Aug. 23, 1960 W. H. ODLUM ET AL Re. 24,862

WALL RACK FOR MECHANICS' TOOLS

Original Filed Sept. 14, 1954

FIG. 1

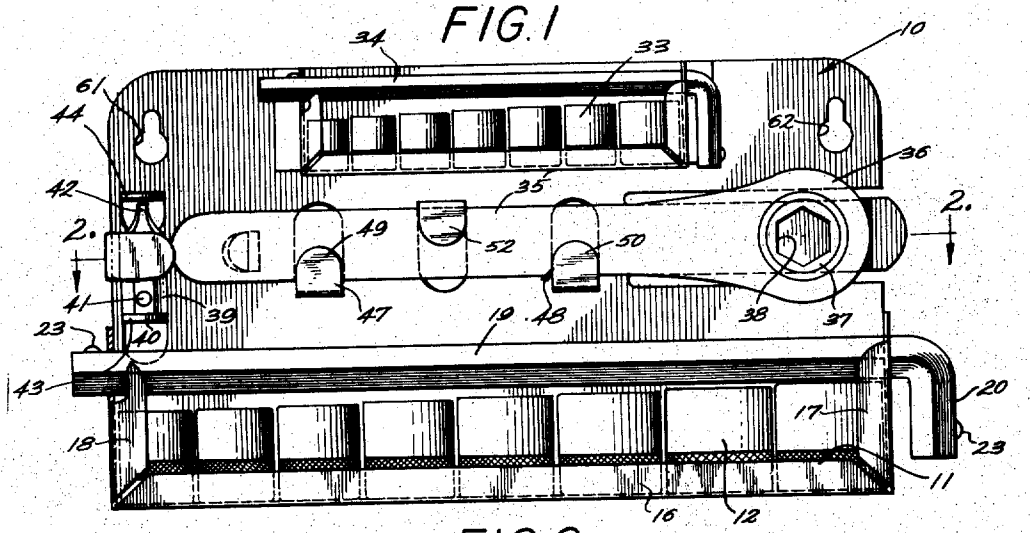


FIG. 2

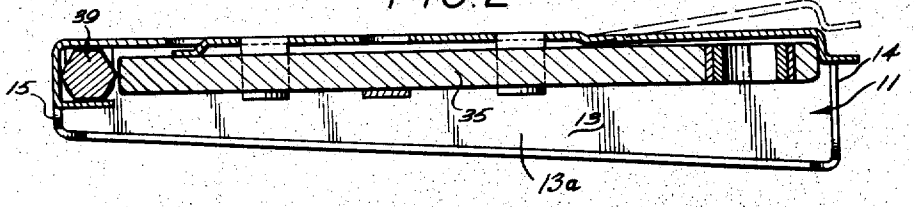
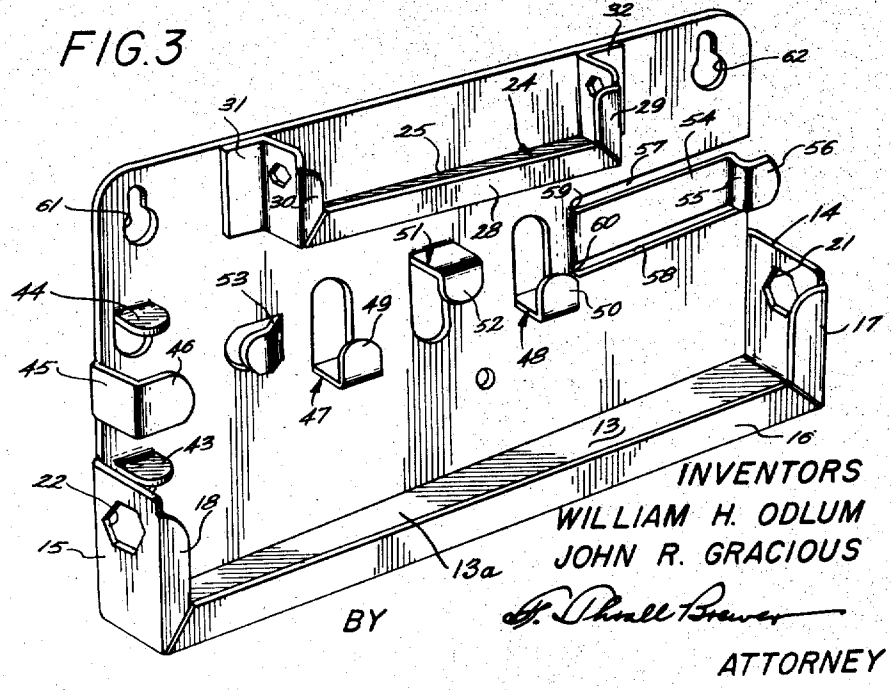


FIG. 3



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United States Patent Office

Re. 24,862

Reissued Aug. 23, 1960

24,862

WALL RACK FOR MECHANICS' TOOLS

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Original No. 2,841,289, dated July 1, 1958, Ser. No. 455,819, Sept. 14, 1954. Application for reissue Oct. 28, 1959, Ser. No. 849,423

10 Claims. (Cl. 211—87)

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.

