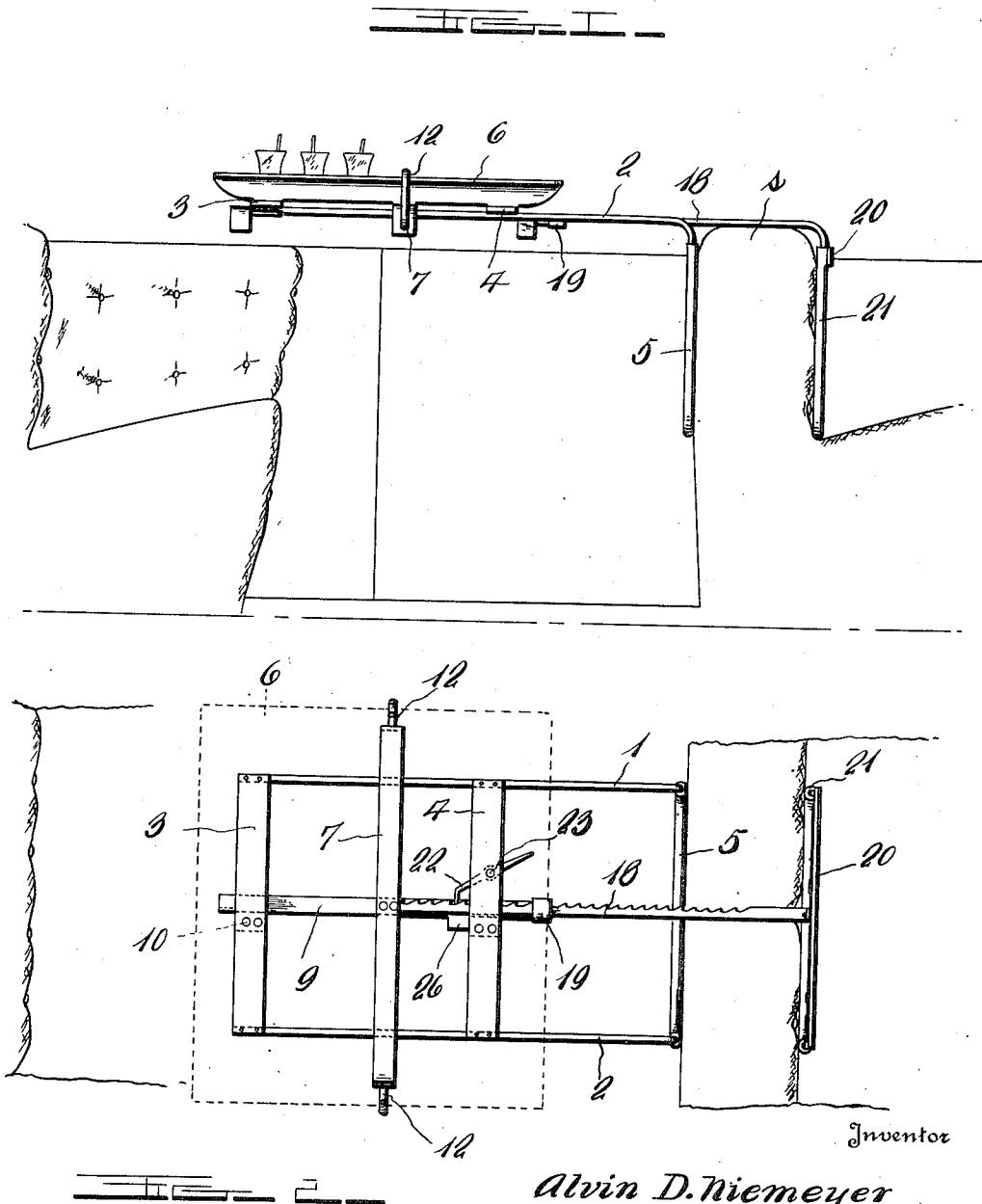


A. D. NIEMEYER.
 TRAY SUPPORTING DEVICE.
 APPLICATION FILED MAR. 17, 1922.

1,436,601.

Patented Nov. 21, 1922.
 2 SHEETS—SHEET 1.



