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Castellano

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[54] **AUTO BODY PARTS HANDLER**

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[52] **U.S. Cl.** ..... **214/1 D,** 269/134, 269/156

[51] **Int. Cl.** **B23q 3/18**

[58] **Field of Search** ..... 269/50, 17, 156, 269/134, 296; 214/1 R, 1 D, 1 SW, 1 H; 254/134

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Assistant Examiner—Frank E. Werner
Attorney—Harvey B. Jacobson

[57] **ABSTRACT**

An elongated generally horizontal base having a pair of transverse lift arms supported therefrom for adjustable angular displacement relative to the base about axes extending transversely of the arms intermediate their opposite ends and longitudinally of the base. One pair of corresponding ends of the arms project outwardly of one side of the base and are provided with structure for engaging and supporting a vehicle body portion therefrom. Also, the structure is operatively connected between the base and the arms for adjustable angularly displacing the latter and the base further includes a mounting bracket spaced longitudinally of the base between the arms and from which the lower end of an upright is supported for adjustable angular displacement about an axis extending longitudinally of the base. A bracket is carried by the upright for adjustable positioning therealong and includes an adjustable portion angularly adjustable about an axis extending transversely of the upright and longitudinally of the base from which a workpiece locating arm is supported for adjustable longitudinal shifting and with one end of the workpiece locating arm projecting outwardly of that side of the base outwardly from which the workpiece supporting ends of the lift arms project.

