 and 50 as will presently appear. The locking tabs 44 are notched at 98 and 99 to clear the openings 64, 65, and 66 as will presently appear.

The reinforcing blank 30 of Figs. 4 and 5 includes a riser panel 73, an upper inclined panel 74, a backwardly inclined strut panel 75, a base panel 76, a vertical riser panel 77, a back inclined panel 78, a riser panel 79 extending downwardly in front of the panel 75, a forwardly inclined strut panel 80 and a panel 81 extending downwardly behind the riser panel 77 to the base panel 76.

A notch 82 is cut in the blank 30 and intersects the hinge line between the panels 73 and 74. The panel 74 is notched at 83, 84, and 85 and has an opening 86 cut in its central forward portion. The panel 75 is cut to form openings 87 and 88 and an opening 89 intersects the crease line between panels 75 and 76. The panel 76 is cut and creased to form a spacing tab 90 at 91 as shown for a purpose which will presently appear. An opening 92 intersects the crease lines between panels 77, 78, and 79 and an opening 93 intersects the crease line between panels 78 and 79. Openings 94 and 95 intersect the crease line between panels 80 and 81. The panel 80 is cut and creased as shown to form a small rearwardly extending locking panel 96 and side locking tabs 97.

Assembly of Figs. 2 to 6

The tabs 47 are turned forwardly as viewed in Fig. 3 at right angles to the panel 32, the tabs

48 are turned upwardly 180° to lie against the face of the panels 35, the back panel 33 is turned upwardly at right angles to the base panel 32, tabs 45 and 46 are pushed forwardly into a forwardly extending V-shape and simultaneously the panels 36 are turned inwardly toward the panels 35. During movement of the panels 36 toward the panels 35, the panels 35 are also turned inwardly toward the back panel 33 so that the tabs 47 will enter between the panels 35 and 36. As a result the tabs 47 and 48 will lie against each other between the panels 35 and 36 and the tabs 45 and 46 will lie against each other as shown in the broken away portions of Fig. 6. It is to be noted that the panels 35 and 36 will be spaced apart slightly for a purpose which will presently appear.

The reinforcing blank 30 is then folded into the position shown in Fig. 5 in the following manner: The strut panel 80 is bent at an acute angle to the vertically extending panel 81, it being noted that the fold line between the panels cuts across the opening 94 so that the greater portion of that opening is in the inclined bracing panel 80. The panel 79 is then bent forwardly at an acute angle to the panel 80 as is the small locking panel 96. The panel 78 is then bent forwardly at a slightly obtuse angle to the panel 79, it being noted that the fold line between the panels intersects the opening 93 as clearly shown in Fig. 6. The panel 77 is then bent downwardly across the corner formed by the fold between panels 80 and 81 so as to lie against the panel 81.

Since the opening 93 extends to the fold line between the panels 78 and 77 and the opening 94 intersects the fold line between panels 81 and 80, a free edge is formed at the top of panel 77 for a purpose which will presently appear.

The panel 76 is bent rearwardly across the lower edge of the panel 81 and the material formed by the cut line 91 is pressed upwardly to form shoulders for holding the assembly in place as will presently appear. The panel 75 is then bent upwardly across the corner formed by panels 79 and 80 so as to lie substantially against the panel 79, leaving the positioning tab 90 lying in the plane of the panel 76. The locking tabs 97 are bent forwardly 180° against the small locking panel 96 and they and the panel 96 are inserted through the opening 89 between the panels 75 and 76 so that the locking panel 96 lies substantially in the plane of the positioning tab 90. The locking tabs 97 will move upwardly as shown in Fig. 5 to firmly lock the panels 76, 79, and 75 together. The panels 74 and 73 are then folded along their fold lines to the position shown in Fig. 5.

The reinforcement 30, folded into the position shown in Fig. 5, is then assembled with the partially folded stand of Fig. 6 in the following manner: The base panel 76 of the reinforcement is positioned on the base 32 of the stand with the rear edge of the positioning tab 90, the rear edge of the small locking panel 96 and the panel 73 lying against the back panel 33 of the stand. The tabs formed by the cuts 64 in both the back panel 33 and the lining panel 34 are folded forwardly so as to lie against their respective panels. The side spacing tabs 44 are bent 180° to lie against the lining panel 34 and the panel 34 is folded downwardly against the back panel 33 and against the panel 73 of the reinforcing member 30 with its lower edge at the fold line between the panels 73 and 74 as shown in Fig. 6.

