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(54) **TOOL HOLDER**

(52) **U.S. Cl.** 224/904; 224/677; 224/680;
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(76) **Inventor: Shu Chen Chang, Taichung Hsien**
(TW)

(57) **ABSTRACT**

Correspondence Address:
CHARLES E. BAXLEY, ESQ.
90 JOHN STREET
THIRD FLOOR
NEW YORK, NY 10038 (US)

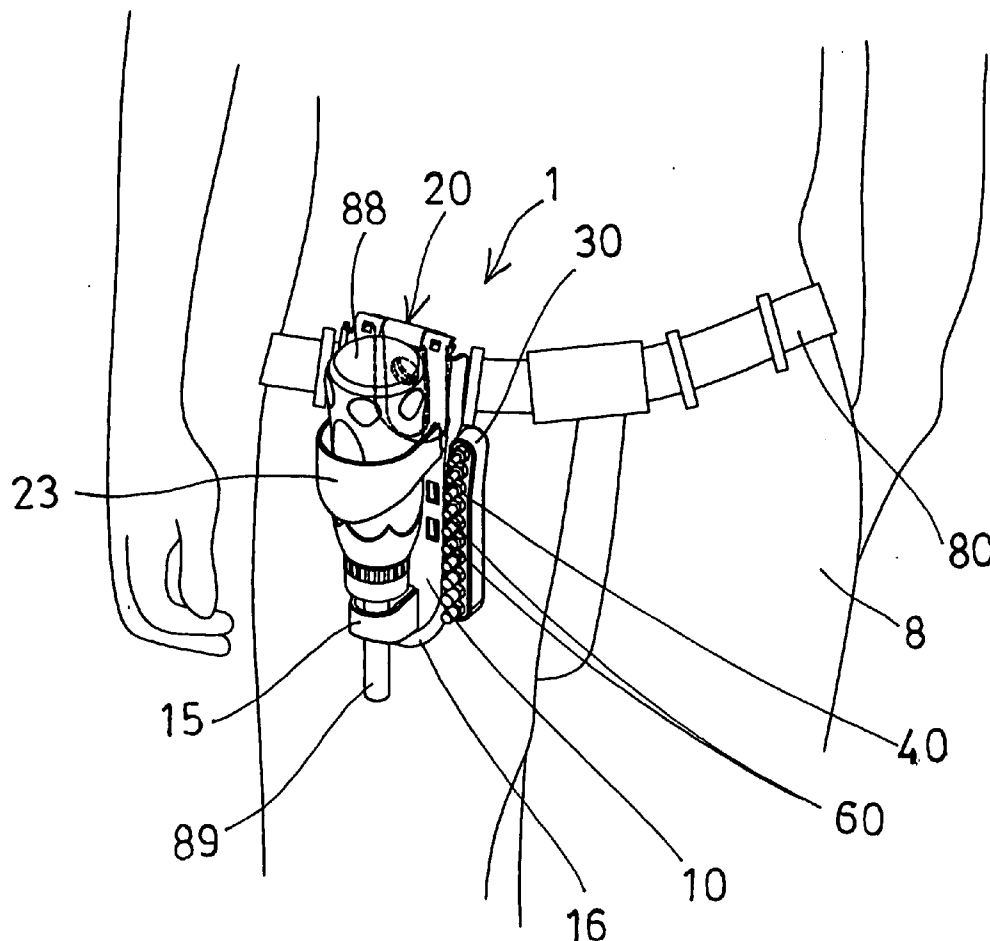
A tool holder includes a support member, a tool casing detachably attached to the support member and having a chamber for receiving an insert, the insert is made of a cushioning material and includes a number of cavities for receiving tool members. The cavities of the insert include an inner diameter smaller than an outer diameter of the tool members for clamping the tool members. The support member includes one or more hooks for hooking the tool casing. The tool casing may include a shaft for engaging with the hook of the support member and may include a latch member for detachably securing the tool casing to the support member. A retaining member may be attached to the support member for engaging with a tool device.

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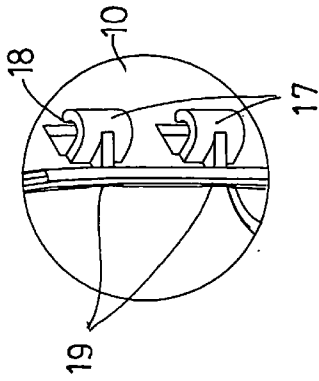