Inventor

Alvin D. Niemeyer

By William C. Linton

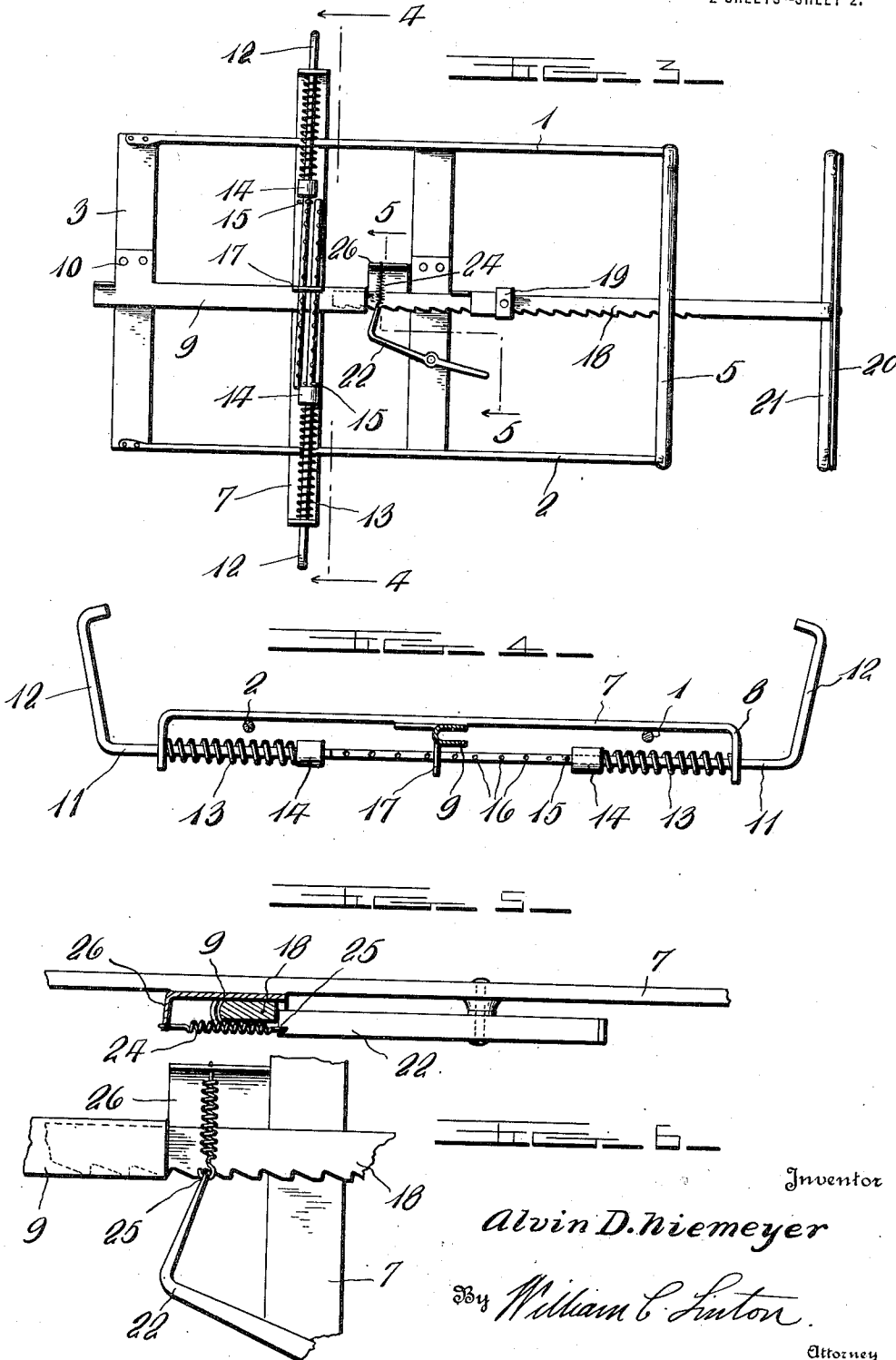
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UNITED STATES PATENT OFFICE.

ALVIN D. NIEMEYER, OF DENISON, TEXAS.

TRAY-SUPPORTING DEVICE.

Application filed March 17, 1922. Serial No. 544,478.

To all whom it may concern:

Be it known that I, ALVIN D. NIEMEYER, a citizen of the United States of America, residing at Denison, in the county of Grayson and State of Texas, have invented certain new and useful Improvements in Tray-Supporting Devices; and I do hereby declare that the following is a full, clear, concise, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in supporting devices, having for an object to provide a removable tray supporting bracket especially designed for use in connection with automobiles, whereby, when the same is attached to a portion of the vehicle, a refreshment tray or similar article may be firmly supported thereon in a position convenient to the vehicle occupants in order that its contents may be readily served without liability of accidental displacement or spilling.

It is also an object of the invention to provide a bracket of the character mentioned which may be adjusted to that extent necessary to clampingly engage the attaching means with a seat back or door of the automobile, as may be desired.

Yet another object of the invention is to provide a bracket capable of being adjusted to accommodate and firmly engage and support trays or similar articles of various sizes. Other objects will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by persons skilled in the art, I have in the accompanying illustrative drawings and in the detailed following description based thereon, set out one possible embodiment of the same.