This invention relates to a wall rack for mechanics' tools such as socket wrench sets or the like.

A popular form of socket wrench is a hollow metal cylinder having an opening at one end formed to fit snugly over the corners of a nut or bolt head, and an opening at the opposite end into which may be inserted the end of a lever by which the cylinder may be turned to tighten or loosen, as the case may be, the nut or bolt. To cover the sizes of nuts or bolts commonly encountered by a mechanic, some fifteen different cylinders are required, which poses a storage problem, not only for the cylinders, but for the levers as well.

The levers may take two forms, the first being generally a rod of hexagonal cross section having one end bent at right angles to the axis of the rod and adapted to engage the cylinder, and the second having a ratchet mechanism for driving the cylinder, there being a short adaptor which is inserted between the cylinder and the ratchet mechanism.

The holders usually supplied for socket wrench sets are comprised of a portable trough in which the cylinders are arranged in progressively increasing size. The operating lever is secured over the cylinders in a manner to retain them in the trough. Such holders make no provision for storing the ratchet lever and its adaptor. It is also customary to split the cylinders into two groups, with a separate holder and operating lever for each group. This increases the possibility of misplacing parts of each set and the difficulty of keeping track of the sets. The alternative is to use a metal chest or box which, of course, is more expensive and bulky.

The principal object of this invention is to provide a holder for a socket wrench set which is adapted to be affixed to a wall or the like to provide a convenient and stationary storage facility for the set.

Another object of this invention is the provision of a holder for a socket wrench set of the "loose" cylinder type which is arranged to store the cylinders in a fixed horizontal position to prevent inadvertent spilling of the cylinders not currently being used.

A specific object of this invention is the provision of a holder for a socket wrench set of the "loose" cylinder type which is adapted to hold a ratchet type operating lever for the cylinders as well as the usual bar type lever.

Among the general objects of this invention is the provision of a holder for a socket wrench set that is made for the most part as a single piece stamping, which holds the parts of the set accessibly, which holds a ratchet lever in resilient clamping engagement, and which is economical to make and durable in use.

These and other objects of this invention will become apparent from the following detailed description when taken together with the accompanying drawings in which:

Fig. 1 is a front elevational view of a holder made in accordance with this invention and illustrating how the socket wrench set is disposed and held therein;

Fig. 2 is a plan view in section of the holder of Fig. 1, the section being taken along line 2—2 thereof; and

Fig. 3 is an elevational view in perspective of the holder alone.

Referring now to the drawings for a detailed description of the invention, the holder is comprised of a substantially rectangular metal plate **10** the bottom region of which is formed into a shallow trough or retainer **11** to receive a plurality of individual cylindrical sockets **12** arranged in the trough in accordance with progressively increasing sizes of their diameters. Trough **11** is formed by bending forwardly, and substantially at right angles with the plane of plate **10**, bottom and side flanges **13**, **14** and **15**, respectively, the ends **16**, **17**, **18**, respectively, of the flanges being bent transversely to form the outer sides of the trough. The bottom of the trough is formed by flange **13** and is made of trapezoidal configuration, i.e. wider at the right hand end (Fig. 2) than at the left hand end thereof, to conform to the progressively larger diameters of the sockets **12** which it is to retain.

The bar type lever for operating the sockets is shown at **19** and is of the usual hexagonal cross section. It has one end **20** bent at right angles to the axis of the bar for insertion into the driving end of the sockets. Bar **19** is longer than trough **11** and extends through hexagonal openings **21** and **22** (Fig. 3) beyond the ends of the trough. Ball type spring [latches] *latch* **23** on the left end *of said bar 19,* and [in] *bent* end **20** on the right, hold *the* bar [**19**] in place *against free lateral movement through openings 21 and 22,* in side flanges **15** and **14**. Sockets **12** are retained in trough **11** by bar **19**.

