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(54) **PORTABLE WORK STAND**

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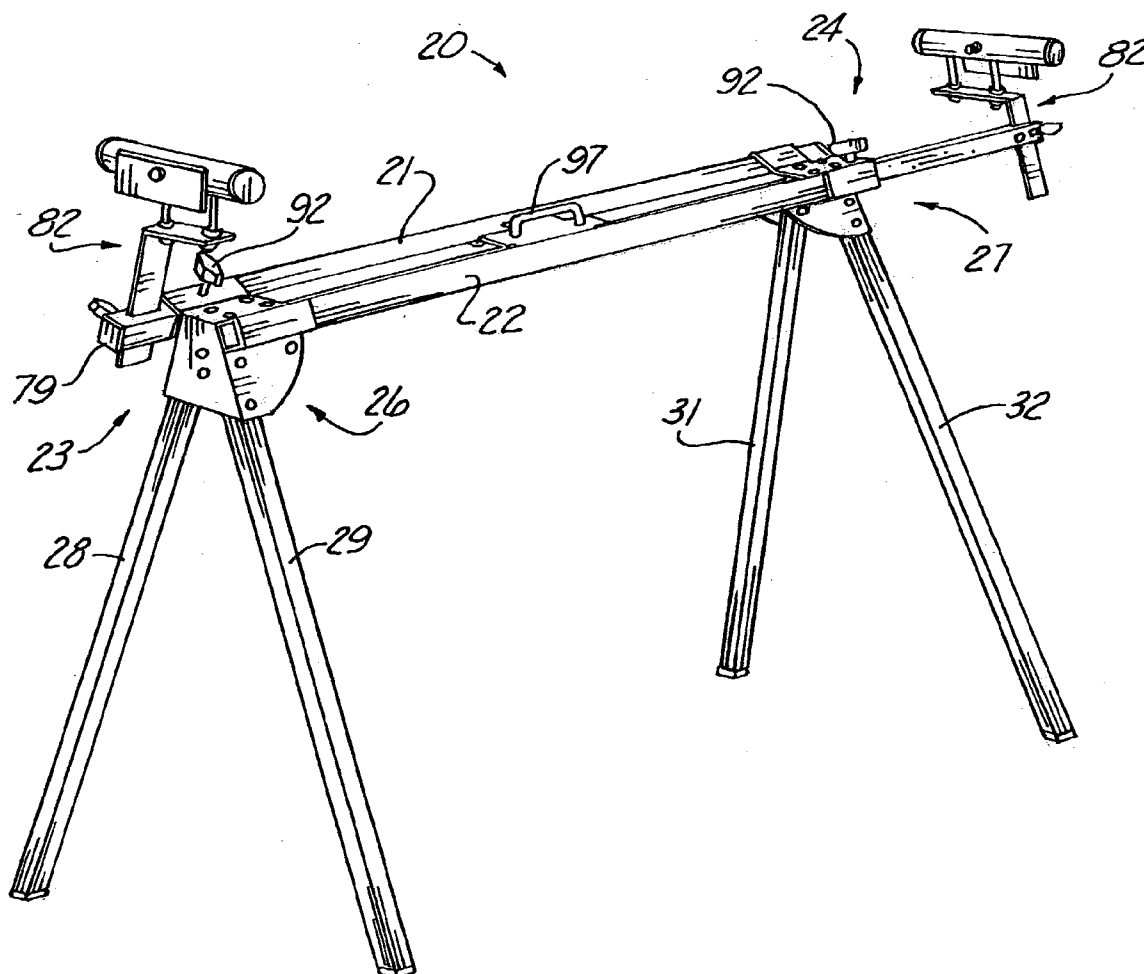
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(57) **ABSTRACT**

A work stand assembly for supporting the mounting unit of a contemporary portable power tool, which assembly has a pair of elongated members attached in a parallel manner to bracket units at each set of ends of the members, with the bracket units supported above a ground surface by collapsible legs, and with the portions of the members intermediate the bracket units exposed for directly receiving and clamping the mounting unit.

