April 20, 1965 G. L. DE'CACCIA 3,179,255

HOLDER FOR TOOLS

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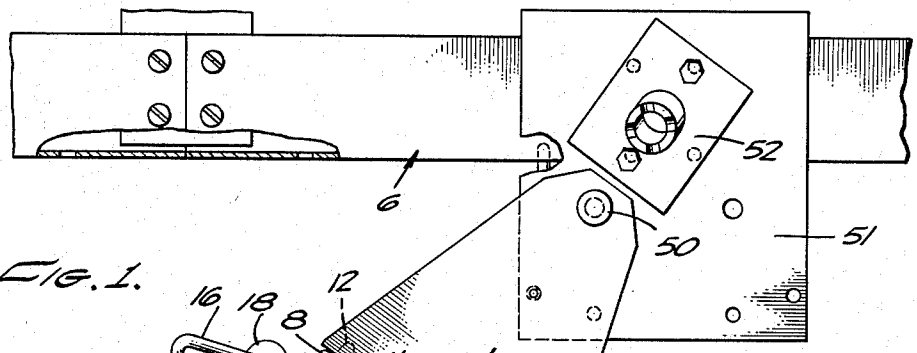
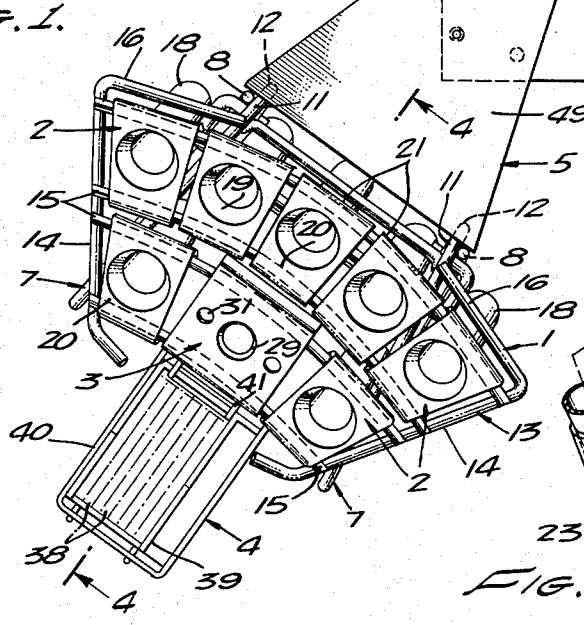


FIG. 1.



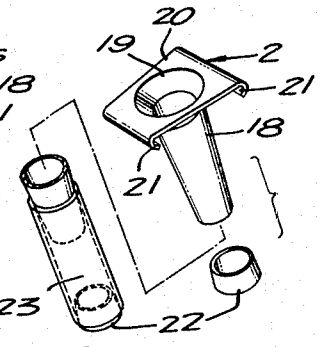


FIG. 6.

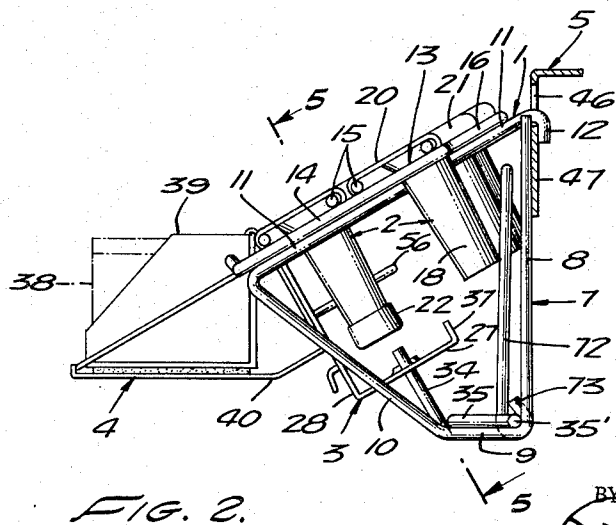


FIG. 2.

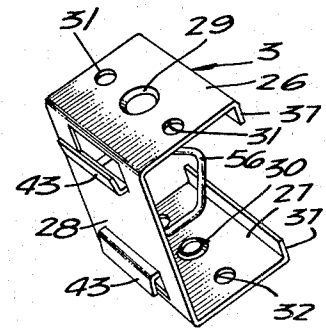


FIG. 7.

GODFREY L. de'CACCIA
INVENTOR.