The panel 34 will be spaced slightly from the panel 33 for a purpose which will presently appear.

The riser 37 is then turned upwardly against the panel 77 and the locking tabs 49 simultaneously inserted between the ends of the panel 77 and the lining panels 36. The locking tab 62 is folded rearwardly through the openings 93 and 94 in the reinforcement 30 downwardly against the rear side of the panel 81 behind the shoulders formed by the cut 91 as shown in Fig. 5 to lock the panel 37 against the panel 77.

The lower shelf panel 38 is then folded over against the panel 78 of the reinforcing member and the locking tabs 52 simultaneously inserted between the ends of the panel 78 and the lining panels 36. The riser panel 39 is then brought against the strut panel 75 above the panel 78 and the locking tabs 50 simultaneously inserted into the slots formed by cuts 72 in the lining panels 36 to lock the panel 39 in place, it being noted that the openings formed by the cut 61 coincide with the openings 87, 93, and 94 in the respective panels of the reinforcing member 30.

The intermediate shelf panel 40 is then folded over the reinforcing panel 74 with the locking tabs 53 simultaneously inserted between the ends of the reinforcing panel 74 and the lining panels 36, the tab formed by opening 60 being turned downwardly through the opening 86 in the reinforcing panel 74. The upper riser panel 41 is then folded to lie in a forwardly inclined plane with the locking tabs 51 being simultaneously inserted in the slots formed by cuts 71 in the lining panels 36 to lock the riser panel 41 in place.

The reinforcing panel 43 is then folded 180° against the upper shelf panel 42 to form the supporting projections 67 and 68 as shown in Fig. 6. The two panels 41 and 42 are then folded forwardly, with the tabs 54 being turned downwardly, and the supporting projections 67 and 68 inserted into the openings 65 and 66 in the lining panel 34 to completely lock the entire utility stand in assembled position.

It is to be noted that in the completed stand the various notches and openings in the reinforcement 30 register with those in the main blank 29 to form receiving openings for various tools usable with a suction cleaner.

It is to be understood that it is within the scope of this invention to omit the reinforcement 30 where strength and rigidity are not essential. For example, if the stand is not to be used as a shipping container for the implements the reinforcement 30 may be omitted.

Description of Figs. 7 to 9

The modification of Figs. 7 to 9, inclusive is similar to that of Figs. 3 to 6, inclusive, except that the main blank also incorporates a reinforcement in the form of integral side blanks generally indicated by the reference numerals 100 and 100'. The main blank includes a base, back and side forming portion 5 and a riser and shelf forming portion 6 as in the first modification. Where the parts are the same they have been given the same reference numerals.

The side panels 35 are provided with locking tabs 101 and the base panel 32 with locking tabs 102 and 103 cut and creased as shown in Fig. 7. The cuts and creases 64' forming the carrying opening 16 in the back panel 33 and in the lining panel 34 are of slightly different form as are the openings 66'.

The riser panel 37 is provided with a single locking tab 104, the shelf panel 38 with locking tabs 105, 106, and 107, the riser panel 39 with locking tabs 108 and 109 at each end, the shelf panel 40 with a single locking tab 110, the riser panel 41 with creased end locking tabs 111, as shown, the shelf panel 42 with locking tabs 112 and the panel 43 with locking tabs 113 and 114 at each end.

The right hand bottom reinforcing blank 100' is hinged only to the bottom riser panel 37 and the left hand upper reinforcing blank 100 is hinged only to the shelf panel 40.

The bottom reinforcing blank 100' comprises panels 115, 118, and 121, the former being hinged to the riser 37 of the main stand. The panels 115 and 118 are connected by a pair of runners 116 and 117 and the panels 118 and 121 are connected by three runners 119', 119, and 120. A bracing panel 122 hinged to panel 115 intersects the crease line between runners 116, 117, and panel 118 while a similar bracing panel 123 separates the runners 119 and 120 and is hinged to the panel 121. The panel 115 is creased to provide a locking tab 124 which cooperates with a notch 126 in panel 121 as will appear. An opening 125 is provided between the runners 119' and 119 for a purpose which will presently appear.

The left hand upper reinforcing blank 100 comprises main panels 127, 128, and 129, the latter being hinged to the middle shelf 40 of the main blank. The panel 128 is cut and creased as shown to form subpanels 131, 132, and 133 and is notched at 134. The panel 129 is cut to provide a notch 130, openings 135 and 136 and a notch 139 separating it from the lug 111.