A similar trough or retainer **24**, but of a smaller size, is provided at the top central region of plate **10**. Said smaller trough is formed as a single stamping having a similarly trapezoidal bottom **25**, upwardly extending sides **26** and **27**, transversely extending retaining flanges **28**, **29**, **30** and a pair of outwardly disposed attaching flanges **31** and **32** by which the stamping is secured to plate **10**. Trough **24** is used to hold the smaller sizes of sockets **33** which are retained in the trough in a similar fashion by a thinner hexagonal bar **34**. The largest of the sockets **33**, is, of course, smaller than the smallest socket **12** so that the widest part of trapezoidal bottom **25** is no larger than the smallest part of the trapezoidal bottom **13a** of trough **11**.

For faster operation in turning the sockets it may be desirable to provide a ratchet type lever which operates in conjunction with an adaptor taking the place of the operative end **20** of the bar **19** in the openings normally provided for said end **20**. The rack of this invention is provided with means for resiliently retaining the ratchet lever and the adaptor in a convenient manner.

The lever is shown in Figs. 1 and 2 and is comprised of a handle **35** which may be either solid, or made of a pair of complementary stampings secured together, and a head **36** shown at the right hand end of lever **35** in Figs. 1 and 2. Within head **36** is a rotatable barrel **37** having a substantially hexagonal opening **38** centrally disposed therein. A ratchet mechanism (not shown) is interposed between head **36** and socket **37** for providing a one-way drive between the head and socket. The direction of drive may be reversed merely by reversing the side of socket **37** adjacent the nut or bolt to be turned.

The adaptor is comprised of a short length **39** of hexagonal bar stock of substantially identical cross section to the end **20** of the bar **19**. One end **40** of the adaptor is made substantially flat and is provided with the usual spring detent **41** for retaining the adaptor in a socket. The other end of the adaptor is ground to a taper to

provide a screw driver **42** which may be used to turn machine screws or the like.

The adaptor is supported on rack **10** by a tab **43** which is struck inwardly from the central left hand region of the rack. A similar tab **44** disposed above the adaptor confines the latter to the space between the two tabs. A finger **45** extending from the left hand edge of rack **10** (Fig. 3) is bent at right angles to the general plane of rack **10** and has its end **46** bent backward upon, and spaced from, the general surface of the rack. Said finger **45** and its reversely bent end **46** serve to confine adaptor **39** on two sides.

Ratchet lever **35** is supported on rack **10** between trough **24** and bar **19** by spaced tabs **47**, **48** having upwardly bent ends **49** and **50**, respectively, forming hooks on which lever **35** rests. A similar tab **51**, having a downwardly bent end **52**, serves to retain lever **35** on its supporting tabs **47**, **48**.

Lever **35** is resiliently held against the bent over ends **49**, **50** and **52** by an angularly disposed finger **53** struck inwardly from the front surface of rack **10** and adapted to exert a resilient force upon the back of lever **35** in the direction of the ends **49**, **50** and **52**. It is contemplated, however, that finger **53** will be relatively stiff and will be initially so formed and disposed relative to ends **49**, **50** and **52** that lever **35** may be slid between said ends and finger **53**. At the right hand end of lever **35**, however, is formed a spring finger **54** having its free end bent at right angles to the plane of rack **10** and then parallel thereto as at **55** and **56** respectively. The right angle portion **55** forms a retaining wall for the right hand end (Fig. 1) of lever **35**. Said retaining wall **55** is so disposed relative to the length of lever **35** that the lever will normally be held in close proximity to adaptor **39** and will effectively retain adaptor **39** within the confines of finger **45** and its reversely bent end **46**.

It may be noted that slots **57** and **58**, with smoothly rounded ends **59** and **60**, respectively, are cut into rack **10** to provide ample clearance for movement of finger **54** transversely of the plane of rack **10** without creating fatigue cracks at the juncture between finger **54** and rack **10**.

It is contemplated that lever **35** will be inserted behind the ends **49**, **50** and **52** by resiliently forcing the free end **56** of finger **54** backward, that is, transversely of the plane of rack **10**, until the left hand end of lever **35**, as viewed in Fig. 1, can be pushed to substantially the position shown in that figure, whereupon the resilience of finger **54** will cause it to snap forward, thereby bringing wall **55** alongside the right hand end of lever **35** and retaining said lever in place on the rack as well as confining adaptor **39** to its particular location on the rack. When it is desired to remove lever **35** from the rack, pressure is exerted upon end **56** transversely of the plane of rack **10** until lever **35** clears the forward edge of wall **55**, whereupon said lever may be moved to the right as viewed in Fig. 1 until it is substantially free of the rack. When lever **35** is removed, adaptor **39**, of course, may also be removed, and since the two are invariably used together, there is no need to provide a holding means for the adaptor separate from lever **35**.

