

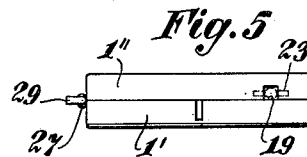
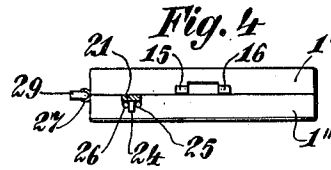
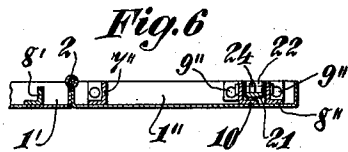
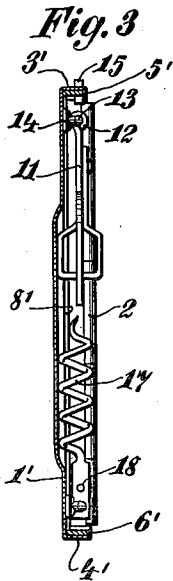
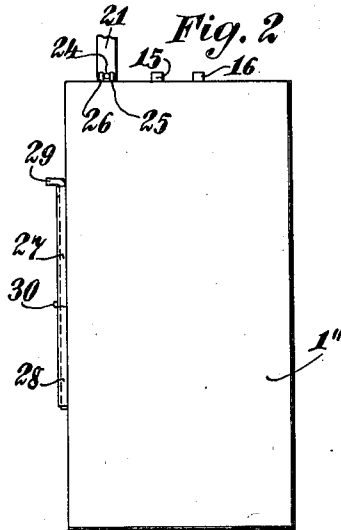
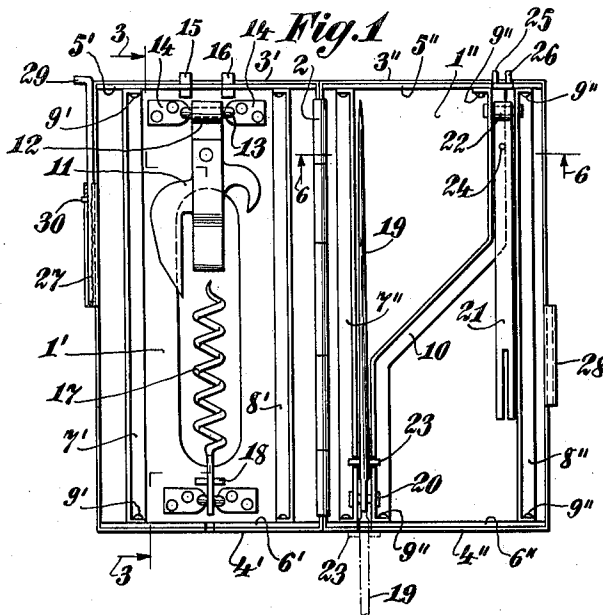
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TOOL HOLDER

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TOOL HOLDER

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7 Claims. (Cl. 7-16)

My invention relates to household tools and, more particularly, to their arrangement, in a collapsible form, within a handy portable casing.

One of the purposes of the invention is to congregate in a single receptacle a variety of tools of daily use in a household, thereby saving much time when looking for any particular tool. Another purpose is to anchor the tools in the receptacle, thereby avoiding their loss or misplacement, the tools being operative when turned into outward positions relatively to the receptacle and collapsible within the receptacle when not in use. Still another purpose is to properly distribute the stresses caused by the operation of the tools and, particularly, to reduce the stresses on the means by which the tools are anchored in the receptacle. A further purpose of the invention is to build up interchangeable units, each holding a different variety of tools in the above indicated manner and fitting such units into a suitable casing, instead of anchoring the tools directly in the receptacle. Other purposes of the invention will become apparent from the description and specification which follow and from the annexed drawing.

In the drawing, Fig. 1 is a plan view of the receptacle constituting my invention, when open and showing the tools within it.

Fig. 2 is a view of the same receptacle, but closed and with one of the tools (only partly shown) in operative position.

Fig. 3 is a cross section of the receptacle shown in Fig. 1, taken along the line 3-3.

Figs. 4 and 5 are end views of the same receptacle, when closed.

Fig. 6 is a cross section of the same receptacle, taken along the line 6-6 of Fig. 1.

Referring to the drawing in detail, 1' and 1'' are the two parts of a metal casing hinged together at 2. The end walls 3', 4', of the part 1', and the end walls 3'', 4'', of the part 1'' are each reinforced by plates 5', 6' (in part 1') and 5'', 6'' (in part 1''). The reinforcing plates 5', 6', in the receptacle part 1' are connected by cross pieces 7', 8', joined, as here shown, by means of rivets 9', and the cross pieces 7', 8', being of angle cross section. The reinforcing plates 5'', 6'', in the receptacle part 1'' are connected by three cross pieces 7'', 8'' and 10, the latter extending in a broken line (for a reason later explained) and all, also, of angle cross section, and riveted to the end plates 5'', 6'' by rivets 9''.

