July 28, 1964 H. J. REHEL 3,142,511

ADJUSTABLE TABLE FOR WHEEL CHAIRS

Filed Oct. 4, 1962 2 Sheets-Sheet 1

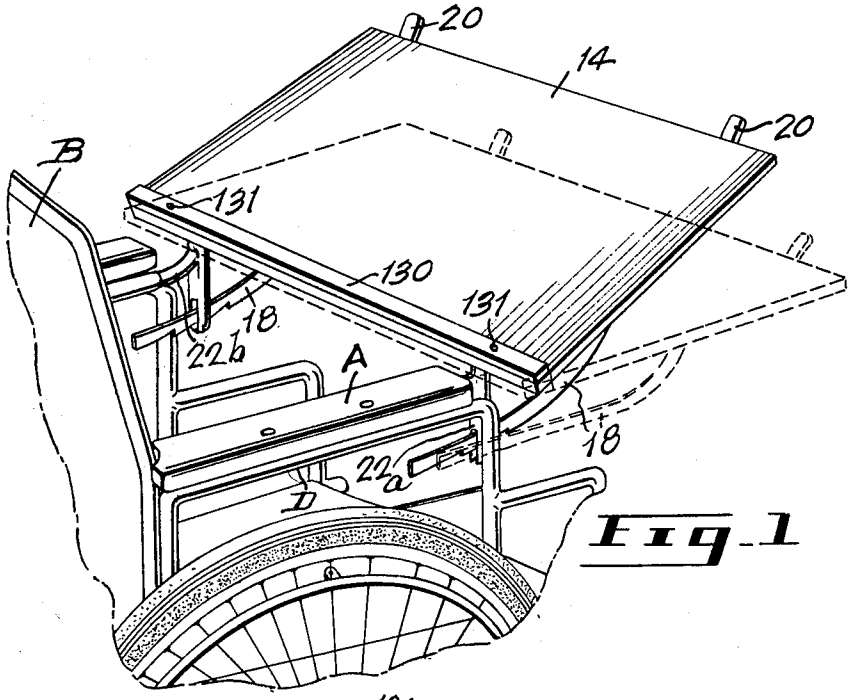


Fig. 1

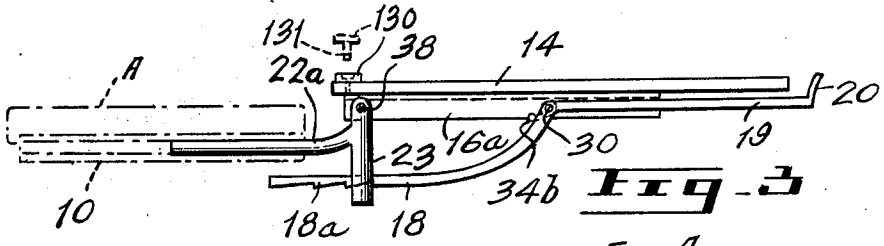


Fig. 3

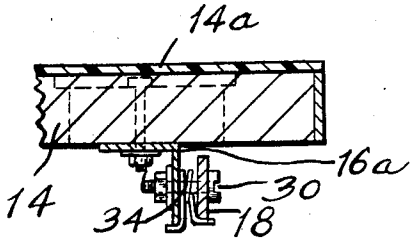


Fig. 5

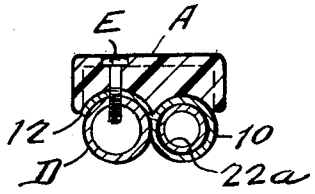


Fig. 6

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ADJUSTABLE TABLE FOR WHEEL CHAIRS

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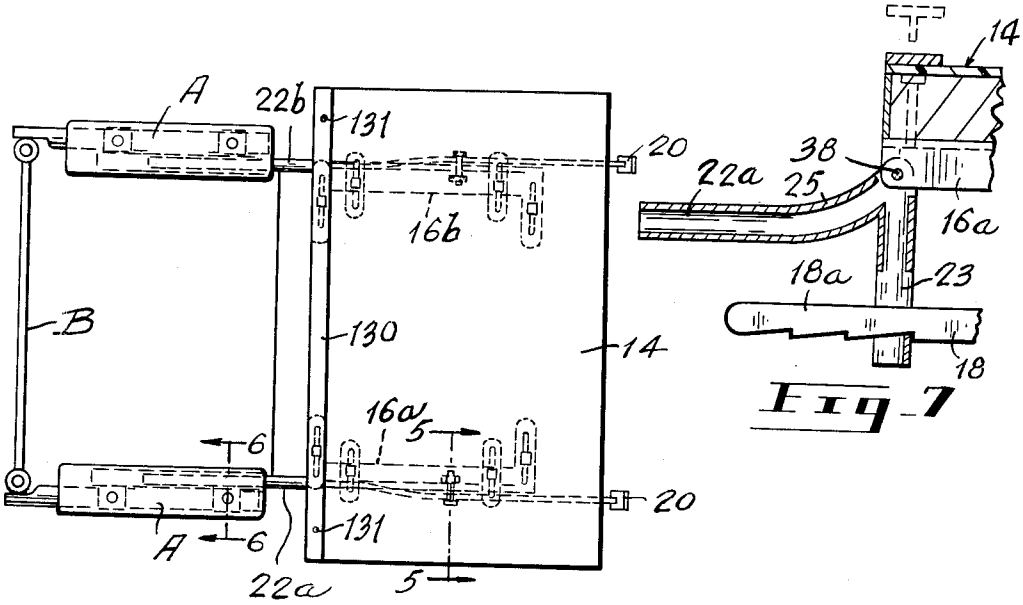