It may be observed that the construction of the rack is such that all of the parts thereof are securely held in place, no matter what the position of the rack. Thus the rack may be placed horizontally in a tool kit without danger of the various sockets, operating bars, lever and adaptor working loose and becoming lost. However, it may be desirable to hang the rack on a wall near the operator's bench in which event keyhole slots **61**, **62** are provided in the upper corners of the rack by which the rack may be removably secured to hooks, screws, nails or the like fastened to a wall.

It is understood that the foregoing description is merely illustrative of the preferred embodiment of this invention and that the scope of the invention therefore is not to be limited thereto but to be determined by the appended claims.

We claim:

1. A holder for a plurality of socket wrenches, said holder comprising an upstanding plate having flanges extending forwardly and substantially normally to the plane of the plate from its bottom edge and from the side edges adjacent the bottom edge to form the bottom and sides of a first retainer for a plurality of wrench sockets, a strip of sheet metal disposed above the said first retainer and having a horizontal section and flanges overlying and secured to the plate, said strip forming with the plate the bottom of a second retainer for a plurality of wrench sockets disposed above the first-mentioned retainer, a tab struck outwardly and downwardly from the plate, and laterally spaced tabs struck outwardly and upwardly from the plate at regions below and one on either side of the first-mentioned tab, all of said tabs being constructed to receive and hold between them the handle of a tool or the like, said flange extending from the bottom edge and said horizontal section of the strip having upstanding edges constituting retaining walls for wrench sockets supported on said bottom edge flange and horizontal section, and said bottom edge flange and horizontal section being of trapezoidal configuration, the greatest width of the horizontal section being substantially equal to the smallest width of the bottom edge flange to provide in effect a split retainer for a plurality of wrenches of progressively varying sizes.

2. A holder as described in claim 1, said strip being U-shaped and having sides extending upwardly from the ends of the horizontal section, said flanges on the strip overlying and secured to the plate being formed on the upwardly extending sides of the strip, and the bottom section of the strip being vertically spaced from the flanges extending forwardly from the side edges of the plate.

3. A holder as described in claim 1, said tabs being disposed below the strip and above the flanges extending forwardly from the side edges of the plate such that the said tool handle is disposed between the retainers for the wrenches said plate extending laterally of each side of the strip and having openings in such lateral extensions to receive a wall-mounted support or the like.

4. A holder as described in claim 1, said plate having additionally latching means formed thereon and cooperating with the wrench handle for holding said handle against lateral movement in one direction with respect to the plate.

5. A holder as described in claim 1, and said plate having in addition a lateral tab and top and bottom tabs formed in one side thereof to receive and support a wrench adaptor, said tool handle when mounted in its respective tabs serving to confine the adaptor between its said lateral, top and bottom tabs.

6. A holder as described in claim 1, said plate having friction means for holding said tool handle against portions of said tabs.

7. A holder as described in claim 1, said strip being secured to the forward side of the plate such that the plate forms a common rear wall for both retainers.

8. A holder for a plurality of socket wrenches, said holder comprising an upstanding plate having flanges extending forwardly and substantially normally to the plane of the plate from its bottom edge and from the side edges adjacent the bottom edge to form the bottom and sides of a retainer for a plurality of wrench sockets, a tab struck outwardly and downwardly from the plate, and laterally spaced tabs struck outwardly and upwardly from the plate at regions below and one on either side of the first-mentioned tab, all of said tabs being disposed above the flanges extending from the side edges of the plate and constructed to receive and hold between them the handle of a wrench or the like, and latching means formed on the plate and cooperating with the wrench

handle for holding said handle against lateral movement in one direction with respect to the plate.

9. A holder as described in claim 8, said latching means comprising a spring finger on the plate having a forwardly extending wall constructed to extend into the path of movement of the wrench handle laterally of the plate.

10. A holder as described in claim 8, said plate having in addition top and bottom tabs formed in one side thereof and extending horizontally from said plate to receive and support a wrench adaptor, a lateral tab extending from the plate between the top and bottom tabs, said top, bottom and lateral tabs being located remote from said latching means and defining the top, bottom and one side of a space which is in at least partial alignment with the wrench handle, said wrench handle when mounted in its respective tabs serving to confine the adaptor between its said lateral, top and bottom tabs, and said latching means comprising a spring finger on the plate having a forwardly extending wall constructed to extend into the path of movement of the wrench handle laterally of the plate.

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