3 Claims, 7 Drawing Figures

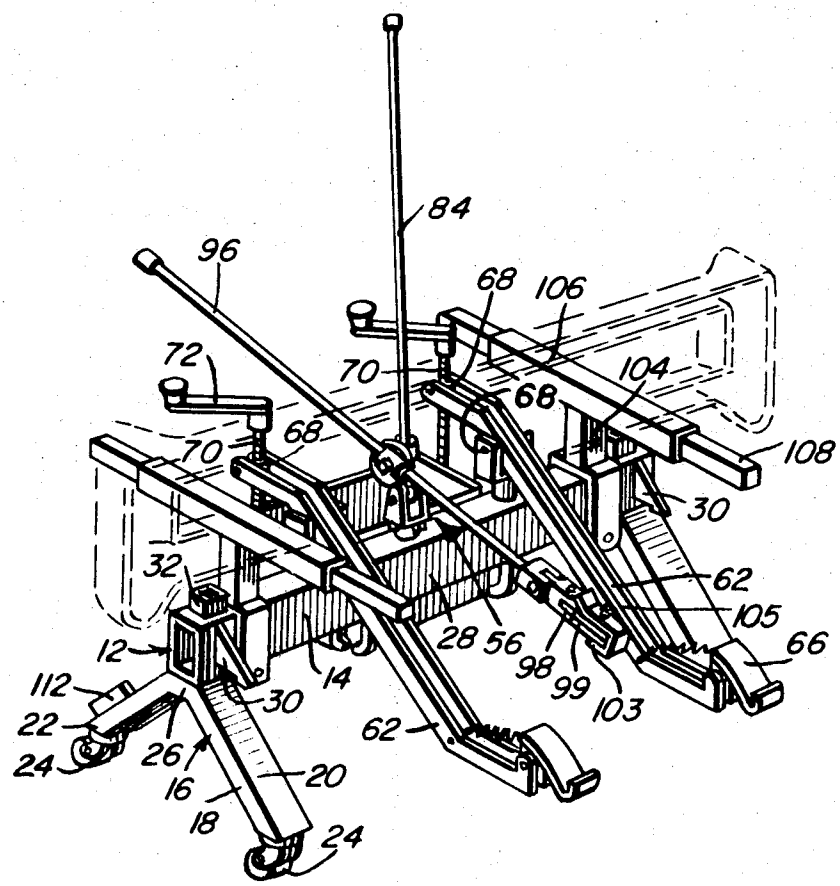


Fig. 1

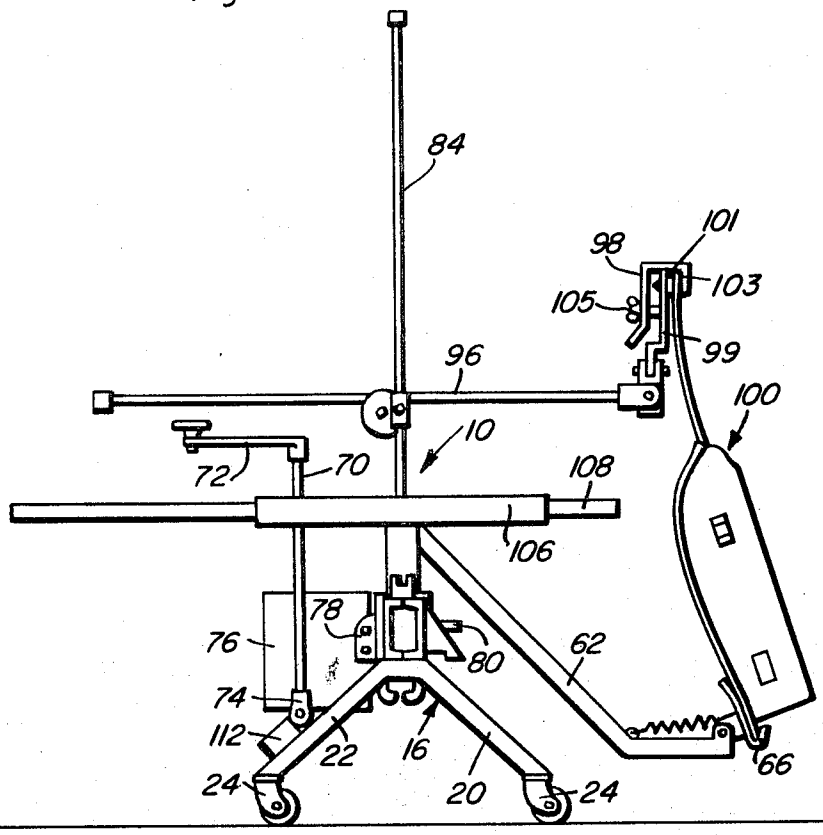

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Fig. 6

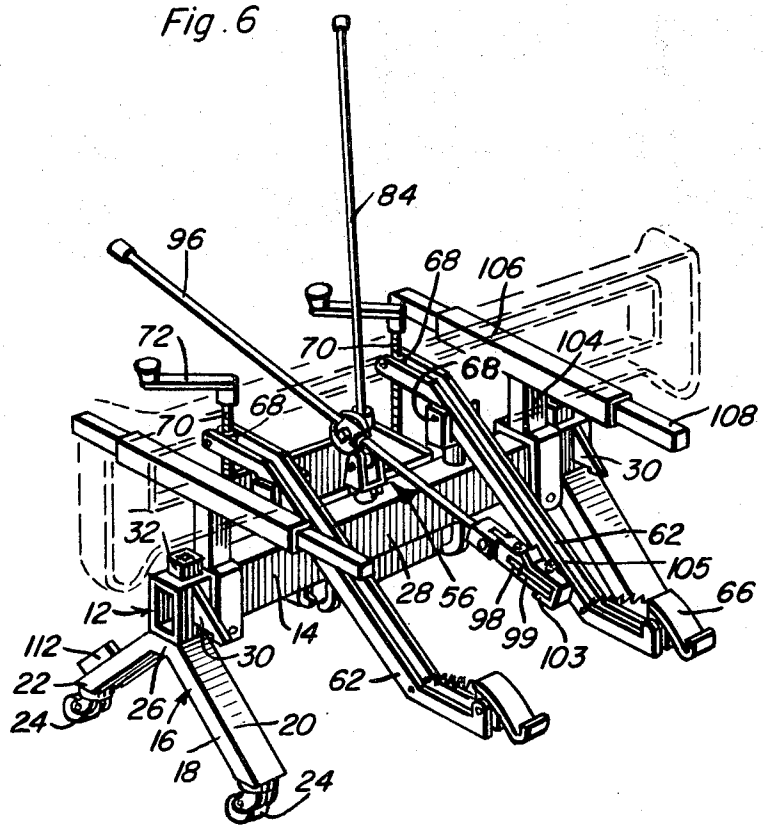

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Fig. 2

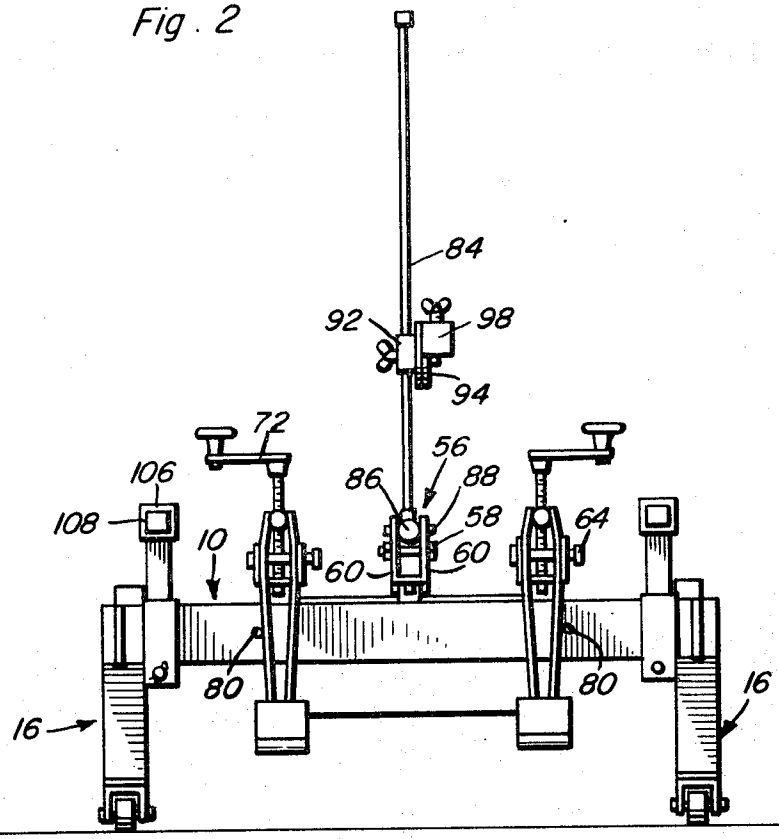


Fig. 3

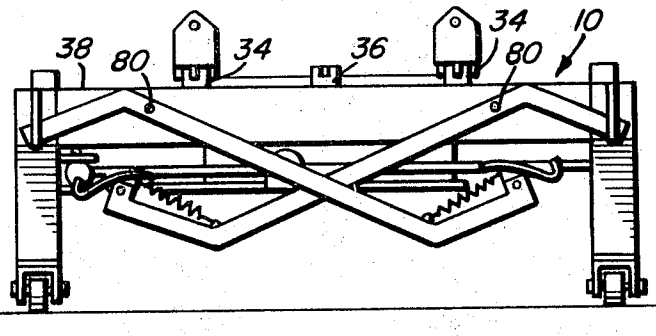


Fig. 7

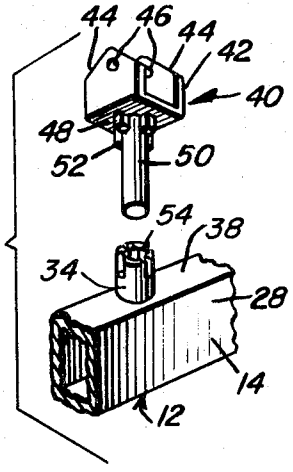


Fig. 4

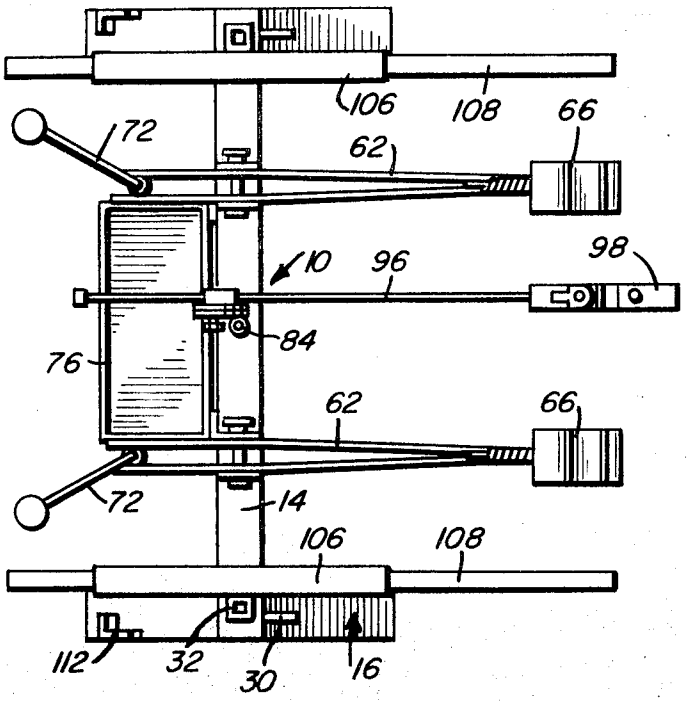