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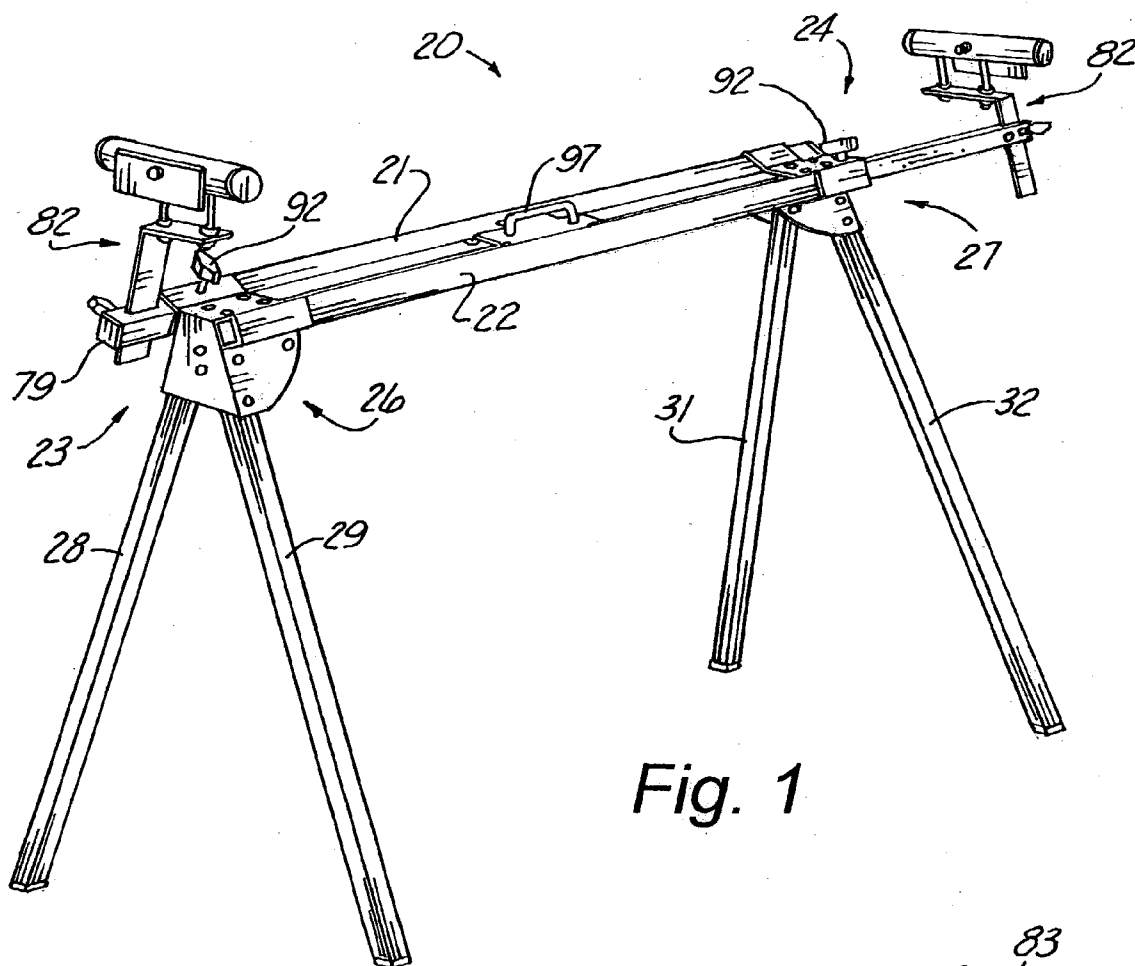