FIG. 2

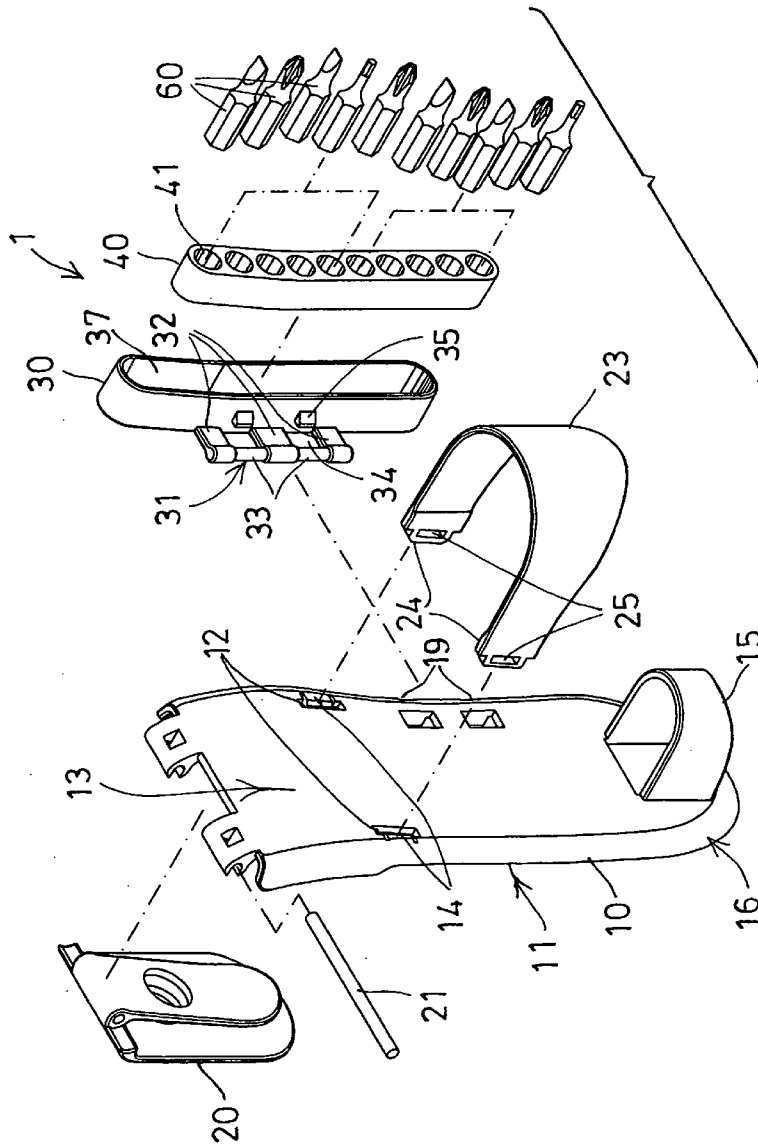


FIG. 1

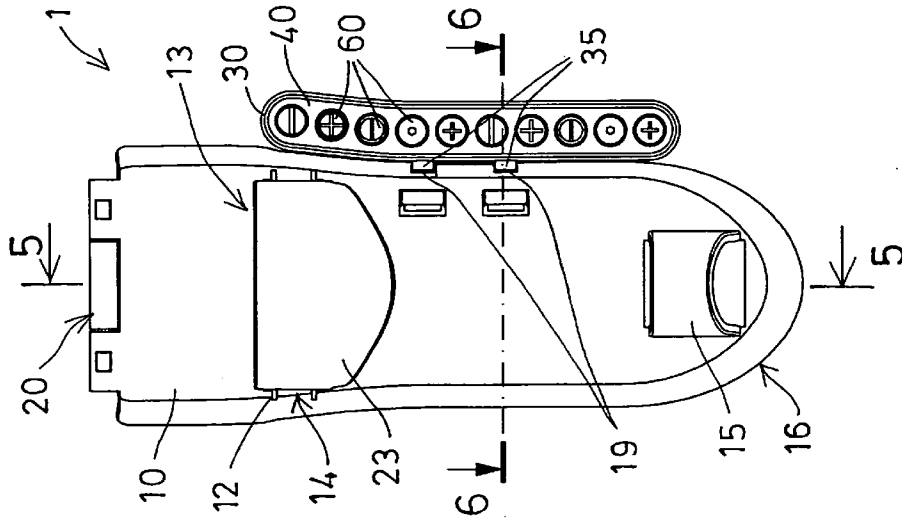


FIG. 4

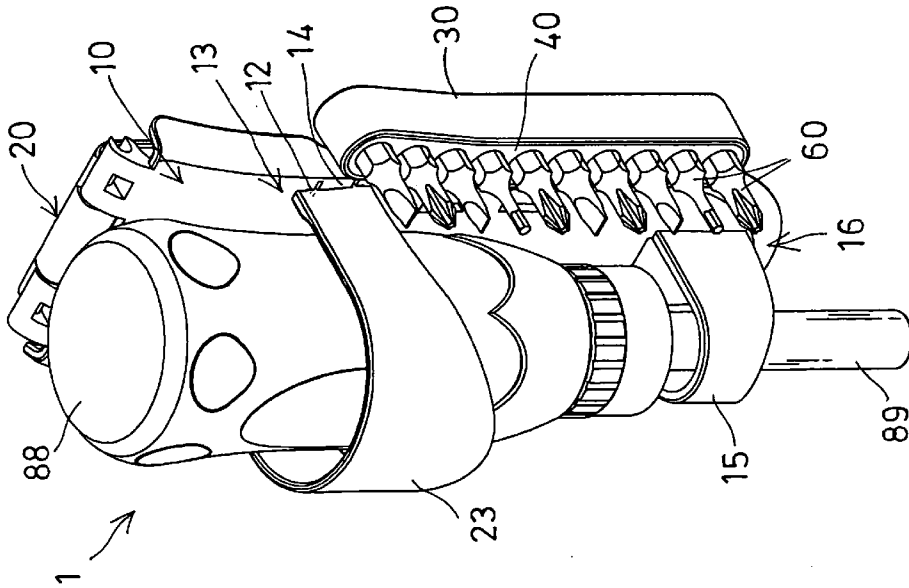


FIG. 3

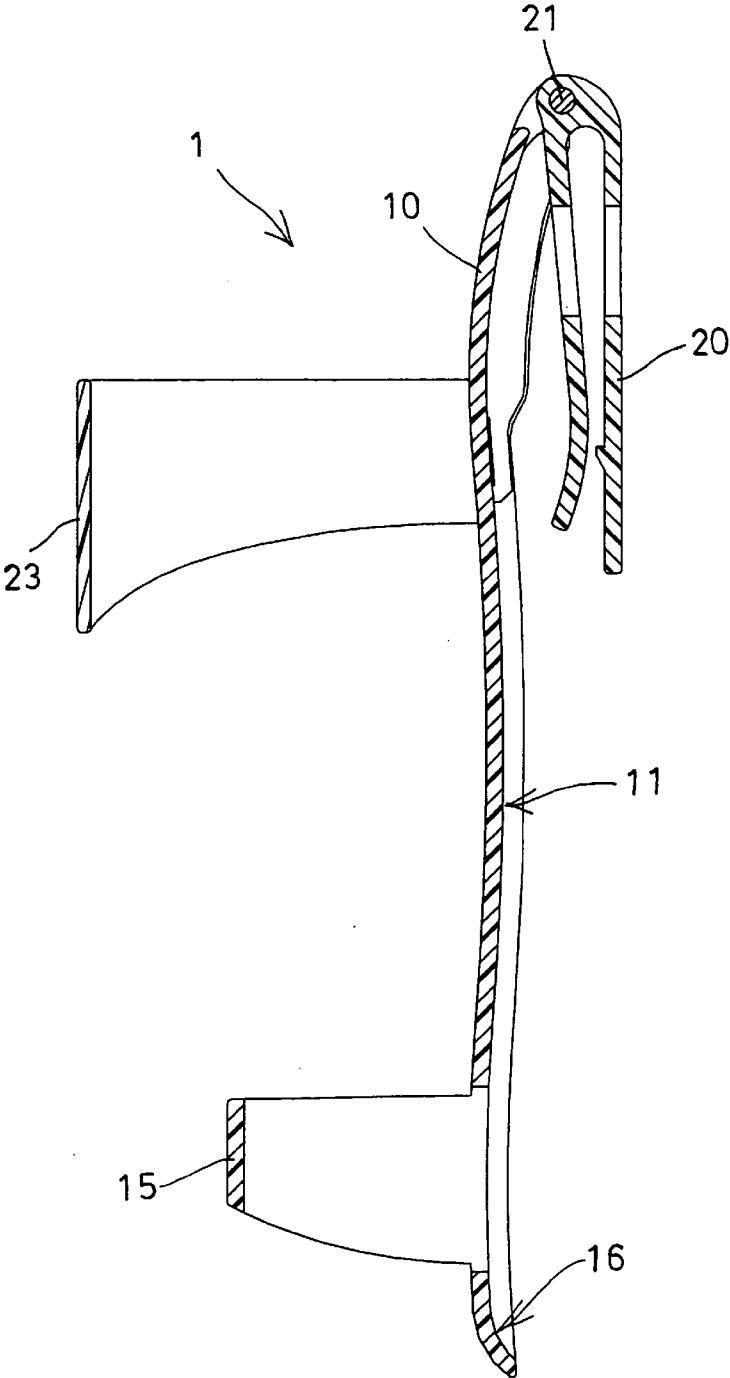


FIG. 5

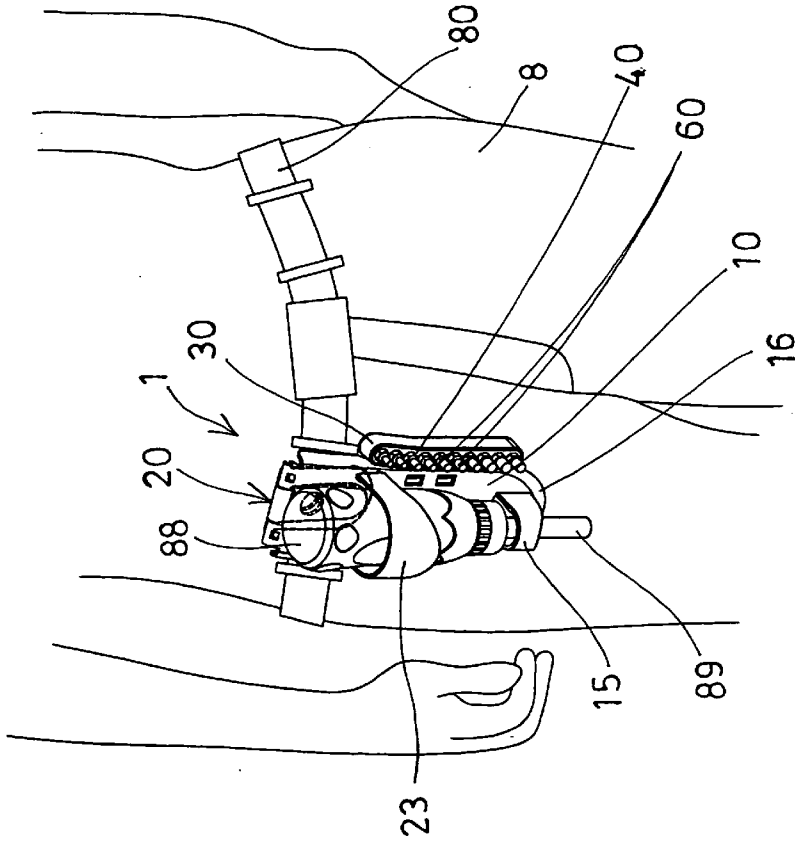


FIG. 9

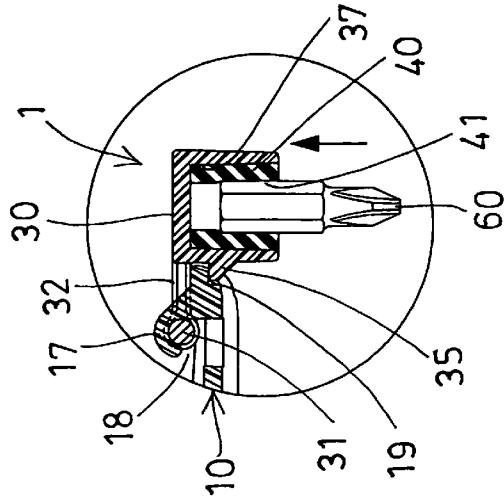


FIG. 8

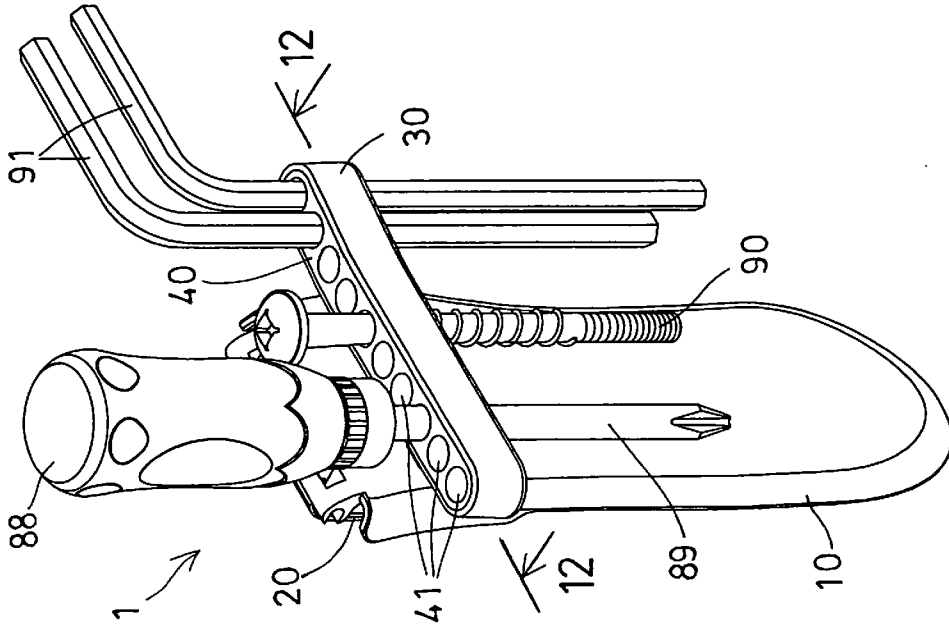


FIG. 11

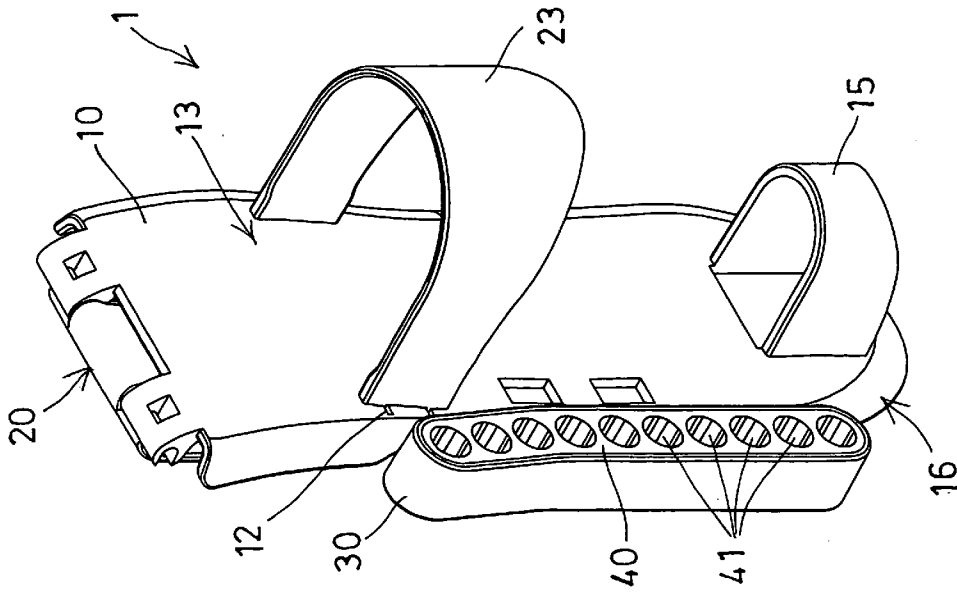


FIG. 10

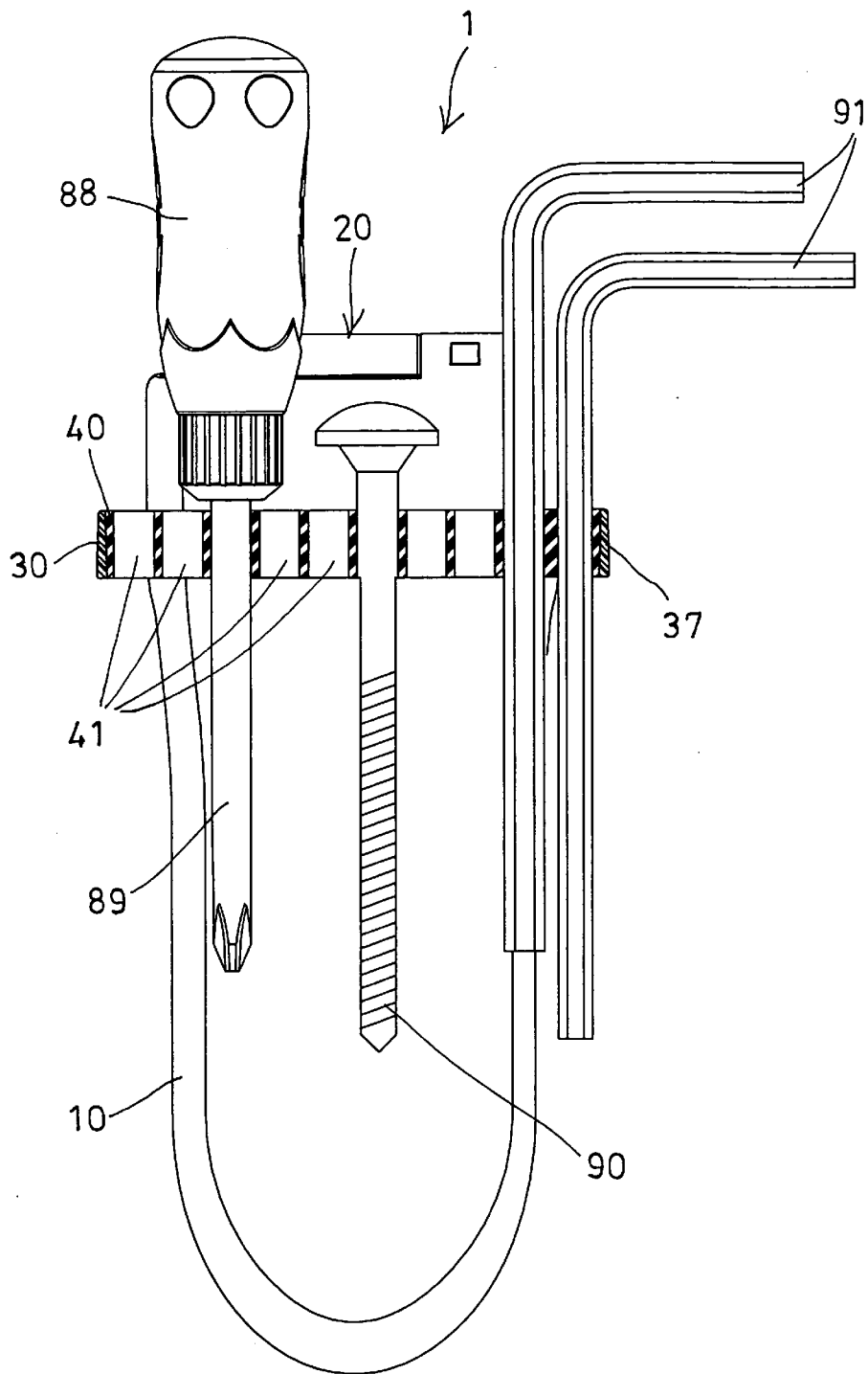


FIG. 12

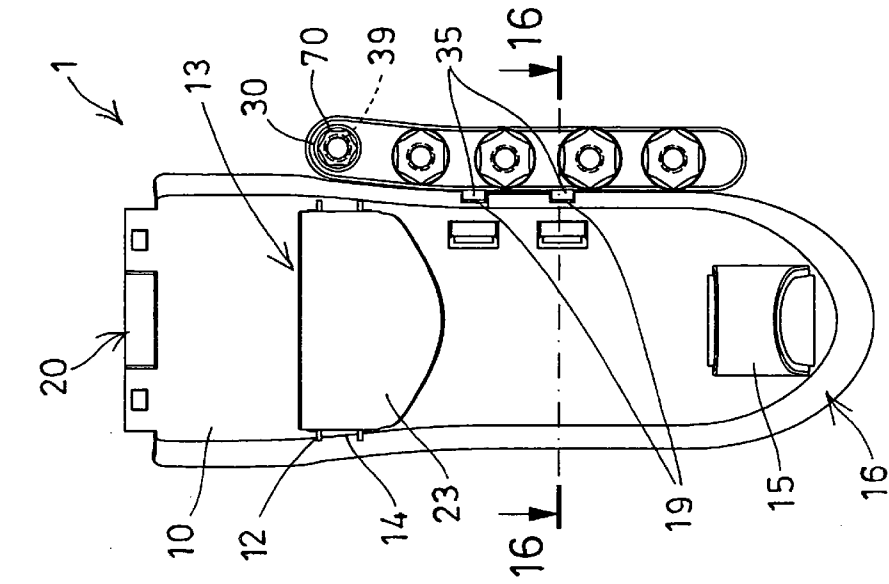


FIG. 14

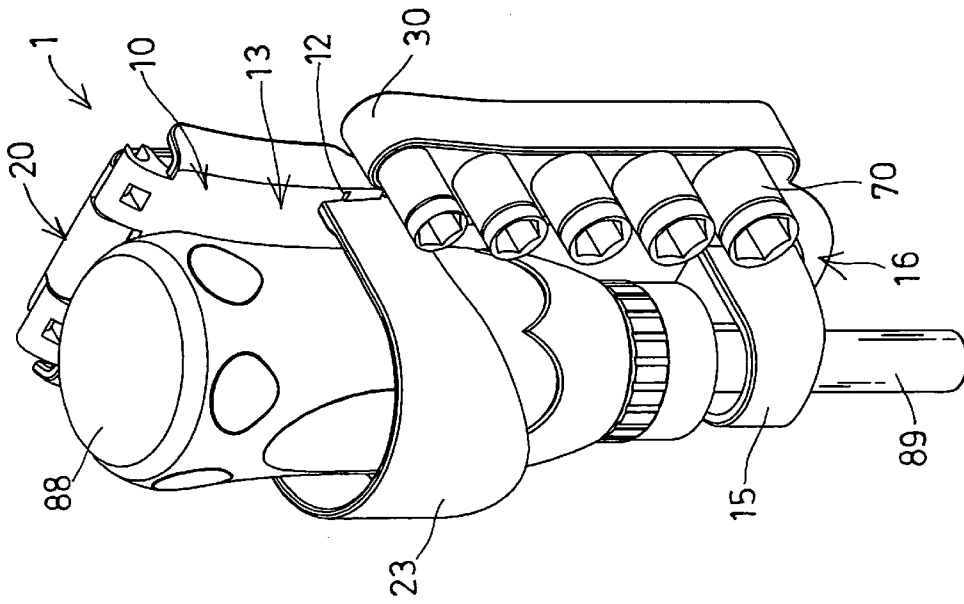