BY Paul A. Weilein
ATTORNEY

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HOLDER FOR TOOLS

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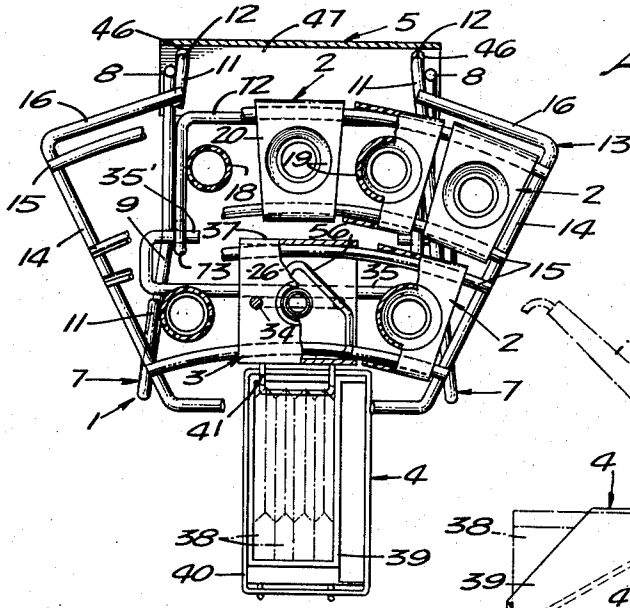


FIG. 3.

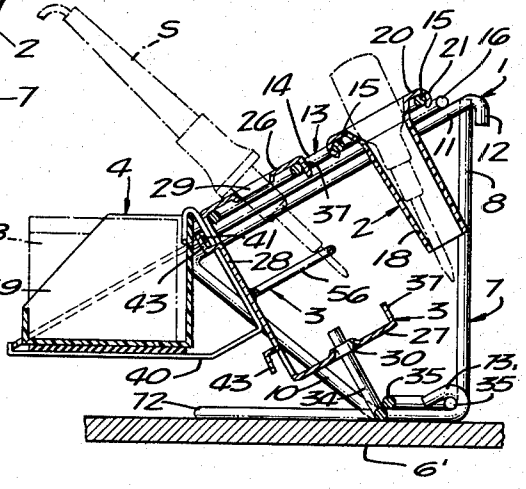


FIG. 4.

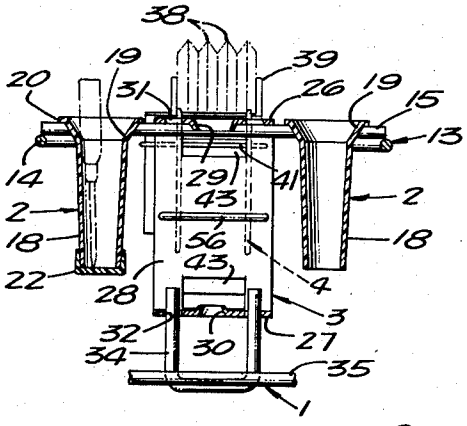


FIG. 5.

FIG. 8.

GODFREY L. de'CACCIA
INVENTOR.

BY Paul A. Weilein
ATTORNEY

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HOLDER FOR TOOLS

Godfrey L. de' Caccia, Long Beach, Calif., assignor, by mesne assignments, to Pendleton Tool Industries, Inc., Los Angeles, Calif., a corporation of Delaware

Filed June 18, 1962, Ser. No. 203,340
9 Claims. (Cl. 211—60)

This invention relates to a device for supporting a plurality of tools for use at production stations and assembly lines and the like in manufacturing plants.

It is an object of this invention to provide a novel holder which is constructed and arranged to support a plurality of tools and one or more related accessories in groups and in such a manner that an operator at a production station readily may remove each tool or accessory and as readily replace it with a minimum of exertion and movement in carrying out a given production operation.

It is another object hereof to provide a tool holder of the character described which is subject to efficient use in connection with a frame structure of the type disclosed in my application for patent entitled Production Station Unit, Serial No. 203,346, filed June 18, 1962, together with the mounting means of the type shown in my application for patent entitled Mounting Bracket for Parts Containers and Tool Holders, Serial No. 203,324, filed June 18, 1962.

It is another object of this invention to provide a tool holder of the character described which includes a group of novel socket members in which the tools are removably held and which are constructed to facilitate the grouping thereof in a compact arrangement making it possible to have ready access to the tools supported therein.

A further object of this invention is to provide a tool holder such as described wherein the plurality of socket members for supporting the tools and a frame structure are constructed and interrelated in a novel manner providing for ready detachable mounting of the socket members on the frame structure and a relative positioning of the socket making it possible for the tools to be removed and replaced with consummate ease.