Fig. 1

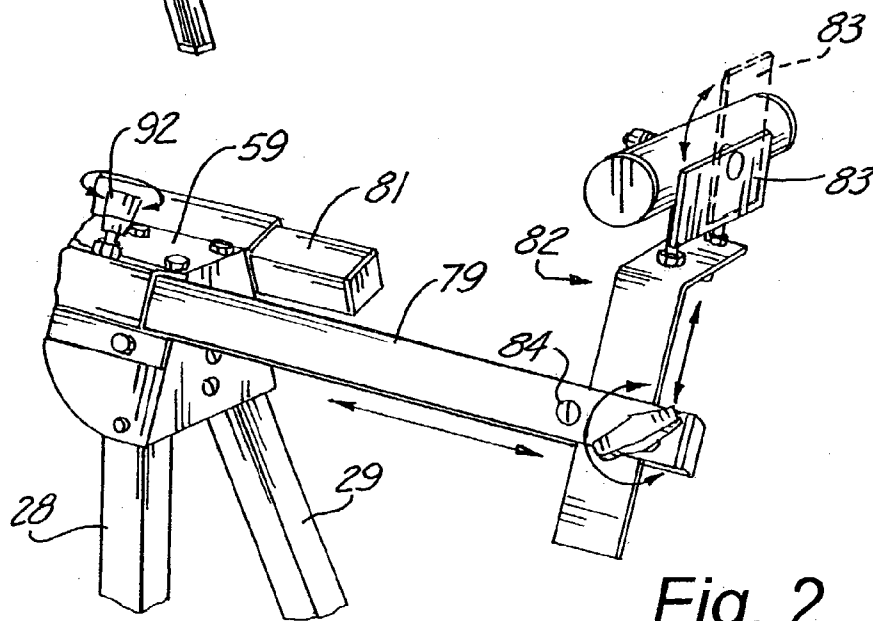
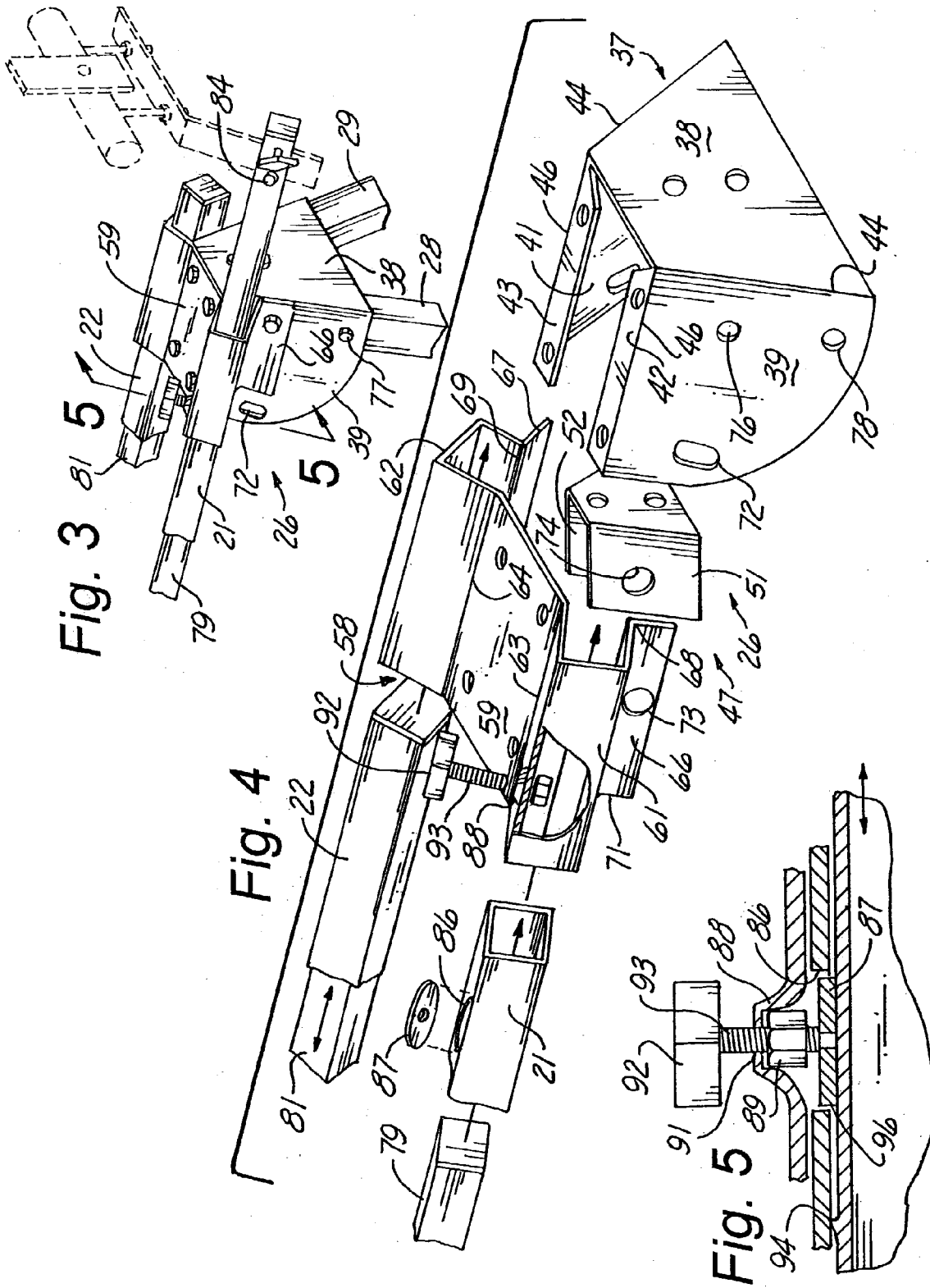