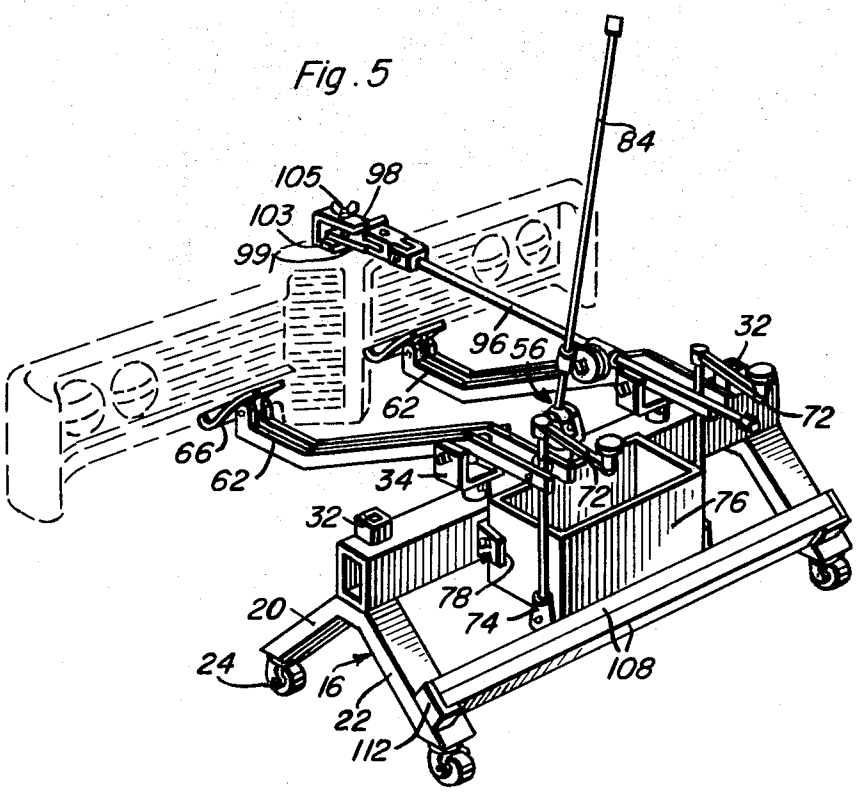

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Fig. 5


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AUTO BODY PARTS HANDLER

The auto body parts handler of the instant invention has been specifically designed to provide a structure from which vehicle body parts may be readily supported. The handler includes various work-engaging support and locating arms having workpiece engaging ends which are vertically shiftable and are designed to support various vehicle body components such as bumpers, grills and doors, etc. with these components disposed in their normal attitude. By providing such a parts handler various vehicle components may be supported in elevated position in their proper attitude relative to a vehicle body for attachment to the vehicle body by a single workman through normal body component attaching procedures such as bolting, riveting or welding, etc.