In these drawings:

Figure 1 is a side elevation of the improved bracket showing the same attached to the back of the forward seat of an automobile, the latter being shown in fragment;

Figure 2 is a top plan view of the bracket when attached;

Figure 3 is a bottom plan view of the same;

Figure 4 is a transverse section taken on the line 4—4 of Figure 3 looking in the direction in which the arrows point;

Figure 5 is a section taken on the line 5—5 of Figure 3 looking in the direction in which the arrows point; and,

Figure 6 is an enlarged fragmentary detail showing the engagement of the catch with the longitudinally adjustable attaching or clamping arm.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the improved support may be stated to comprise a frame indicated in its entirety by the numeral 1, the same being substantially rectangular in shape and being composed of parallel rods 2 rigidly inter-connected by means of transversely disposed strips 3 and 4, portions of said rods 2 being bent downwardly at substantially right angles and engaged with a substantially U-shaped member or jaw 5, the latter, if desired, being provided with a covering of protective material, such as rubber tubing, fabric, et cetera, whereby to prevent scarring of an adjacent surface.

As means for engaging and connecting the tray, platter or the like, such as indicated at 6 to the rectangular frame 1 in a manner to prevent accidental displacement, a bar 7 having the opposite end portions thereof downturned and apertured as at 8 is disposed transversely of said frame and has the intermediate portion thereof riveted or otherwise connected to the longitudinally disposed metal channel strip 9 connected adjacent its opposite end portions to the intermediate portions of the transverse strips 3 and 4 as indicated at 10. Arms consisting of rods 11 are disposed longitudinally of the bracket bar 7 and as will be noted upon reference to the Figure 4, have the outer portions thereof slidingly passed through the apertured downturned ends 8 of said bar 7, the extremities of these arms 11 being upturned to provide right angularly formed fingers 12 which are adapted to be engaged over the marginal portions of the opposite ends of said tray 6 in the manner as shown in Figure 1, whereby connection between the same and the supporting bracket will be effected. In order that the connection between the fingers 12 and the opposite end portions of the tray 6 will be of a binding nature, expansible coiled springs 13 are arranged about portions of said rods or arms

11 having certain of their ends bearing upon adjacent portions of the downturned extremity 8, while the opposite ends of the same have bearing upon stops or abutments 14 slidably arranged upon the inner portions of the respective rods 11 and having such sliding movement limited by means of cross pins 15 which are passed through any one of a series of openings 16 formed in said inner portions of the rods 11. Obviously, by reason of the adjustability of the stops 14 upon the inner portions of the rod 11, the relation of the fingers 12 formed upon their outer ends with respect to the opposite ends of the bar 7 may be varied, in order that the device may be adjusted to receive and positively engage trays or similar articles differing in size. To effect such adjustment of the arms or rods 11 and their fingers 12, it of course, is only necessary that the sliding abutments or stops 14 be moved to proper positions upon the inner portions of the rod 7 whereupon their respective cross pins 15 are passed through the adjacent openings 16. The expansible coiled spring 13 will serve to immediately move the fingers 12 inwardly to the limits of their adjustment, while outward movement of the same will be permitted by reason of the interpositioning of these coiled springs.

An angle bracket 17, may be and preferably is secured to the intermediate portion of the bar 7 and is provided with spaced openings for slidably receiving the inner portions of said rods therethrough for an obvious purpose.

To effect clamping attachment of the tray supporting bracket to a fixed portion of the automobile, as for illustration, the back of one of the seats thereof, indicated by the reference letter *s*, the elongated ratchet 18 is provided, being disposed longitudinally of the frame 1 between the side rods 2 and slidably engaged through a metal loop 19 secured to the inner end of the channel bar 9, while the inner or free portion of said bar is slidably received between the opposite sides of the channel bar as indicated in the Figure 3. The outer or remaining end of the ratchet bar 18, is connected, through the medium of a transversely disposed strip 20 to the substantially U-shaped frame or jaw 21, the outer ends of said strip 20 obviously, being secured to the lateral extremities of said jaw 21 in a suitable manner. The positioning of the jaw 21 corresponds to that of the jaw 5 and by reason of this opposed arrangement, it will be understood that an effectual form of clamp will be provided whereby the jaws 5 and 21 may be engaged with the opposite sides of the seat back *s* and then adjusted with relation to each other to clampingly engage such back therebetween as shown in the Figure 1.