Fig. 2



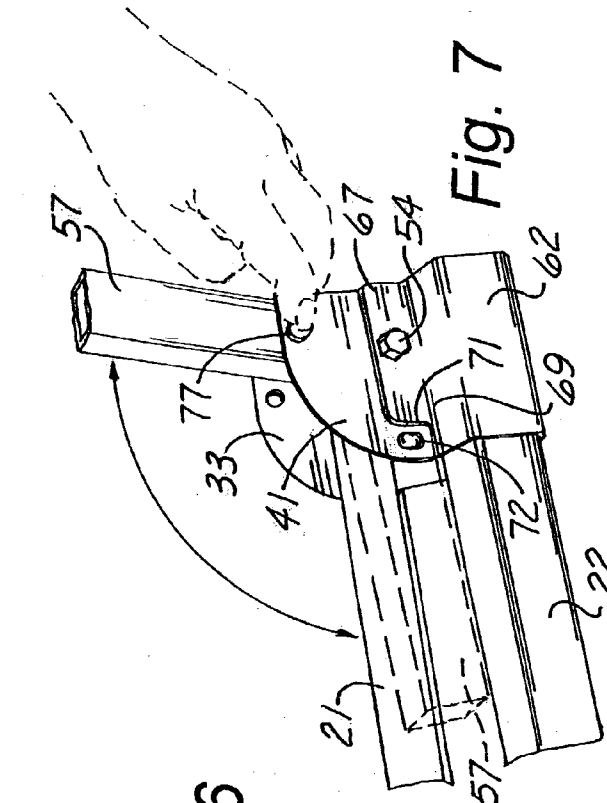


Fig. 6

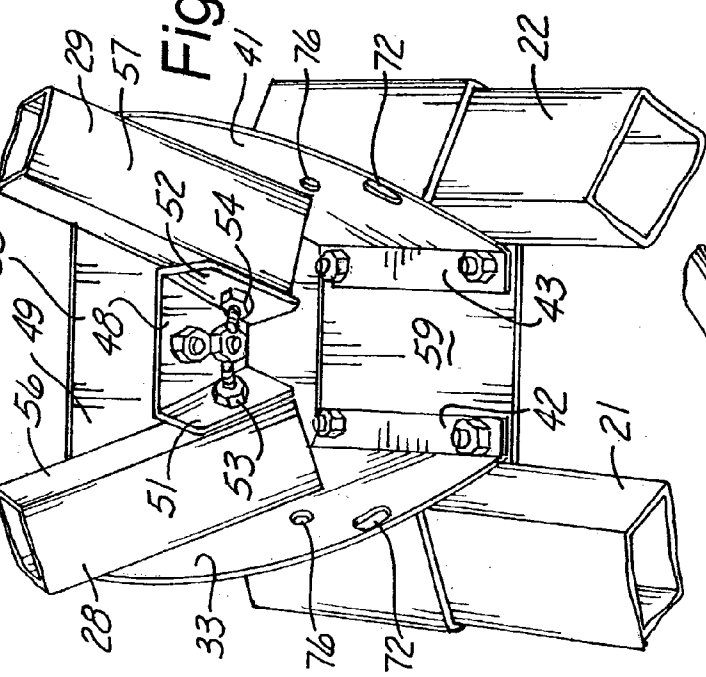


Fig. 7

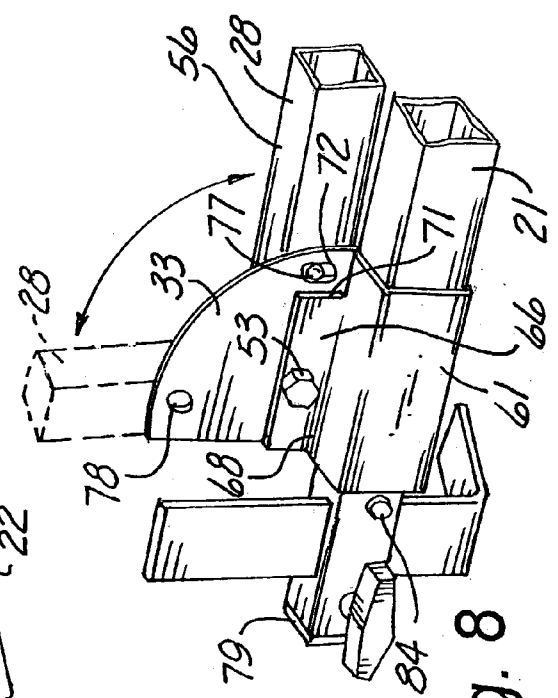


Fig. 8

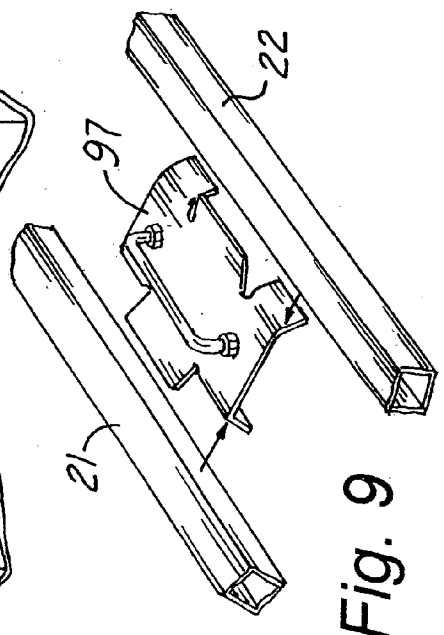


Fig. 9

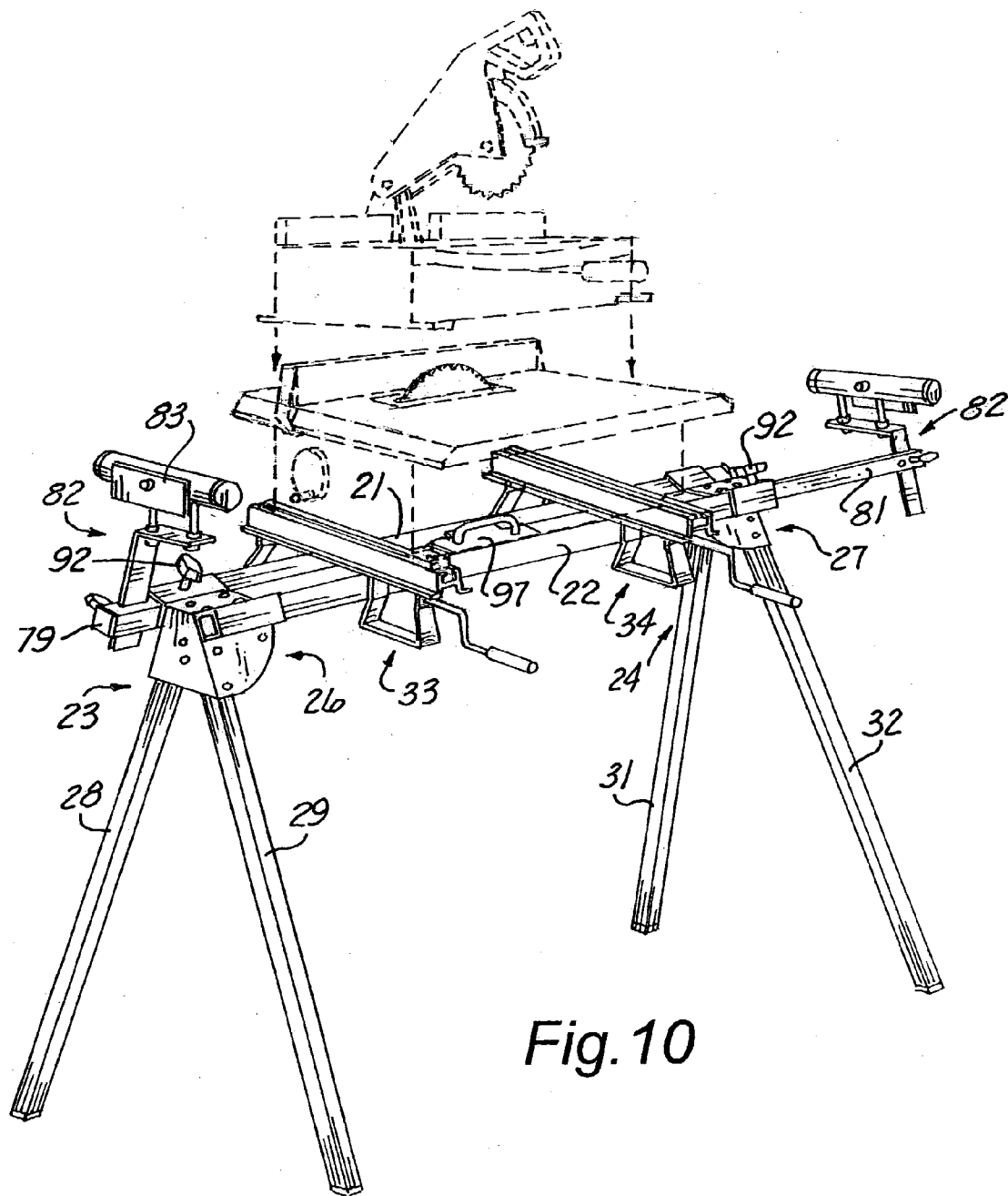


Fig. 10

PORTABLE WORK STAND

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] Not Applicable

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Not Applicable

BACKGROUND OF THE INVENTION

[0003] 1. Field of the Invention

[0004] The present invention relates generally to a collapsible work stand having a universal mounting assembly for supporting a portable power tool.