FIG. 15

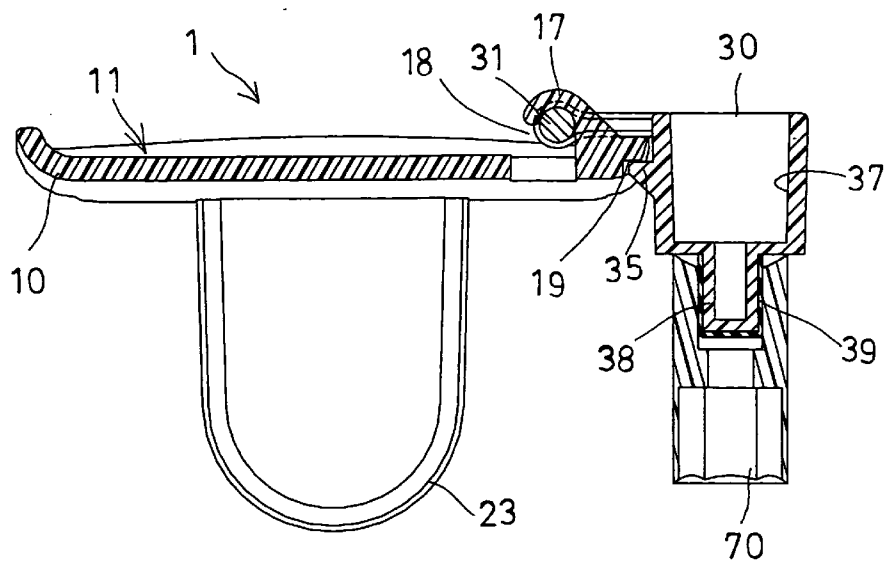


FIG. 16

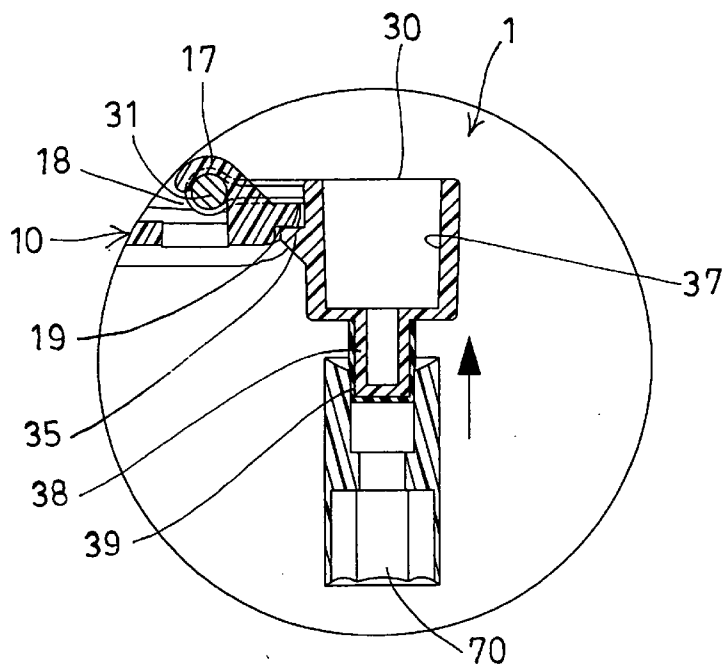


FIG. 17

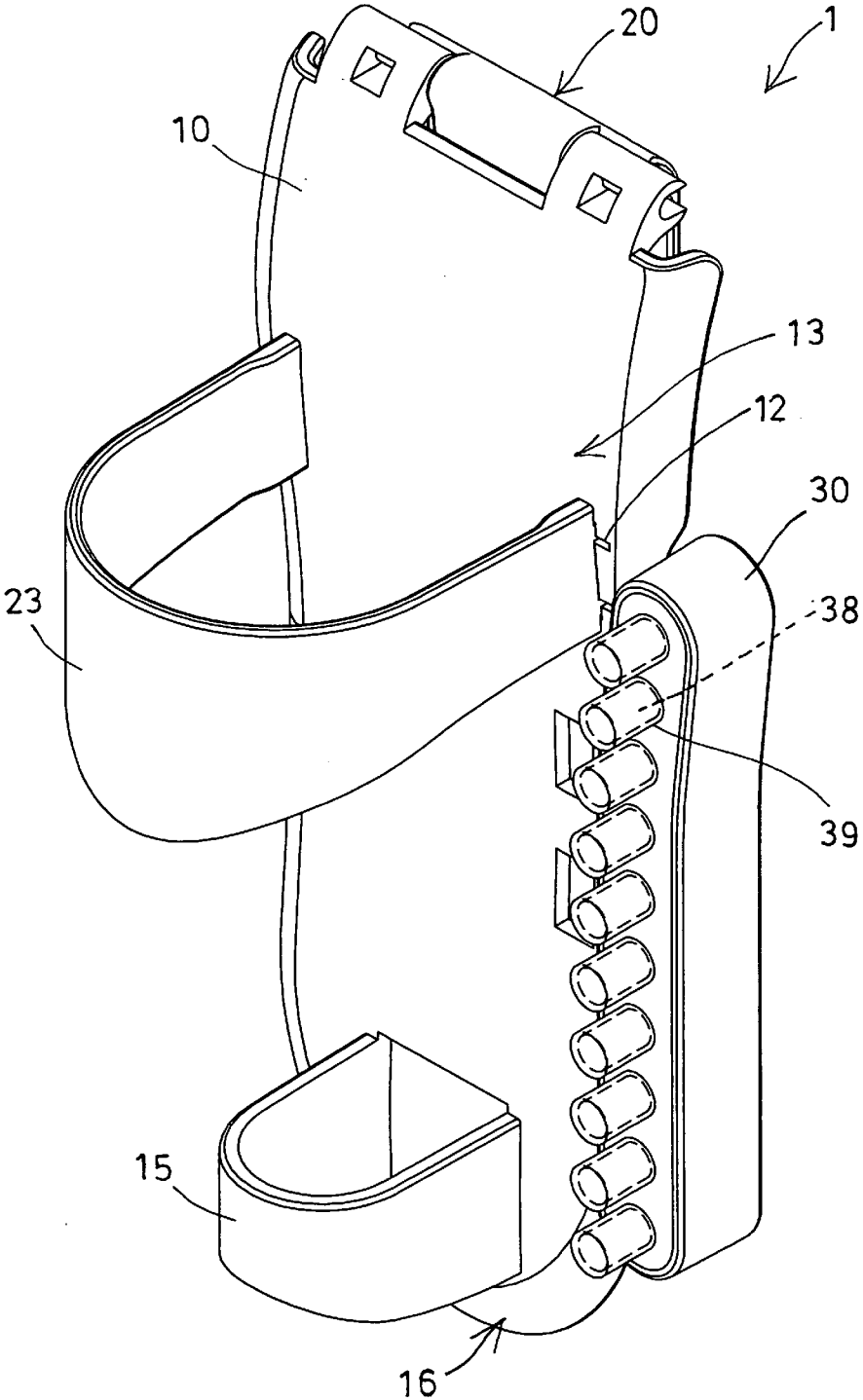


FIG. 18

TOOL HOLDER

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a tool holder, and more particularly to a tool holder having a structure for solidly retaining tool members to the tool holder and for preventing the tool members from being disengaged from the tool holder.

[0003] 2. Description of the Prior Art

[0004] Typical tool holders comprise a body member or a support for attaching to the users, such as for attaching to the waist bands of the users, and the body member or support includes a number of socket-like members or pockets or bags attached thereto or provided thereon for receiving and carrying various kinds of tool members.

[0005] For example, U.S. Pat. No. 2,758,798 to Schmidt discloses one of the typical tool holders also comprising a number of socket-like members or pockets or bags attached to the planar body member or support for receiving tool members.

[0006] However, the tool members are loosely received and supported in the socket-like members or pockets or bags and may have a good chance to be disengaged from the planar body member or support when the users are walking or bending over or jumping, because the planar body member or support may not solidly secure or retain the tool members in the socket-like members or pockets or bags.

[0007] U.S. Pat. No. 4,826,059 to Bosch et al. discloses another typical tool holder comprising a number of magnetic members attached to the planar body member or support for attracting tool members to the planar body member or support and thus for supporting the tool members on the planar body member or support.

[0008] However, similarly, the tool members may not be solidly secured or attached or retained to the planar body member or support with the magnetic members, and the tool members may also have a good chance to be disengaged from the planar body member or support particularly when the users are walking or bending over or jumping.

[0009] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages of the conventional tool holders.