Assembly of Figs. 7 to 9

The back and side panels of Figs. 7 to 9 are assembled in a manner similar to that of Figs. 3 to 6 except that as the side panels 35 are folded at right angles to the back panel 33 and the liner panels 36 and 36' are folded against the side panels 35 the locking tabs 103 are folded downwardly over the top of the spacing tabs 101 so as to lie between the tabs 101 and the side panels 35, as shown in Fig. 9, to firmly lock the panels 32, 33, 35, and 36 together.

The bracing panels 122 and 123 are bent slightly upwardly and downwardly respectively from the plane of blank 100', the locking tab 124 turned backwardly and the other parts of blank 100', the portion 6 of the main blank, and the parts of the reinforcing blank 100 are given preliminary bends as shown in Fig. 8. The reinforcing blank 100' is then folded over upon the main blank about the fold line between the panels 115 and 37. The runners 116 and 117 are then bent backwardly relative to panel 115 in a forwardly extending position leaving the bracing panel 112 below them. At the same time the panel 118 is bent backwardly at an angle to the runners 116 and 117 and the runners 119', 119, and 120 are folded backwardly and downwardly at an acute angle to the panel 118, permitting the free end of the spacer panel 123 to enter the opening formed by the spacer panel 122 so as to lie against the spacer panel 122. The panel 121 is bent backwardly at an angle to the runners 119', 119, and 120, placed on the back of panel 115 and pushed backwardly causing the edges of notch 126 to engage lugs of the locking tab 124 of panel 115, as shown in Fig. 9, so that the panel 121 lies flat against the panel 115 and both lie against the riser panel 37.

The left hand reinforcing blank 100 is then turned over against the main blank on the fold line between the panel 129 and the middle shelf 40 with the tab formed by the cut 60 of shelf 40 extending through the opening 135 of panel 129, the tab formed by the cut 58 extending through opening 136 and one of the tabs formed by the cut 59 bent into notch 130, as shown in Fig. 9, to lock the panel 129 to the underside of shelf 40. It is to be noted that the panel 129 extends beyond the shelf 40 for a purpose which will presently appear and that the tabs formed by the cut 61 and the bracing panels 122 and 123 will enter the opening formed by the subpanels 131, 132, and 133, as shown in Figs. 8 and 9.

The panel 128 is bent upwardly and backwardly from panel 129 to extend across the riser panel 39 and the lower shelf 38 and rest on panel 118 of the previously folded reinforcing blank 100', as shown in Fig. 9. The subpanel 131, 132, and 133 are then folded backwardly into a loop and the panel 127 folded upwardly to abut against the subpanel 133 as shown in Fig. 9. If desired, the panels 127 and 133 may be suitably notched and scored to provide a locking tab and its receiving notch to secure them firmly together.

The riser panel 37 together with the panels 115 and 121 of the reinforcement 100 is folded backwardly between the side panels 36 and 36' taking care that the tab 104 is folded so as to lie inside the left lining panel 36'. Such folding movement will bring the fold line of panel 118 and risers 119', 119, and 120, the panel 127 and the subpanel 133 of reinforcement 100 against the base panel 32 with the edges of the panels and the subpanel 132 abutting against the back panel 33. The panel 128 of reinforcement 100 will extend upwardly and forwardly at an angle to the base 32 with the panel 118 of reinforcement 100' lying immediately in front of it. Immediately in front of the panel 118, and at an acute angle thereto, the runners 119', 119, and 120 of reinforcement 100' will extend upwardly and forwardly from one base 32 to form an inclined brace between the panels 118 and 121. The panel 118 will assume an intermediate position, slightly inclined to the vertical, and the runners 116 and 117 will be in a substantially horizontal position.

At the same time the lower shelf 38 will be moved over the top of the runners 116 and 117 with the tab formed by the cut 63 passing through the opening 125, care being taken that the tabs 105 and 106 are turned forwardly inside the lining panels 36 and 36' and that the tab 107 is brought against the bracing panel 122.