BACKGROUND ART

[0005] 2. Description of the Background

[0006] The conventional work stand for supporting portable power tools for wood working purposes has invariable comprised what is generally known as a sawhorse, a collapsible table with a flat top or cover secured between end brackets and on which usually is mounted a board, set of rails or other type of bench top for receiving and supporting structure for in turn supporting a wood working tool.

[0007] Examples of the former are shown in two of my prior inventions; U.S. Pat. Nos. 5,119,903 issued Jun. 9, 1992 and 5,626,3321 issued May 6, 1997. The '903 patent discloses a collapsible sawhorse apparatus having an elongated crossmember supported by pairs of collapsible legs, a conventional 2x4 wood member mounted on the crossmember, typifying the "sawhorse" of the day for supporting one or more types of wood working tools.

[0008] The '321 patent discloses an improvement of the earlier sawhorse assembly in the provision of a pair of novel clamping assemblies for slidable and adjustable attachment to the sawhorse board for receiving and supporting the wood working power tool.

[0009] Structure for both of these assemblies remain today, however, which is not only unnecessary from a manufacturing standpoint, but cumbersome in use as to excess material, weight and ease of use. It is to the elimination of these unnecessary elements and a continued improvement of this type of structure to which this invention is directed.

BRIEF SUMMARY OF THE INVENTION

[0010] The present invention is directed to a work stand assembly for supporting the mounting unit of a contemporary portable power tool, in the present instance a pair of elongated clamping units adapted to be mounted in parallel relationship normal to the longitudinal extent of the top of the work stand, the assembly having a pair of elongated members of substantially identical length disposed in parallel and attached at each set of ends to bracket units, with the bracket units supported above a ground surface by collapsible legs, and with portions of the members intermediate the bracket exposed for directly receiving and clampingly supporting the clamping units, thus eliminating the

need for either a crossmember in the nature of a top piece or a wooden or other material plank or board for supporting the tool mounting assemblies.

[0011] The bracket units are identical, each unit including an end bracket to which the legs are pivotally connected, and a cap member secured to the end bracket and having opposed channel-shaped sides each of which forms an elongated chamber with an adjacent side of the attached bracket for receiving one end of a respective member, the other chamber receiving an end of the other member, the opposed ends of the members inserted through the chambers formed by the other cap member and end bracket. Extensions may be telescopically connected to the opposed ends of the elongated members for adjustably extending each end of the work stand for working with longer pieces of wood or the like.

[0012] A primary object of the present invention is to provide a new end novel work stand for supporting a portable power tool.

[0013] Yet, another object of the present invention is the provision of such a work stand wherein a sawhorse cover of contemporary usage is eliminated.

[0014] Still another object of the present invention is the provision of such a work stand wherein the contemporary use is eliminated of a wooden beam, plank or the like to which a mounting assembly for a portable power tool is attached.

[0015] Another object of the present invention is the provision of a work stand wherein merely a pair of elongated parallel members supported between sets of collapsible legs is sufficient for directly clampably receiving and supporting a mounting assembly for a portable power tool.

[0016] Other objects, advantages and novel features of the present invention will become apparent from the following detailed description of the invention when considered in conjunction with the accompanying drawings

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] FIG. 1 is a perspective view of the present invention;

[0018] FIG. 2 is a fragmentary perspective view of a detail of the present invention;

[0019] FIG. 3 is a fragmentary perspective expanded view of the detail of FIG. 2, with certain parts shown in phantom;

[0020] FIG. 4 is an enlarged exploded perspective view of the element of FIG. 3;

[0021] FIG. 5 is an enlarged, fragmentary sectional view taken along the line 5-5 in FIG. 3;

[0022] FIG. 6 is an enlarged fragmentary perspective view of the detail of FIG. 3, taken from below as viewed from right-to-left;

[0023] FIG. 7 is a fragmentary, perspective view of the detail of FIG. 6, with movement of a supporting leg being illustrated;

[0024] FIG. 8 is a fragmentary, perspective view of the detail of FIG. 7 as viewed from the opposite side;

[0025] FIG. 9 is a fragmentary, perspective detail of the center portions of the elongated tool mounting assembly members of the work stand; and

[0026] FIG. 10 is a perspective view of the work stand with mounting assemblies attached thereto for supporting a pair of power tools such as a table saw and a miter saw, the latter shown in dash lines.