In the receptacle part 1', a can opener 11 is rotatably anchored to the casing by means of the loop 12 around the rod 13 bent and flattened out

and riveted in the casing as shown at 14, 14, and constituting an axle for rotating the tool out of and into the receptacle. Projections or shoulders 15, 16, on the plate 5', extend both outwardly and inwardly of the receptacle end wall, the metal of the casing being cut to permit passage of the outward projections. These projections or shoulders 15, 16, are so disposed that the stem of the can opener 11 closely fits in between them when the tool is rotated into its outward, operative position. The metal of both, the end wall and the reinforcement plate, is cut to permit the can opener to assume its operative position without interfering with the closure of the receptacle.

At the other end of the receptacle part 1', another tool, shown here as a corkscrew 17, is rotatably anchored in the receptacle in a way similar to that shown in connection with the can opener 11. There is no need, therefore, to clutter the drawing with more lettering to describe the anchoring means of the tool 17. Provision is again made, of course, for allowing the casing to be closed when the tool 17 is in its outward, operative position, by cutting the metal of the end wall 4' and reinforcing plate 6'. A pin 18 on the stem of the corkscrew 17 is so disposed that it will rest closely against the reinforcing plate 6' when the corkscrew is rotated into its outward, operative position. The function of the pin 18 will be explained later.

In the receptacle part 1'', a punching tool or ice pick 19 is shown pivoted at 20 in the cross pieces 7'' and 10, and a sardine box opener 21 pivoted in the cross pieces 10 and 8''. A pin 23 on the punching tool 19 is so disposed that it rests closely against the end wall 4'' when the tool is in its outward, operative position. A pin 24 on the sardine box opener 21 is so disposed that it fits closely between the pins or projections 25 and 26 of the reinforcing plate 5'', the metal of the end wall 3'' being cut for the passage of the pins 25, 26. The metal of the end walls 3'' and 4'', and of the reinforcing plates 5'' and 6'', is also cut to permit the tools 19 and 21 to assume their operative positions without interfering with the closure of the receptacle.

The means for closing the receptacle is here shown as consisting of the tubular members 27 and 28, one on the receptacle part 1', and the other on the part 1'', and a pin 29 movable up and down the tubular members 27, 28, with a stop 30 on the pin 29, and a slit in the tubular member 27 for the passage of the stop 30.

The face of the casing may be provided with a bulge to accommodate such tools as may have

especial depth in some parts, as shown in the drawing and, particularly, in Fig. 3.

To operate any one of the tools, it is rotated into its outward position, after which the two hinged parts of the receptacle are closed and secured together. The receptacle acts as a handle for the tool.

The tools shown in the drawing have been selected merely to illustrate the device. Obviously, other tools than those shown may be substituted. Nor is their number limited to four. It is limited only by the size of the receptacle.

In all cases, the anchorage of the tool is in a great measure relieved of the pressure or whatever other stresses may develop during the operation of the tool by a suitable provision whereby such stresses are taken up by the receptacle itself and are distributed therethrough. Thus, in the case of the can opener 11, which is operated by a rocking motion, the stresses are taken up by the projections or shoulders 15, 16. In the case of the corkscrew 17, the greatest stresses arise during the pull, which is taken up by the reinforcing plate 6' acted upon by the pin 18. In the case of the punching tool or ice pick 19, the shock is taken up by the reinforcing plate 6'', acted upon by the pin 23. Finally, in the case of the sardine box opener 21, which is operated by a rotary motion about its axis, the stresses are taken up by the pins 25, 26 on the reinforcing plate 5'', acted upon by the cross pin 24 on the tool 21. In all cases, the stresses taken up by the end wall reinforcing plates are distributed over the entire receptacle through the interconnecting parts, and the anchorages of the tools are thereby in a great measure relieved of these stresses.

The cross piece 10 is given the broken line form shown in the drawing to permit access to the tools when they are to be rotated out of the receptacle.

It will be noted that the methods of anchoring the tools in the two receptacle parts differ. In the part 1', they are anchored in the face wall of the casing. In the part 1'', they are anchored in the cross pieces 7'', 10 and 8''. The latter arrangement enables one to make up an interchangeable unit independently of the casing. The unit consists of the framework formed by the reinforcing plates and the cross pieces, and of the tools anchored in the framework. The unit is inserted in the casing and is held therein by friction. It is removable and may be replaced by another unit comprising the same or different tools.

The two different arrangements are shown in the same Fig. 1 only to avoid a needless duplication of drawing. It is to be understood that both receptacle parts may be of the form 1', or both of the form 1'', and that the invention contemplates the same arrangement for both parts of the receptacle.

It is also to be understood that the pins and projections on the reinforcing plates, shown as extending outwardly, may just as well extend inwardly, or they may extend both ways, as is shown, for instance, in the case of the projections 15, 16. Of course, the pins and projections are preferably directed inwardly when the unit construction shown in the receptacle part 1'' is adopted. Furthermore, it is clear that the form and position of the various pins and projections will be determined by the mode of operation of the tool, the purpose in all cases being to relieve the anchorage of the tool as much as possible from the stresses developed during its operation.