Other objects and advantages of the invention will be hereinafter described or will become apparent to those skilled in the art, and the novel features of the invention will be defined in the appended claims.

Referring to the drawings:

FIG. 1 is a fragmentary top plan view of a holder for tools embodying the present invention as it would appear when ready for use;

FIG. 2 is a side elevation of the holder showing a part of the mounting means therefor in section;

FIG. 3 is a fragmentary top plan view of the holder with parts shown in section for clarity of illustration;

FIG. 4 is a sectional view taken on the line 4—4 of FIG. 1;

FIG. 5 is a fragmentary sectional view taken on the line 5—5 of FIG. 2;

FIG. 6 is an exploded view of one of the tool holding socket members showing parts connectable thereto for increasing the length of the socket member and forming a closure at the lower end thereof;

FIG. 7 is a perspective view of a solder iron holder as removed from the frame for supporting the socket members and the holder; and

FIG. 8 is a perspective view of a modified form of the tool holder.

A tool holder embodying the present invention as shown in FIGS. 1–7, includes a frame 1 and a plurality of tubular tool holding sockets 2 mounted thereon in a compact group so that all tools such as screw drivers, wrenches

and other hand tools required for a given production assembly and operation or for repair purposes at a production station are positioned in the sockets whereby access thereto readily may be had by a production worker with a minimum of effort and movement. In addition, the holder may include a solder iron holder unit 3 detachably mounted on the frame 1, also a tool wiper unit 4 operable for cleaning the tip of the solder iron and which may be detachably mounted on the front of the solder iron holder unit 3.

The frame 1 is adapted to be supported by mounting means 5 for parts containers and tool holders of the type shown in the aforementioned patent application entitled Mounting Bracket for Parts Containers and Tool Holders, with this mounting means in turn supported on a production station frame unit 6 here shown in part and which forms the subject matter of the aforesaid application entitled Production Station Unit. The frame 1 is also provided with means which will be hereinafter described for supporting the frame in upright position on a table or like support 6' shown in FIG. 4, with the tools and tool holder sockets disposed so as to be readily accessible to a production worker adjacent thereto.

Referring more specifically to the frame 1, it will be seen that it may be made up of heavy wire or bar stock to include a pair of upright triangular side members 7 each made of a length of such stock bent to form a vertical portion 8, a laterally extended foot portion 9 at the lower end of the portion 8, an upwardly and outwardly inclined portion 10 extending from the foot portion 9 and an upwardly and rearwardly inclined top portion 11 extending from the portion 10 to the upper end of the vertical portion 8 and welded thereto. The end of the portion 11 is bent downwardly to form a hook 12.

The two triangular side frame members 7 are joined in upright position by means of an upper frame unit 13 for detachably supporting the tool holder sockets 2. This frame unit 13 extends across the upper sides of the top portions 11 and includes a pair of end rods 14 to which are joined a plurality of arcuate cross rods 15 welded to the end rods 14. The end rods 14 extend diagonally across the inclined top portions 11 of the frame 1 and are welded thereto. At their upper ends the end rods 14 have inwardly bent portions 16 which at their ends are welded to the upper sides of the upper ends of the upper portions 11. The lower ends of the end rods 14 are bent inwardly.

The arcuate cross bars 15 are spaced apart to accommodate two arcuate rows of the tool holder sockets 2 and to accommodate the solder iron holder 3 in the lowermost row. Each of the tool sockets 2 which, as here shown, is preferably made of suitable plastic material, comprises a tubular body 18 which may be slightly tapered towards the lower end thereof and at its upper end is flared as at 19 and provided with an elongate mounting flange 20 integral therewith. The flange 20 is wedge-shaped for a purpose to be hereinafter described. At its ends the mounting flange is provided with downwardly and inwardly curled hook portions 21 which are adapted to snap over the cross rods 15 to mount the holder on the upper frame 13. In having the mounting flanges 20 of wedge shape, they may be closely nested to one another in arcuate form, as shown in FIG. 2. As shown in FIG. 8, and as will be hereinafter more fully described, the wedge shape permits of supporting a plurality of holders in a straight line on a special form of frame. The flared or beveled upper end of each of the holders 2 provides a large mouth facilitating the placement of tools in the holder with the handles of the larger tools resting on mounting flanges 20. For certain tools it will be desir-

able to have a closure cap 22 at the open lower end of one or more of the holders, as shown in FIGS. 2 and 5, to prevent the tool from dropping through the holder, the closure cap fitting over the lower end of the holder to which it is applied. In this connection, it should be noted that as shown in FIG. 6, each holder may have a tubular open-ended extension portion 23 telescoped over the lower tapered end thereof and may have a closure cap 22 mounted within the lower end of the extension 23 to provide for supporting tools of greater length than the tubular body portion 18 of each holder.