DETAILED DESCRIPTION OF THE INVENTION

[0027] Referring now to the drawings, where like reference numerals designate identical or corresponding parts throughout the several views, the collapsible work stand assembly of this invention is indicated generally at (20) in FIG. 1.

[0028] The work stand assembly (20) comprises generally first and second elongated tubular frame members (21), (22) disposed in parallel relationship to each other and having opposed sets (23), (24) of ends, a first bracket unit (26) supporting one set (23) of frame member ends and a second bracket unit (27) supporting the other, opposed set of frame member ends.

[0029] A first pair of support legs (28), (29) and a second pair of support legs (31), (32) are provided for supporting the frame members (21), (22) and the bracket units (26), (27) above a ground or floor surface (not shown) wherein the frame members (21), (22) are disposed in a substantially horizontal manner. The frame members (21), (22) are uncovered and exposed intermediate their opposed sets (23), (24) of ends which are held by the bracket units (26), (27) for directly clampably receiving and supporting a pair of mounting assemblies (33), (34), for supporting a portable power tool, shown in dash lines at (36).

[0030] As each bracket unit (26), (27) is identical, only one bracket unit (26) (FIGS. 2-4) will be described. The unit (26) comprises a trapezoidal shaped bracket (37) having a flat end piece (38), with flat side pieces (39), (41) and upper top pieces (42), (43); the side pieces (39), (41) extended at right angles to opposed edges (44) of the end piece (38) and the top pieces (42), (43) extended inwardly in a common plane from the upper edges (46) of the side pieces (39), (41).

[0031] A substantially U-shaped fastener (47) (FIG. 6) has a flat backing portion (48) which is secured against the inside face (49) (FIG. 6) of the end piece (38), and outwardly extended wing portions (51), (52) for pivotal attachment by pivot bolts (53), (54) to the upper ends (56), (57) of each pair of support legs (28), (29) and (31), (32).

[0032] The bracket unit (26) includes further a cap member (58) having a flat middle portion (59) with opening for attaching the portion (59) to the bracket top pieces (42), (43) (FIG. 3); opposed, U-shaped channel portion (61), (62) extended outwardly and slightly upwardly from the outer edges (63), (64) of the middle portion (59); and opposed flat flanges (66), (67) extended downwardly at right angles from the lower edges of (68), (69) of the channel portions (61), (62). Each flange (66), (67) has a cut-out (71) (FIG. 7) for exposing a slotted opening (72) in a contiguous side piece (39), (41); and has further an opening (73) for alignment with an opening (74) (FIG. 4) in each fastener wing portion (51), (52) and an opening (76) in each bracket side piece (39), (41) through which a leg pivot bolt (53) or (54) is fastened.

[0033] It will be noted that when the cap member (58) is secured to the bracket (37) each channel portion (61), (62) forms an elongated chamber with an adjacent side piece (39), (41) for receiving, respectively, the outer ends of the frame members (21), (22) in parallel relationship.

[0034] Referring to FIGS. 7 and 8, it will be seen that each upper end (56), (57) of each pair of legs has a locking button (77) for automatically snapping into the slotted opening (72) formed in each bracket side piece (39), (41) for locking and holding a respective leg (28) or (29) in substantial parallel alignment with the frame members (21), (22) and with a companion leg, and which button (77) may be manually depressed such that the leg may be moved 90° to a work stand supporting position as shown in full lines in FIG. 7, the button (77) then aligned with the opening (78) formed in each bracket side piece (39), (41) below the upper opening (76). With the leg button (77) snapped into the opening (76), the respective leg is locked and held in its supporting position.

[0035] When folded, the two sets of legs (28), (29) and (31), (32) are aligned in parallel positions below the frame members (21), (22), in another embodiment one set of legs may be slightly bent, as provided in the '903 patent, at their upper ends to provide a neatly stacked condition for storage and transportation.

[0036] To extend the length of the work stand assembly (20) at either or both ends; an elongated extension member (79), (81) (FIG. 4) is provided for each tubular frame member (21), (22), each extension member (79), (81) slightly smaller than the frame member (21), (22) and the same cross sectional shape for ease of telescopic movement therein. Adjustable work support units (82) (FIG. 10) with flip stops (83) may be attached to the extension members (79), (81) and each member (79), (81) is provided with a stop element (84) to prevent the member (79), (81) from being moved too far into a respective frame member (21), (22).