With some vehicle body components it is difficult for even two workmen to support the body component in position for attachment to a vehicle body while a third workman carries out the process of at least initially securing the component to the vehicle body. In any event, when a body mechanic is ready to mount a bumper, a grill, a fender or a door on a vehicle body he must often obtain the help of one or two co-workers for the purpose of initially supporting the component to be secured to the vehicle body in its proper attitude relative to the body so that the procedure of conventionally attaching the component to the vehicle body may be at least partially completed.

If co-workers are not available for the purpose of supporting a vehicle body component in proper attitude for securement to a vehicle body, a body mechanic must utilize whatever tools are available for the purpose of supporting the body component in at least generally the proper attitude relative to a vehicle body to which the component is to be secured. These conventional tools may include jack stands, floor jacks, tripod jacks and other shop tools of conventional design. However, these conventional tools have been specifically designed to perform different functions and therefore are not well adapted to support various body components in proper attitude relative to a vehicle body.

It is accordingly the main object of this invention to provide an auto body parts handler which will be capable of supporting and elevating substantially all heavyweight and cumbersome auto body components in order that these components may be accurately and stationarily supported in proper attitude relative to a vehicle body to which the components are to be secured.

Another object of this invention is to provide an auto body parts handler in accordance with the immediately preceding object and including sufficient adjustment features enabling substantially all heavy and cumbersome auto body components to be readily supported in proper attitude relative to an associated vehicle body for securement thereto.

A final object of this invention to be specifically enumerated herein is to provide an auto body parts handler which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout and in which:

FIG. 1 is an end elevational view of the auto body parts handler in use supporting a vehicle door component therefrom;

FIG. 2 is a side elevational view of the parts handler as seen from the right side of FIG. 1 and with the door component removed;

FIG. 3 is a view similar to FIG. 2 but with the lift end locating arms of the parts handler in stored positions;

FIG. 4 is a top plan view of the assemblage of FIG. 1;

FIG. 5 is a perspective view of the parts handler illustrating the manner in which an entire grill assembly may be supported therefrom, the grill assembly being illustrated in phantom lines;

FIG. 6 is a further perspective view of the parts handler; and

FIG. 7 is a fragmentary exploded perspective view of a portion of the main horizontal base of the parts handler and one of the support brackets utilized to oscillatably support the left arms from the parts handler base.

Referring now more specifically to the drawings the numeral **10** generally designates the auto parts handler of the instant invention. The handler **10** includes a base structure referred to in general by the reference numeral **12** and comprising an elongated horizontal box beam **14** provided with opposite end depending leg assemblies **16.** Each of the leg assemblies **16** comprises an inverted V-shaped structure **18** having downwardly divergent legs **20** and **22** supporting caster wheel assemblies **24** at their lower ends. The upper apex portions **26** of the inverted V-shaped structures **18** are attached to the underside portions of the opposite ends of the box beam **14** in a rigid manner such as by welding.

The front side **28** of the box beam **14** includes a pair of opposite end downwardly opening hook brackets **30** and the opposite ends of the upper wall of the box beam **14** include upwardly projecting abutments **32.** Also, the central portion of the box beam **14** includes three longitudinally spaced and upwardly projecting tubular socket members **34** which project downwardly and are secured through the upper side **38** of the box beam **14,** see FIGS. **3** and **7.**