With reference to FIGS. 2 and 4, it will be seen that the upper frame 13 is disposed in an inclined plane, the lower side of which will be opposite a production operator whereby the tool holders and tools therein are grouped in a compact arrangement readily accessible to the operator. The frame 1 in its entirety is small, compact, and affords support of all of the tools required for a given production operation, in a comparatively small space.

The solder iron holder 3 is preferably made of sheet metal and consists of end plates 26 and 27 joined by an elongate side plate 28 normal thereto. The end plate 26 is provided with a beveled opening 29 therein to accommodate a solder iron of particular sizes and a similar but smaller beveled opening 30 is provided in the end plate 27 for solder irons of smaller size than accommodated in the end plate 26. The plate 26 is provided with a pair of openings 31 and the plate 27 is provided with a similar pair of openings 32. These openings 31 and 32 are adapted to receive the ends of a U-shaped mounting member 34, the bight portion of which is welded to a cross member 35 extending between the foot portions 9 of the end members 7 and welded thereto. With this arrangement, either the end plate 26 or the end plate 27 may be mounted on the U-shaped member 34 to support the lower portion of the solder iron holder 3, as shown in FIGS. 2 and 5. As each of the end plates 26 and 27 is provided with a flange 37 along one edge thereof, the flange 37 on the uppermost of the two plates will extend over one of the cross rods 15 to support the upper end of the solder iron holder 3 thereon and the holder in position of use.

The wiper unit 4 includes a series of disks 38 of suitable sponge-like material mounted side-by-side in a holder 39 therefor mounted in a skeleton frame 40 which may be supported on the frame 1 by having a portion 41 of the frame 40 hooked onto the upwardly facing hook member 43 of the two such hook members on the plate 28, as shown in FIGS. 1 and 2. This disposes the wiper 4 in position to clean the tips of solder irons as desired, by passing the tips between disks 38.

The hook portions 12 on the frame 1 make it possible to readily hook the frames into slots 46 of a downwardly directed flange 47 on the mounting means 5, thereby positioning the tool holder for use at a production station such as formed by the frame unit 6. In this connection, it should be noted that the mounting means 5 includes a swingable plate 49 pivoted as at 50 on a base plate 51. On this base plate is a mounting member 52 for a parts container unit, not shown. With this arrangement the tool holder may be swung to be disposed in line with a production worker at a production station with the parts holder, not shown, also in line with the worker and accessible to him. It should also be noted that the plate 49 of the mounting means 5 can be positioned on either side of the base plate so as to extend angularly therefrom toward a production worker positioned to the right thereof.

With reference to FIG. 4, it will be observed that a solder iron indicated at S may be positioned in the holder 3 at an angle so that the handle extends outwardly toward a production worker and the trip rests against a V-shaped member 56 which embraces the tip and is welded at its ends to the plate 28 in a position so that with either of the end plates 26 and 27 supporting a solder iron, the tip thereof will be held by the member 56.

With reference to FIG. 8 wherein a modified arrangement of the tool holder is shown, the tool holder socket members 2 are of the same construction as shown in FIGS. 1–6, but arranged to form a straight row in a frame 59 designed for that purpose. The wedge shape of the mounting flanges 20 makes it possible to mount the tool holders in a straight row, as shown in FIG. 8, with the hook portions 21 on the ends of the mounting flange 20 hooked over parallel rods 60 of the frame 59. These rods 60 are inclined downwardly and outwardly from upright rod portions 61 joined thereto and which at their lower ends are joined to a pair of lower rods 62 horizontally disposed and joined at their outer ends as at 63 to the lower ends of the rod 60. A cross member 64 is welded to and between the rows 60 at the lower ends thereof and similar cross members 65 and 66 are welded to the upper and lower portions of the upright rods 61. To these members 65 and 66 are welded like U-shaped members 67 having their ends turned downwardly to form hooks 68. These hooks are adapted to be engaged in slots 69 formed in upright members 70 constituting a support for this modified form of tool holder. The members 70 are parts of the production station unit shown in the patent application, Serial No. 203,346, hereinbefore mentioned.