Due to the fact that the panel 128 extends across both the lower shelf 38 and the riser panel 39 the latter will also be moved between the panels 36 and 36'. The locking tabs 109 having been turned down against the locking tabs 108 as shown in Fig. 9, both are inserted through the slots formed by the cuts 72 and the panel 39 forced to its final inclined position. As the locking tabs 108 and 109 pass through the slots formed by the cuts 72 and the lining panels 36 and 36' being separated slightly from the side panels 35 the locking tabs 109 will move away from tabs 108 so that the shoulder of the tabs 109 will lie behind the material of the lining panels to firmly lock the riser 39 to the side panels.

The middle shelf 40 and the panel 129 is turned forwardly to substantially a horizontal position with the end of the panel 129 lying immediately beneath the lower edge of the back lining panel 34, care being taken that the tab 110 on the end

of shelf 40 is turned downwardly against the lining panel 36.

The triangular locking lugs on the tabs 111 of riser panel 41 are turned against the tabs 111 as shown in Fig. 9, the panel 41 is turned forwardly into an inclined position and the folded tabs 111 inserted in the slots formed by the cuts 71. As the tabs 111 are inserted into the slots, the lining panels being separated slightly from the side panels, the folded locking lugs will straighten out slightly between the lining and side panels to cause the shoulders of the locking lugs to firmly lock the riser panel 41 to the sides of the stand.

The reinforcing panel 43 is then turned over against the upper shelf 42 and the locking tabs 113 bent over against the locking tabs 114 as shown in Figs. 8 and 9. The panel 43 and the shelf 42 are then turned inwardly between the sides of the stand, care being taken that the tabs 112 are turned downwardly to lie against the lining panels 36 and 36'. The fold 67 is inserted into the central opening 65 in the lining panel 34, while both the folds 68 and the folded tabs 113 and 114 are inserted into the side openings 66'. As the insertion is made the tabs 113 and 114 are bent downwardly or upwardly between the lining panel 34 and the back panel 33. The panels being spaced apart slightly the locking tabs 113 will straighten out slightly and their shoulders will firmly lock the upper shelf 42 in place.

Description of Figs. 12 to 14

The modification of Figs. 12 to 14 is formed in two separate blanks generally indicated by the reference numerals 140 and 141. The various panels are substantially the same as in the other modifications and where they are the same they have been given the same reference numerals.

As shown in Fig. 13 the back panel 33 has two locking tabs 142 hinged to its lower edge, side liner panels 36 are cut and creased as shown to form implement receiving openings 143 and their holding tabs, locking openings 144, and spacing flaps 145, and the back lining panel 34 is cut and creased to provide side spacing flaps 146 and an end spacing flap 147. The opening 65' is of slightly different shape than in the other modifications.

As shown in Fig. 12 the base panel 32 is cut and creased to form locking flaps 148 which in turn are cut and creased to form locking tabs 149', the bottom riser 37 and the lower shelf 38 are provided with hinged locking flaps 149 and 150 respectively, the middle riser 39 is cut and creased at 151 to form an implement receiving opening and its holding tabs and is provided with side hinged locking flaps 152 which in turn have hinged locking tabs 153 and 154, the middle shelf panel 40 is provided with side hinged locking flaps 155 and is cut and creased at 156, 157, and 158 to form implement receiving openings and their holding tabs, the upper riser 41 is cut and creased at 159 to form an implement receiving opening and its holding tab and has side hinged locking flaps 160 which in turn have hinged locking lugs 161 and 162, and the upper shelf 42 is cut and creased at 163 to form an implement receiving opening and its holding tab is provided with hinged side locking flaps 164 with locking tabs 169 and 170, the tab 170 being hinged to the panel 40 and the tab 169 being hinged to the tab 170, as shown, and with a projection 171.

Hinged to the inner edge of the base panel 32 is a locking panel 165 which has a bracing panel 166 hinged thereto. The panels 32 and 165 and panels

165 and 166 are cut on their hinge lines to form locking openings 167 and 168 respectively.

Assembly of Figs. 12 to 14

Referring to Fig. 14 the various panels, flaps, and tabs of blank 141 are bent to the position shown preliminary to the actual assembly operation. The side panels 35 are turned forwardly at right angles to the back panel 33 and the locking tabs 142 turned upwardly as shown. The base panel 32 is placed between the side panels 35 with its locking flaps 148 against the inner faces of the side panels 35 and the locking panel 165 against the inner face of the back panel 33 and the blank moved downwardly so that the locking tabs 142 will pass through the openings 167. The flaps 145 of the liner panels 36 are turned at right angles thereto and the panels 36 folded inwardly 180° against the inner faces of side panels 35, the locking tabs 149' thereon passing through the locking openings 144 of panels 36 whereby the tabs 149' can be turned backwardly against the panels 36 to lock the side panels to the base. The bracing panel 166 is turned forwardly so that the narrow upper ends of the locking tabs 142 will pass through the opening 168 whereby the narrow ends of the tabs 142 can be turned downwardly behind the locking panel 165 to anchor the base panel 32 to the back panel 33. It is to be noted that the bracing panel 166 will extend downwardly and outwardly with its outer edge resting on the base panel 32 at the fold line between the panels 32 and 37.