SUMMARY OF THE INVENTION

[0010] The primary objective of the present invention is to provide a tool holder including a structure for solidly retaining tool members to the tool holder and for preventing the tool members from being disengaged from the tool holder.

[0011] In accordance with one aspect of the invention, there is provided a tool holder comprising a support member, a tool casing detachably attached to the support member, and including a chamber formed therein, and an insert disposed in the chamber of the tool casing and made of a cushioning material and including a number of cavities formed therein for receiving and carrying tool members therein.

[0012] The tool casing is preferably made of a material different from that for the insert. The cavities of the insert include an inner diameter smaller than an outer diameter of the tool members for clamping the tool members.

[0013] The support member includes at least one hook extended from the support member for hooking the tool casing and for coupling the tool casing to the support member. The tool casing includes a shaft attached thereto for engaging with or for hooking to the hook of the support member.

[0014] The support member includes at least one link coupled to the shaft for coupling the shaft to the tool casing. The tool casing includes at least one aperture formed therein and defined by the link and the shaft for engaging with the hook of the support member.

[0015] The tool casing includes at least one latch member extended therefrom for engaging with the support member and for detachably securing the tool casing to the support member. The support member includes at least one lock notch formed therein for engaging with the latch member of the tool casing.

[0016] The tool casing includes a number of pins extended therefrom, and a cushioning sleeve attached onto each of the pins for engaging with the tool members. The support member includes an attaching device attached thereto for attaching to a user.

[0017] The support member includes a retaining member attached thereto for engaging with a tool device. The support member includes at least one orifice formed therein, and the retaining member includes two end portions for engaging into the orifice of the support member.

[0018] The retaining member includes a lock opening formed in each of the end portions, and the support member includes a catch member extended into the orifice of the support member for engaging into the lock opening of the support member and for securing the retaining member to the support member.

[0019] Further objectives and advantages of the present invention will become apparent from a careful reading of the detailed description provided hereinbelow, with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] FIG. 1 is a partial exploded view of a tool holder in accordance with the present invention;

[0021] FIG. 2 is an enlarged partial perspective view of the tool holder;

[0022] FIG. 3 is a perspective view of the tool holder;

[0023] FIG. 4 is a front plan view of the tool holder;

[0024] FIGS. 5, 6 are cross sectional views of the tool holder, taken along lines 5-5 and 6-6 of FIG. 4 respectively;

[0025] FIG. 7 is a cross sectional view similar to FIG. 6, illustrating the operation of the tool holder;

[0026] FIG. 8 is an enlarged partial cross sectional view illustrating the operation of the tool holder;

[0027] FIG. 9 is a perspective view illustrating the operation of the tool holder;

[0028] FIG. 10 is a perspective view similar to FIG. 3, illustrating the other arrangement of the tool holder;

[0029] FIG. 11 is a perspective view similar to FIGS. 3 and 10, illustrating the further arrangement of the tool holder;

[0030] FIG. 12 is a cross sectional view of the tool holder, taken along lines 12-12 of FIG. 11;

[0031] FIG. 13 is a partial exploded view similar to FIG. 1, illustrating the still further arrangement of the tool holder;

[0032] FIG. 14 is a perspective view illustrating the tool holder as shown in FIG. 13;

[0033] FIG. 15 is a front plan view of the tool holder as shown in FIGS. 13 and 14;

[0034] FIG. 16 is a cross sectional view of the tool holder, taken along lines 16-16 of FIG. 15;

[0035] FIG. 17 is an enlarged partial cross sectional view illustrating the operation of the tool holder as shown in FIGS. 13-16; and

[0036] FIG. 18 is a perspective view similar to FIGS. 3, 10, 11 and 14, illustrating the still further arrangement of the tool holder.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0037] Referring to the drawings, and initially to FIGS. 1-6, a tool holder 1 in accordance with the present invention comprises a body or support member 10, a clip or attaching device 20 pivotally attached to a rear portion 11 of the support member 10 with such as a pivot axle 21, for allowing the clip or attaching device 20 to be detachably attached to such as a waist band or belt 80 of a user 8 (FIG. 9). The support member 10 includes one or more, such as two orifices 12 formed in an upper or middle portion 13 of the support member 10, and a catch member 14 extended into each of the orifices 12 of the support member 10 respectively.

[0038] A substantially U-shaped retaining member 23 includes two end portions 24 for selectively engaging into the orifices 12 of the support member 10 respectively, and a lock opening 25 formed in each of the end portions 24 of the retaining member 23 for engaging with the respective catch member 14 of the support member 10 and thus for detachably securing or attaching or coupling the retaining member 23 to the support member 10. In operation, as shown in FIGS. 3 and 9, the retaining member 23 may be provided for receiving or for engaging with or for retaining a tool device 88 to the support member 10.

[0039] The support member 10 may further include a ring or loop or supporting bracket 15 provided or attached to such as the lower portion 13 of the support member 10, and preferably having a size or area or width or depth smaller than that of the retaining member 23 for receiving and retaining a relatively smaller tool shank 89 of the tool device 88, and thus for stably retaining or anchoring or attaching the tool device 88 to the support member 10. The retaining member 23 and the supporting bracket 15 may thus be used for supporting or carrying various tool devices 88, such as screw drivers, wrenches, hammers, pipe cutters, etc.

[0040] As shown in FIGS. 2 and 6-8, one or more, such as two curved hooks 17 may be extended from or attached to either or both side portions of the support member 10 and preferably extended rearwardly from the support member 10, and each of the hooks 17 may be formed or defined by a gap or slot 18 for allowing various objects to be engaged with the hooks 17 or for allowing the hooks 17 to be engaged with or hooked onto various objects, which will be discussed hereinafter. The support member 10 may further include one or more, such as two lock notches 19 formed therein, such as formed in the side or front portion of the support member 10 and aligned with the hooks 17 respectively, best shown in FIG. 2.

[0041] One or more tool casings 30 may further be provided and may include a shaft 31 attached or secured to each of the tool casings 30, and one or more bars or links 32 coupled between each tool casing 30 and the shaft 31 for forming one or more shaft sections or segments 33 and/or for forming one or more apertures 34 between each tool casing 30 and the shaft 31, and thus for allowing the hooks 17 to be engaged with or hooked onto the shaft 31 or the shaft segments 33 and to be engaged with or into the apertures 34 of the tool casing 30, and thus for detachably coupling or securing the tool casings 30 to the support member 10.