To lock the ratchet bar 18 and in conse-

quence, the movable jaw 21 in an adjusted position with relation to the frame 1 and the seat back *s*, I may and preferably do provide a pawl 22 pivoting the same to an intermediate portion of the strip 4 as at 23 and so arranging the inner end of the same as to engage in the adjacent pocket formed by the ratchet teeth upon the bar 18. To retain the inner end of the pawl 22 in temporary engagement with teeth of the ratchet bar 18, a contractile coiled spring 24 is provided and has one end thereof connected as at 25 to the adjacent end of the pawl 22 while the opposite end of the same is connected to one side of the angle bracket 26 formed by cutting away a portion of the channel bar 9 and bending the same backwardly to the position shown in the Figure 3. In this connection, it is to be noted that by reason of the cutting away of a portion of the channel bar 9, the teeth upon the ratchet bar 18 will be exposed and therefore, permitted to be engaged by the inner end of the spring actuated pawl 22.

In using the improved tray supporting bracket, the movable jaw 21 is adjusted with relation to the immovable jaw 5 to permit of its engagement over the seat back *s* or over a door of an automobile to be fitted therewith, whereupon said movable jaw is moved inwardly to effect clamping engagement between the same and the seat back *s*, the spring actuated pawl 22 engaging between the adjacent teeth of the longitudinally slidable ratchet bar 18 and thereby securing said movable jaw 21 in its clamping position in order that the frame 1 will be supported in a substantially horizontal plane. Inasmuch as the immovable jaw 5 is formed upon one end of the rectangular frame 1, it is also to be appreciated that the stability thereof will be increased and that the more positive the engagement of the movable jaw 21 with the adjacent side of the seat back *s*, the more firmly positioned will be the frame 1. At this time, a tray 6 is arranged upon the frame 1 and connected thereto by moving the fingers 12 outwardly in order that they will engage over the opposite end portions thereof, the springs 13 serving to retain said fingers into binding engagement with said opposite end portions of the same and thus positively locate the same in its supported position upon the frame 1.

To remove the bracket from the seat back *s*, it is only necessary to disengage the inner end of the pivotal pawl 22 with the ratchet bar 18 and move said ratchet bar 18 together with its movable jaw 21 outwardly so as to effect disengagement of the same with said seat back. The tray 6 may, too, be readily moved from the frame 1 and fingers 12 of the arms or rods 11 by pulling one of the same outwardly for a

distance sufficient to permit of disengagement of the adjacent end of the tray therefrom.

It is of course to be understood that the mode of engagement of the tray supporting bracket may be varied such as conditions or preference may dictate as for example, the jaws 5 and 21 may be engaged with the side of the automobile body, with one of the doors thereof, or with any fixed or immovable portion of the same.

Manifestly, the construction shown is capable of considerable modification and such modification as is within the scope of my claims, I consider within the spirit of my invention.

I claim:

1. A device of the character described comprising a frame, consisting of interconnected longitudinal and transverse elements, certain of the ends of said longitudinal elements being bent at right angles to provide an immovable jaw, a movable jaw connected to and slidable with relation to said immovable jaw and tray attaching means arranged upon and secured to said frame.

2. A device of the character described comprising a frame including parallel side members having certain of the end portions thereof bent at substantially right angles to provide an immovable jaw, a movable jaw slidably connected to said frame and adjustable with relation to the immovable jaw, and relatively adjustable arms arranged transversely of and secured to said frame.

3. A device of the character described comprising a frame including parallel side members having portions thereof bent downwardly to provide an immovable jaw, transverse elements inter-connecting said parallel elements of the frame, an elongated ratchet bar slidably engaging certain of said

transverse elements, a movable jaw carried upon the outer end of said ratchet bar co-operable with said immovable jaw, means for temporarily locking said ratchet bar with relation to the frame, and tray attaching means arranged upon and secured to the frame.

4. A device of the character described comprising a frame consisting of longitudinal and transverse interconnected elements, portions of said longitudinal elements being bent at substantially right angles to provide an immovable jaw, an elongated ratchet bar positioned intermediately of said longitudinal elements and extending coincident therewith, a movable jaw arranged upon the outer end of said ratchet, co-operable with said immovable jaw, means for temporarily locking said ratchet bar with relation to said frame, and yieldable tray clamping means arranged transversely of and secured to said frame.

5. A device of the character described comprising a frame consisting of longitudinal and transverse inter-connected elements, portions of said longitudinal elements being bent at substantially right angles to provide an immovable jaw, a ratchet bar arranged between and slidable longitudinally of said longitudinal elements, a longitudinally disposed channel bar secured to said transverse elements receiving a portion of said ratchet bar therein, a jaw connected to the outer end of said ratchet bar and co-operable with said immovable jaw, means for temporarily locking the ratchet bar with relation to said frame and adjustable tray clamping means arranged transversely of and secured to said frame.

In witness whereof I have hereunto set my hand.

ALVIN D. NIEMEYER.