The riser panel 37 is turned upwardly between panels 36 with its flaps 149 turned inwardly against the panels 36 and the lower shelf 38 is turned inwardly to substantially a horizontal position between the panels 36 above the panel 37 with its flaps 150 turned downwardly to lie against the inner faces of the panels 36. The locking tabs 153 and 154 are turned backwardly 180° against the locking flaps 152 shown in Fig. 14, the locking flaps 152 turned backwardly at right angles to the riser panel 39, the riser panel 39 turned inwardly between the panels 36 and the points of the locking flaps 152 inserted in the openings formed by the cuts 72. As the panel 39 is forced to its final inclined position the locking tabs 153 and 154 will straighten out slightly into the space between the panels 35 and 36 so as to anchor the riser panel 39 to the sides of the stand.

The middle shelf 40 is turned inwardly into substantially a horizontal position between the panels 36 with its flaps 155 turned downwardly to rest against the inner faces of the panels 36, the locking tabs 161 and 162 of locking flaps 160 turned backwardly 180° against the flaps 160, the flaps 160 turned backwardly at right angles to the upper riser panel 41 and the riser panel 41 moved inwardly between the panels 36 with the points of the flaps 160 entering the openings in the panels 36 formed by the cuts 71. As the panel 41 is moved to its final inclined position the locking tabs 161 and 162 will straighten out slightly into the space between the panels 35 and 36 to lock the riser panel 41 to the sides of the stand.

The tabs formed by the cuts 64' in the panels 33 and 34 and the flaps 146 and 147 of panel 34 are turned inwardly 180° to lie against the inner faces of the panels, the locking tabs 169 are turned backwardly 180° to lie against the locking tabs 170 and both turned inwardly at right angles to the upper shelf panel 42. The panel 34 is turned downwardly 180° against the inner face of the back panel 33 and the upper shelf 42 turned in-

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wardly between the panels 36 with the folded locking tabs 159 and 170 entering the openings 66' and the projection 171 entering the opening 65'. As the locking tabs enter the opening 66' they are turned downwardly or upwardly between the panels 33 and 34 so that the locking tabs 169 will straighten out slightly into the space between the panels 33 and 34 to lock the upper shelf panel 42 to the liner panel 34 to complete the assembly.

From the foregoing it can be seen that this invention provides a utility stand well adapted for use in holding all of the utility tools usable with suction cleaners, either in storage, while in use or display, or during shipment, in which the stand can be easily carried about, can be supported on its base while in use, and can be hung up for storage when not in use. The stands are made of plain or corrugated cardboard cut and creased to form the various parts whereby the blanks will occupy little space during storage or shipment and can be easily assembled either by the maker, the distributor, or the final user. However, the stands are intended to be assembled by a cleaner manufacturer whereby they can be used as a shipping container for the various tools as well as a utility stand by the final user.

While I have shown but three embodiments of my invention it is to be understood that these embodiments are to be taken as illustrative only and not in a limiting sense. I do not wish to be limited to the specific structure shown and described but to include all equivalent variations except as limited by the scope of the claims.

I claim:

1. In a utility stand for supporting suction cleaner implements and formed of paperboard stock comprising; a base panel; a back panel secured to said base panel and extending vertically from the back edge thereof; a side panel hinged to each edge of said back panel on vertical hinge lines and extending at right angles thereto to the forward edge of said base panel; side lining panels hinged to the forward edge of said side panels and extending backwardly along the inside of said side panels to said back panel; spacing flaps hinged to said side panels and to said lining panels and positioned to lie in face to face relationship to each other between said side and side lining panels and shelf and riser panels secured to the forward edge of said base panel lying between and supported by said lining panels.

2. In a utility stand according to claim 1 including spacing flaps hinged to said base and side panels and positioned to lie in face to face relationship to each other between said panels.