[0042] The tool casing 30 may further include one or more, such as two latch members 35 extended therefrom and preferably aligned with the hooks 17 or the shaft segments 33 or the apertures 34 of the tool casing 30, for engaging with the lock notches 19 of the support member 10 and thus for detachably securing or locking the tool casing 30 to the support member 10 (FIGS. 6-8). As best shown in FIG. 7, it is preferable that the latch member 35 includes an inclined surface 36 formed thereon for engaging with the support member 10 and for allowing the hooks 17 to be easily or smoothly engaged with or hooked into the lock notches 19 of the support member 10.

[0043] The tool casing 30 includes a chamber 37 formed therein for receiving an insert 40 therein, in which the insert 40 is preferably made of soft or resilient or cushioning members or materials and includes a number of socket holes or cavities 41 formed therein for receiving various kinds of tool members 60, such as screw driver bits 60 (FIGS. 3-4, 6, 8, 9) or the like which may include an outer diameter greater than the inner diameter of the cavities 41 of the insert 40. As shown in FIGS. 6 and 8, the soft or resilient or cushioning insert 40 may suitably clamp or grip or grasp and solidly secure or retain the tool members 60 to the tool casing 30, for preventing the tool members 60 from being disengaged from the tool casing 30 even when the users are walking or bending over or jumping.

[0044] The tool casing 30 may be made of plastic or other synthetic materials that are different from that of the soft or resilient or cushioning insert 40, and the soft or resilient or cushioning insert 40 may be directly formed or molded or mold-injected in the chamber 37 of the tool casing 30 for allowing the tool casing 30 and the insert 40 to be easily and quickly made or manufactured, and for preventing the insert 40 from being disengaged from the tool casing 30. The other tool casings 30 may be selectively or changeably attached or coupled to the support member 10 for holding or carrying other kinds of tool members.

[0045] As shown in FIG. 10, the tool casing 30 may be changeably attached or coupled to the other or different side

of the support member 10. As shown in FIGS. 11-12, alternatively, the tool casing 30 may be changeably attached or coupled to the front portion of the support member 10 and disposed laterally or horizontally relative to the support member 10 and arranged to have the cavities 41 of the insert 40 opened upwardly and/or downwardly for receiving and carrying various kinds of tool device 88 or tool elements 90, 91, such as the tool shank 89 of the tool device 88, the screws or bolts 90, the Allen wrenches 91, or the like.

[0046] As shown in FIGS. 13-17, the other tool casing 30 may include a number of studs or pegs or pins 38 extended therefrom, and a soft or resilient or cushioning sleeve 39 attached or engaged or molded or secured onto each of the pins 38 for engaging with the other tool members 70, such as the sockets 70 or the like. The sleeves 39 that are made of soft or resilient or cushioning members or materials may also be used to suitably clamp or grip or grasp and to solidly secure or retain the tool members 70 to the tool casing 30, for preventing the tool members 70 from being disengaged from the tool casing 30 even when the users are walking or bending over or jumping.

[0047] As shown in FIG. 18, the tool casing 30 may include a greater number of studs or pegs or pins 38 extended therefrom for attaching or supporting a greater number of tool members 70. It is to be noted that the typical tool holders failed to provide a casing 30 having a soft or resilient or cushioning insert 40 engaged therein for suitably clamping or gripping or grasping and for solidly securing or retaining the tool members 60 to the tool casing 30, or having a soft or resilient or cushioning sleeve 39 engaged onto each pin 38 for suitably clamping or gripping or grasping and for solidly securing or retaining the tool members 70 to the tool casing 30.

[0048] Accordingly, the tool holder in accordance with the present invention includes a structure for solidly retaining tool members to the tool holder and for preventing the tool members from being disengaged from the tool holder.

[0049] Although this invention has been described with a certain degree of particularity, it is to be understood that the present disclosure has been made by way of example only and that numerous changes in the detailed construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

I claim:

- 1. A tool holder comprising:
 - a support member,
 - a tool casing detachably attached to said support member, and including a chamber formed therein, and
 - an insert disposed in said chamber of said tool casing and made of a cushioning material and including a plurality of cavities formed therein for receiving tool members therein.

2. The tool holder as claimed in claim 1, wherein said tool casing is made of a material different from that for said insert.

3. The tool holder as claimed in claim 1, wherein said cavities of said insert include an inner diameter smaller than an outer diameter of the tool members for clamping the tool members.

4. The tool holder as claimed in claim 1, wherein said support member includes at least one hook extended from said support member for hooking said tool casing and for coupling said tool casing to said support member.

5. The tool holder as claimed in claim 4, wherein said tool casing includes a shaft attached thereto for engaging with said at least one hook of said support member.

6. The tool holder as claimed in claim 5, wherein said support member includes at least one link coupled to said shaft for coupling said shaft to said tool casing.

7. The tool holder as claimed in claim 6, wherein said tool casing includes at least one aperture formed therein and defined by said at least one link and said shaft for engaging with said at least one hook of said support member.

8. The tool holder as claimed in claim 1, wherein said tool casing includes at least one latch member extended therefrom for engaging with said support member and for detachably securing said tool casing to said support member.

9. The tool holder as claimed in claim 8, wherein said support member includes at least one lock notch formed therein for engaging with said at least one latch member of said tool casing.

10. The tool holder as claimed in claim 1, wherein said tool casing includes a plurality of pins extended therefrom, and a cushioning sleeve attached onto each of said pins for engaging with the tool members.

11. The tool holder as claimed in claim 1, wherein said support member includes an attaching device attached thereto for attaching to a user.

12. The tool holder as claimed in claim 1, wherein said support member includes a retaining member attached thereto for engaging with a tool device.

13. The tool holder as claimed in claim 12, wherein said support member includes at least one orifice formed therein, and said retaining member includes two end portions for engaging into said at least one orifice of said support member.

14. The tool holder as claimed in claim 13, wherein said retaining member includes a lock opening formed in each of said end portions, and said support member includes a catch member extended into said at least one orifice of said support member for engaging into said lock opening of said support member and for securing said retaining member to said support member.

* * * * *