While the form of the device shown in part 1'

of Fig. 1 has the advantage of interchangeability, the form shown in part 1'' has the advantage of greater reduction of stresses in the anchorage of the tools, the anchorage in part 1'' being independent of the reinforcing end plates and of the cross pieces connecting them, while in the part 1' the tools are anchored in the cross pieces. In the part 1' the anchorage is only indirectly and very slightly affected by the operation of the tools, but in the part 1'', the effect is more direct. Thus, the pressure on the punching tool 19 is directly transmitted to its pivots in the cross pieces 7'' and 10, but even in this case the pressure is reduced because it is divided among all of the cross pieces 7'', 10, and 8'', since all of them are interconnected with the reinforcing end plates. The more tools there are in the unit, the more cross pieces there will be, and, therefore, the greater will be the reduction of stresses in the anchorage of any particular one of the tools.

I claim:

1. A receptacle comprising two parts hinged together, a multiplicity of tools movably anchored in said receptacle, said tools being in operative positions when they are moved outward from said receptacle and the receptacle is closed, the receptacle acting as a handle for the tools, means on said tools and co-operating means on said receptacle independent of the anchorages of said tools for partly relieving said anchorages from the stresses developed by the operation of the tools by causing the main portion of said stresses to be taken up directly by the body of said receptacle, and means for securing said hinged parts together, the end walls of said hinged parts being provided with recesses to permit the receptacle to be closed when the tools are in their operative positions.

2. A receptacle comprising two parts hinged together, a multiplicity of tools rotatably anchored in said receptacle, said tools assuming operative positions when they are rotated out of said receptacle and the receptacle is closed, the receptacle acting as a handle for the tools, means independent of the anchorages of said tools for reducing the stresses in said anchorage when the tools are being operated, by preventing movement of the tools relatively to the receptacle and causing said stresses to be taken up directly by the body of the receptacle, and means for securing said hinged parts together, the end walls of said hinged parts being provided with recesses to permit the receptacle to be closed when the tools are in operative positions.

3. A receptacle comprising two parts hinged together, a tool having a stem anchored in one of said hinged parts for rotation about an axis at a right angle to the axis of said stem, the tool being in operative position when it is rotated out of the receptacle and the receptacle is closed, the receptacle acting as a handle for the tool and the tool being operated by translatory motion in the direction of the axis of said stem, and means independent of the anchorage of said tool for reducing the pressure on said anchorage during its operation by preventing its longitudinal movement relatively to the receptacle and causing said pressure to be taken up directly by the body of the receptacle, the end walls of said hinged part being provided with a recess to permit the receptacle to be closed when said tool is in its operative position.

4. A receptacle comprising two parts hinged together, a tool having a stem anchored in one of said hinged parts for rotation about an axis at

a right angle to the axis of said stem, the tool being in operative position when it is rotated out of the receptacle and the receptacle is closed, the receptacle acting as a handle for the tool and the tool being operated by rotary motion about the axis of said stem, and means independent of the anchorage of said tool for reducing the stresses in said anchorage during its operation by preventing the rotation of said stem about its axis relatively to the receptacle and causing said stresses to be taken up directly by the body of the receptacle, the end walls of said hinged part being provided with a recess to permit the receptacle to be closed when said tool is in its operative position.

5. A receptacle comprising two parts hinged together, a tool anchored in one of said hinged parts for rotation in and out of said receptacle, the tool being in operative position when it is rotated outward and the receptacle is closed, the receptacle acting as a handle for the tool and the tool being operated by a rocking motion, and means independent of the anchorage of said tool for reducing the stresses in said anchorage during its operation by preventing said rocking motion to take place relatively to said receptacle and causing said stresses to be taken up directly by the body of the receptacle, the end walls of said hinged part being provided with a recess to permit the receptacle to be closed when said tool is in its operative position.

6. A frame comprising two parallel plates and cross pieces therebetween, a multiplicity of tools rotatably anchored in said frame, a casing for said frame, a closure for said casing, said plates closely fitting unto the end walls of said casing and said tools being in operative positions when they are rotated out of said casing and the casing is closed, and means for reducing the stresses in the anchorages of said tools when the tools are being operated, by preventing movement of the tools relatively to said casing, said end walls and said plates being provided with recesses to permit the casing to be closed when the tools are in their operative positions.

7. A frame comprising two parallel plates and cross pieces therebetween, a multiplicity of tools rotatably anchored in said cross pieces, a casing for said frame, a closure for said casing, said plates closely fitting unto the end walls of said casing and being held therein by friction, said tools being in operative positions when they are rotated out of said casing and the casing is closed, and means on said tools and co-operating means on said frame for reducing the stresses in the anchorages of said tools when the tools are being operated, said end walls on said plates being provided with recesses to permit said casing to be closed when said tools are in their operative positions.

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