3. In a utility stand according to claim 1 including a back lining panel hinged to the upper edge of said back panel and extending downwardly from the upper edge of said back panel toward said base panel and spacing flaps hinged to said back lining panel and positioned between said back and back lining panels.

4. A utility stand formed of paperboard stock comprising; a stand forming section and a shelf forming section; said stand forming section comprising a base panel; a back panel secured to the rear edge of said base panel and extending vertically therefrom; a vertical side wall hinged to each lateral edge of said back panel on vertical hinge lines and extending forwardly to the front edge of said base; a liner panel hinged to the front edge of each side wall and turned backwardly 180° into parallel relationship with said side walls and spacing flaps hinged to said side walls and said

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lining panels and lying in face to face relationship between said side walls and said side lining panels; said lining panels having openings formed therein; said shelf forming section comprising alternate riser and shelf panels hinged to said base, extending upwardly therefrom between said side walls and locking tabs hinged to said shelf forming section extending through said openings into the space between said side walls and said side lining panels.

5. A utility stand for supporting implements usable with a suction cleaner and formed of paperboard stock comprising, a base panel for supporting said stand, a back panel secured to the rear edge of said base panel and extending vertically therefrom, a side panel hinged to each side of said back panel on vertical hinge lines and extending forwardly at right angles thereto, a side lining panel hinged to the forward edge of each of said side panels, lying against the inner face thereof and extending backwardly to said back panel, a back liner panel hinged to the top edge of said back panel on a horizontal hinge line and lying against the inner face thereof, a vertically extending riser panel hinged to the forward edge of said base panel on a horizontal hinge line and lying between said side panels adjacent the forward edges thereof, a first shelf panel hinged to the top edge of said vertical riser panel on a horizontal hinge line and extending horizontally backward toward said base panel, a pair of superposed upwardly and forwardly inclined riser panels having their upper forward edges positioned adjacent the forward edges of said side panels and superposed shelf panels hinged to and extending horizontally rearwardly from the upper forward edges of said inclined riser panels, the back lower edges of the lower of said inclined riser panels being hinged to the inner edge of said first shelf panel on a horizontal hinge line and the inner edge of the upper of said shelf panels being detachably secured to said back liner panel below the top thereof.

6. A utility stand according to claim 5 including a paperboard reinforcement for the lower two of said shelf panels, said reinforcement including an upwardly and forwardly inclined bracing strut extending from said base panel to the forward hinge line between each of the lower two shelf panels and the riser panel to which it is hinged.

7. A utility stand according to claim 6 in which said struts are hinged to the material forming the shelf and riser panels.

8. A utility stand according to claim 6 in which one of said struts is hinged to one end of said vertical riser panel and the other is hinged to one end of the upper of said two lower shelf panels.

9. A utility stand for supporting implements usable with a suction cleaner and formed of paperboard stock comprising, a base panel for supporting said stand, a back panel secured to the rear edge of said base panel and extending vertically therefrom, a side panel hinged to each side of said back panel on substantially vertical hinge lines and extending forwardly at right angles thereto, a side lining panel hinged to the forward edge of each of said side panels lying along the inner face thereof and extending backwardly to said back panel, a back liner panel hinged to the top edge of said back panel on a horizontal hinge line and lying along the inner face thereof, a vertically extending riser panel hinged to the forward edge of said base panel on a horizontal hinge line and positioned between

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said side panels adjacent the forward edges thereof, a forwardly inclined tab receiving opening formed in each of said side lining panels, a plurality of vertically spaced shelf panels, said shelf panels extending rearwardly toward the back panels and an upwardly and forwardly inclined riser panel extending between adjacent shelf panels and having a locking tab on each end thereof positioned in said tab receiving openings, the lower edge of said riser panel being 10 hinged to the rear edge of a lower one of said shelf panels and its upper edge being hinged to the front edge of a higher shelf panel on horizontal hinge lines, the front edge of the lower of said shelf panels being hinged to the upper edge 15 of said vertical riser panel on a horizontal hinge line and the inner edge of the upper of said shelf panels being secured to said back panel below the top thereof.

10. A utility stand according to claim 9 in 20 which said back liner panel serves to lock the inner edge of the upper of said shelf panels to said back panel.

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11. A utility stand according to claim 9 including spacing tabs hinged to the opposite ends of said base panel and to the upper edges of said side panels and lying between said side panels and said side lining panels to provide a space therebetween to receive the locking tabs.

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