When the frame 1 is supported in upright position as shown in FIG. 4, a U-shaped supporting member 72 having the ends of its legs bent as at 73 around and pivoted to inwardly bent ends 35' of the cross member 35, is extended forwardly from the member 35 to thereby support the frame. When not in use the member 72 is swung into upright position as shown in FIG. 2.

While specific structural details have been shown and described, it should be understood that changes and alterations may be resorted to without departing from the spirit of the invention as defined in the appended claims.

I claim:

1. A holder for tools, comprising: a plurality of tubular socket members open at the upper ends thereof for supporting tools therein; a supporting frame for said socket members including a plurality of bars spaced one from the other; said socket members being mounted in rows between said bars; mounting and spacing flanges on the upper ends of said socket members extending therefrom and overlying the bars between which the socket members are disposed with said socket members depending from said bars; and means on said flanges detachably engaged with said bars; the flange on each socket member being of greater width and length than the open upper end of the socket member.

2. A holder for tools, comprising: a plurality of tubular socket members open at the upper ends thereof for supporting tools therein; a supporting frame for said socket members including a plurality of bars spaced one from the other; said socket members being mounted in rows between said bars; mounting flanges on the upper ends of said socket members extending therefrom in surrounding relation to said upper ends and overlying the bars between which the socket members are disposed; and means on said flanges detachably engaged with said bars; said bars being disposed one above the other in an inclined plane to support said socket members in positions inclined from the vertical with their upper ends foremost.

3. A holder for tools, comprising: a plurality of tubular socket members for supporting tools therein; a supporting frame for said socket members including a plurality of arcuate bars spaced one from the other for supporting therebetween arcuate rows of the socket members; each socket member having a mounting and spacing flange on one end thereof extending outwardly therefrom in surrounding relation thereto with portions thereof overlying the bars between which each socket member is mounted; and means on said flanges for detachably en-

gaging said bars; the flanges on said socket members having opposite edges in a common plane for abutting one another to space said socket members on said bars.

4. A holder for tools, comprising: a plurality of tubular socket members open at their upper ends for supporting tools therein; a supporting frame for said socket members including a plurality of arcuate bars spaced one from the other for supporting therebetween arcuate rows of the socket members; each socket member having a mounting and spacing flange on one end thereof extending outwardly from all margins of the open upper end of the socket member and overlying the bars between which each socket member is mounted; said flange on each socket member having side edges; and means on said flanges for detachably engaging said bars; said bars being disposed one above the other with said side edges abutting to space said socket members along said bars in depending relation to said bars and with said socket members tilted to dispose said flanged ends foremost.

5. A holder for a plurality of tools, comprising: a plurality of elongate tubular members for supporting tools therein; each of said tubular members having at one end a mounting flange surrounding said one end and projecting laterally therefrom; said one end of each tubular member being flared to provide an enlarged mouth opening at said flange; and means at opposite margins of said flange operable for detachably engaging members for supporting said tubular members.

6. A holder for a plurality of tools, comprising: a plurality of elongate tubular members respectively having open ends for receiving tools to be supported therein; each of said tubular members having at its open end an elongate mounting flange surrounding and projecting laterally from said open end; and downwardly facing hook members at opposite ends of said flange for releasably engaging means for supporting said tubular members.

7. A holder for tools, including: an elongate tubular member for removably supporting a tool therein; and an elongate mounting flange integral with one end of said tubular member and extending outwardly from and surrounding said one end for holding the member in a tool receiving position; said flange being wedge shaped and having portions at opposite ends thereof arranged to extend over and snap downwardly upon means for supporting said tubular member.

8. A holder for tools, including: an elongate tubular member for removably supporting a tool therein; an elongate mounting flange integral with and surrounding one end of said tubular member and having end portions and side portions; said end portions extending outwardly from said one end a greater extent than said side portions; said flange being wedge shaped; and downwardly facing hook members integral with said end portions of said flange for releasably mounting the tubular member in a tool receiving position on a support.

9. In a holder for tools: a frame having a pair of upright members constituting the main portion of the frame; a pair of top members inclined downwardly and outwardly from the upper ends of said upright members; a pair of rearwardly and downwardly inclined members extending from the outer end of said top members to the lower ends of said upright members; a plurality of bars extending across said top members in spaced relation to one another; means supporting said bars on said top members; a plurality of tubular members for supporting tools mounted in rows between said bars; and means on said tubular members engaging the bars between which said tubular members are mounted to suspend the tubular members therefrom.

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CLAUDE A. LE ROY, *Primary Examiner.*