A pair of support brackets referred to in general by the reference numerals **40** are provided and include upper upwardly opening generally U-shaped portions **42** including a pair of upstanding flanges **44** provided with aligned horizontal apertures **46** and interconnected at their lower marginal edges by means of a horizontal bight portion **48.** The support brackets **40** also include depending stub shaft portions **50** having their upper ends secured to the undersides of the bight portions **48** and provided with four equally circumferentially spaced splines **52.** The socket members **34** and **36** are each provided with four equally circumferentially spaced and upwardly opening slots **54** about their upper ends and the stub shaft portions **50** of the support brackets **40** are telescopingly receivable downwardly within the socket members **34.** In addition, a support bracket referred to in general by the reference numeral **56** and similar to the support brackets **40** is provided and supported from the socket member **36,** the support bracket **56** having a clamp fastener **58** se-

cured between the flanges 60 thereof corresponding to the flanges 44.

A pair of elongated channel-shaped lift arms 62 are supported, intermediate their opposite ends, between the flanges 44 of the support brackets 40 by means of fasteners 64 secured through the lift arms 62 and the apertures 46. Spring-urged J-shaped support brackets 66 are pivotally supported from one pair of corresponding ends of the lift arms 62 and the other pair of corresponding ends of the lift arms 62 are provided with transverse pins 68 journaled therethrough having threaded central transverse bores through which jack screws 70 provided with crank handles 72 are threadedly engaged. The jack screws 70 are substantially vertically disposed and the crank handles 72 are carried by the upper ends of the jack screws 70. The lower ends of the jack screws 70 are journaled in anchor brackets 74 pivotally supported from the opposite ends of a tool box 76 supported on the rear side of the box beam 14 by means of mounting brackets 78. Also, the front side 28 of the box beam 14 includes longitudinally spaced and outwardly projecting horizontal support pins 80, see FIGS. 2 and 3. The fasteners 64 are readily removable as are the pins 68 and the lift arms 62, when not needed, may be supported from the pins 80 and engaged with the hook brackets 30 in order to be supported from the box beam 14 when inoperative, see FIG. 3.

With attention again invited more specifically to FIG. 2, an upright standard 84 is provided and includes a ball 86 on its lower end having diametrically opposite outwardly projecting pivot shafts 88 journaled in the apertures 90 formed in the flanges 60 corresponding to the apertures 46 and the clamp fastener 58 may be tightened to frictionally grip the ball 86 between the adjacent sides of the flanges 60 in order to maintain the standard 84 in adjusted angularly displaced position.

A clamp-type bracket 92 is mounted on the standard 84 for slidable adjustment therealong and securement in adjusted position. The bracket 92 includes a portion 94 thereof supported for angular adjustment about an axis transverse to the standard 84 and a workpiece positioning arm 96 is supported from the portion 94 for adjustable longitudinal shifting relative thereto. The portion 94 is of the clamp type and therefore the arm 96 may be secured in adjusted shifted position relative to the portion 94. A clamp assembly 98 is supported from the end of the arm 96 projecting forwardly of the front side 28 of the box beam 14 and may be engaged with the upper marginal portion of a door assembly 100 while the lower marginal edge portion of the door assembly 100 may be supported from the J-shaped support bracket 66 in the manner illustrated in FIG. 1 of the drawings. Then, the standard 84 and arm 96 may be adjusted to properly orient the door assembly 100 relative to an associated vehicle body and the jack screws 70 may be actuated to raise and lower the door assembly 100, the portion 94 being frictionally retained in adjusted position relative to the bracket 92 and thereby being capable of being angularly displaced relative to the bracket 92 as the lift arms 62 are adjusted by means of the jack screws 70.

As can be seen from FIG. 5 of the drawings the arms 62 and 96 may also be utilized to support an entire grill assembly or combined bumper and grill assembly in proper elevated upright position for ready securement to a vehicle body. In addition, other vehicle body components may be supported from the arms 62 and 96.