[0037] To releasably lock an extension member (79), (81) within a respective frame member (21), (22), each frame member (21), (22) has an opening (86) (FIG. 5) formed in an end (23) thereof, for example, which end (23) is normally disposed within the longitudinal confines of a cap member (58), and within which a flat washer (87) is loosely but snugly placed. Above the opening (86), the cap member (58) is embossed at (88) for receiving a jam nut (89), the embossment (88) open at (91) for receiving an adjustable knob (92), its stem (93) threaded for insertion through the jam nut (89) and engagement with the washer (87). With the jam nut (89) fitted into the underside of the embossment (88), the knob (92) functions as a jack screw such that a tightening of the washer (87) against the extension member (79), (81) thereunder effectively locks the member into place within its respective frame member (21), (22). Upon a loosening of the knob (92), thus backing off pressure of the knob stem (93) and washer (87) upon the extension member (79) or (81), the respective extension member may be longitudinally re-adjusted as to its location within its respective frame member (21) or (22).

[0038] To prevent an extension member (79), (81) from inadvertently being pulled too far outwardly off a frame member (21), (22), a protruding lip (94) (FIG. 5) is formed on an upper surface of and spaced inwardly from an adjacent

end of the extension member (79), (81) a predetermined distance. Although the lip (94) does not prevent the extension member (79), (81) from being telescopically inserted into a respective frame member (21), (22) with the washer (87) in place, upon the extension member (79), (81) being pulled outwardly a certain distance, the lip (94) will engage an edge (96) of the washer (87) and prevent further outward movement of the respective extension member (79), (81). Inward movement of an extension member (79), (81), however, is not prevented.

[0039] To aid in carrying and transporting the work stand assembly, a handle member (97) (FIGS. 1 and 9) is provided, the member (97) having flange elements for frictionally clamping the member (97) between and to the frame members (21), (22) at central their lengths.

[0040] It is this seen that at least all of the stated objectives have been achieved. Obviously, many modifications and variations of the present invention are possible in the light of the aforementioned teachings. It is therefore to be understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically claimed.

I claim:

1. A collapsible work stand assembly, comprising:

first and second end brackets;

a first pair of support legs each connected to said first end bracket and pivotally moveable from an upright, ground engaging first position to a normally horizontally extended second position, said first support legs disposed parallel each other in said second position;

a second pair of support legs each connected to said second end bracket and pivotally movable from an upright, ground engaging first position to a normally horizontally extended second position, said second support legs disposed parallel each other in said second position of said second support legs;

a first cap member secured to said first end bracket;

a second cap member secured to said second end bracket;

a first elongated frame member having opposed ends connected respectively to said first and said second cap members; and

a second elongated frame member having opposed ends connected respectively to said first and second cap members, whereby said first and second frame members are disposed parallel each other.

2. The collapsible work stand assembly of claim 1, and further wherein said first and second frame members each

have opposed ends, a first elongated extension member is telescopically inserted into said opposed end of said first frame member, and a second elongated extension member is telescopically inserted into said opposed end of said second frame member.

3. The collapsible work stand assembly of claim 2, and further wherein said first and second cap members are substantially identical, each cap member having opposed sides, each side having a channel shape forming an elongated chamber with said bracket to which said respective cap member is secured, whereby each cap member forms a pair of parallel chambers for receiving said pair of frame members.

4. The collapsible work stand assembly of claim 1, and further wherein said first and second frame members are completely exposed intermediate their connections to said end brackets for clampably receiving and supporting the mounting unit of a contemporary power tool.

5. A collapsible work stand assembly, comprising:

a pair of elongated members disposed in parallel relationship to each other, said members having opposed sets of ends;

first bracket means supporting one said set of opposed ends;

second bracket means supporting the other said set of opposed ends; and

means for supporting said pair of members above a ground surface wherein said members are substantially horizontally disposed;

said elongated members exposed intermediate their opposed ends for clampably receiving and supporting the mounting unit of a contemporary power tool

6. The collapsible work stand assembly of claim 5, and further wherein said opposed ends of said elongated members are also exposed, and first and second pairs of extension members are telescopically inserted, respectively, into said opposed ends of said elongated members.

7. The collapsible work stand assembly of claim 6 and further wherein first means mounted on said first bracket means is engageable with an extension member of said first pair of extension members to limit movement of said extension member relative to said first bracket means, and second means mounted on said second bracket means is engageable with an extension member of said second pair of extension members to limit movement of said extension member of said second pair relative to said second bracket means.

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