With attention now invited more specifically to FIG. 6 of the drawings there may be seen a pair of mounting brackets 104 supported from the box beam 14 for limited adjustable shifting longitudinally of the box beam 14. The mounting brackets 104 are removably supported from the box beam 14 and include upper horizontal tubular portions 106 which extend transversely of the box beam and have further horizontal support arms 108 freely telescoped therein. From FIG. 6 of the drawings it may be seen that an entire bumper assembly (illustrated in phantom lines) may be supported from the tubular portions 106 or the support arms 108 as required. It is also pointed out that a second bumper assembly may be supported from the support arms 62 and 96. In this manner, a damaged bumper assembly may be supported either in the upper position on the tubular portions 106 of the support arms 108 or in the lower position supported from the arms 62 and 96 with a new bumper supported in the other position whereby a mechanic may remove the various accessory and mounting components from the damaged bumper and reapply these components to the new bumper subsequent to installment of the new bumper on an associated vehicle body.

The caster wheel assemblies 24 provide freedom of movement of the parts handler 10 throughout a vehicle body shop and the various support arms of the handler 10 may be readily stored in the manner illustrated in FIG. 3 of the drawings. Further, the legs 22 of the leg assemblies 16 include outstanding abutment flanges 112 from which the support arms 108 may be supported in stored position on th leg assemblies 16 when the support arms 108 are not needed. Of course, when the arms 62 and 96 are removed, the various support brackets 40 as well as the support bracket 56 may be stored in the tool box 76 together with any other accessories of the parts handler.

The clamp assembly 98 is oscillatable relative to the arm 96 about an upstanding axis and the support brackets 66 are oscillatable relative to the corresponding ends of the lift arms 62 about horizontal transverse axes. Accordingly, the clamp and support brackets 98 and 66 may be readily utilized to support substantially any vehicle body component from the arms 62 and 96.

Further, each clamp assembly 98 includes a stationary jaw 99 provided with a jaw face cushion 101, see FIG. 1, and a rockable jaw 103 opposing the corresponding cushion 101 and shiftable toward the latter by means of a jaw actuator nut 105.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. An auto body parts handler comprising an elongated horizontal base, a pair of support brackets supported from opposite end portions of said base, a pair of elongated lift arms extending transversely of said base and pivotally attached, intermediate their opposite ends, to said support brackets for oscillation about horizontal axes extending transversely of said lift arms,

said lift arms including first and second pairs of corresponding opposite ends disposed on opposite sides of said horizontal axes, said first pair of ends including article support means adapted to engage and support a workpiece, a third support bracket supported from said base intermediate said pair of support brackets, an upright standard, means pivotally supporting the lower end of said standard from said third support bracket for oscillation about an axis extending longitudinally of said base and including adjustable means frictionally maintaining said standard in adjusted angularly displaced position, a mounting bracket slidably and rotatably disposed on said standard for adjustable positioning therealong and rotation thereabout and including adjustment means for adjustably frictionally gripping said standard and frictionally securing said mounting bracket in adjusted position along said standard as well as angularly displaced positions thereon, a third workpiece locating arm supported from said mounting bracket for frictionally resisted longitudinal shifting relative to said mounting bracket, frictionally resisted angular displacement relative to said mounting bracket about a horizontal axis extending transversely of said third arm and frictionally resisted rotation about the longitudinal axis of said third arm relative to said mounting bracket, one end of said third arm including workpiece engaging means and jack screw means operatively connected between each second end of said pair of arms and said base for independent angular adjustment of each of said pair of arms relative to the corresponding support bracket.

2. The combination of claim **1** including a second pair of generally horizontal support arms, mounting means supported from longitudinally spaced portions of said base for independent adjustable shifting therealong, said support arms being supported from said mounting means for lengthwise shifting relative to and transversely of said base.

3. The combination of claim **1** including a second pair of generally horizontal support arms, mounting means supported from longitudinally spaced portions of said base for independent adjustable shifting therealong, said support arms being supported from said mounting means for lengthwise shifting relative to and transversely of said base, said mounting means comprising horizontal tubular members extending transversely of said base and in which said second pair of support arms are telescopingly slidingly received.

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