Fig. 2

Fig. 7

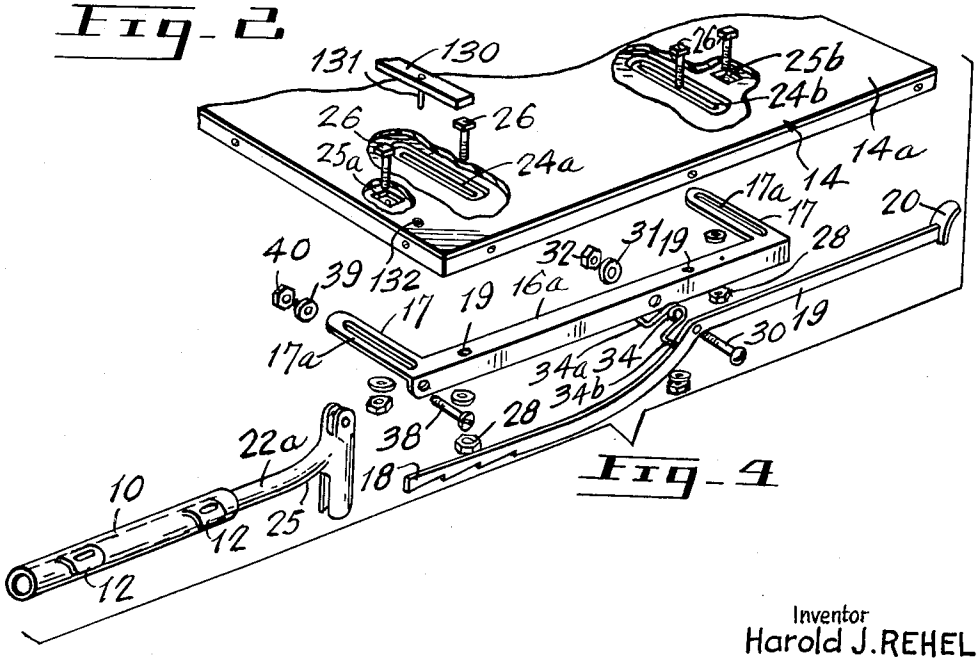


Fig. 4

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ADJUSTABLE TABLE FOR WHEEL CHAIRS

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1 Claim. (Cl. 297—149)

The present invention relates to improvements in the construction of accessories for wheel chairs or the like and more particularly to an improved construction of an adjustable table adapted for mounting on a wheel chair.

Persons confined to a wheel chair, for example paraplegics or the like, constantly require a handy supporting surface for reading, working or the like and the most convenient is a tray or table which is mounted or supported on the arms of the wheel chair. To be most useful a table of this type should be constructed so that it can be readily installed or removed by the person using the chair and moreover should be capable of adjustment without extra help.

With this in mind the present invention provides an adjustable table construction that meets all of the foregoing requirements. This is accomplished by making the table as having a main supporting frame having tubular attachment arms and supplying tubular attachment brackets which are adapted to be attached to the arms of the wheel chair as part of the chair construction. The tubular attachment frame is also provided with adjustable ratchet type linkage which in combination with a table top supporting frame makes it possible to readily adjust the angle of the table top relative to the wheel chair arms. The connection between the table top and table top supporting frame is adjustable so that the spacing between the front edge of the table top and the wheel chair arms can also be varied to suit individual needs.

Having thus generally described the nature of the invention, particular reference will be made to the accompanying drawings showing by way of illustration a preferred embodiment thereof, and in which:

FIGURE 1 is a side view in perspective elevation showing a portion of a wheel chair provided with an adjustable table construction in accordance with the invention.

FIGURE 2 is a view in plan of the construction shown in FIGURE 1 to illustrate the relative positions of the chair, tubular attachment arms, adjustable table top supporting linkage and the table top.

FIGURE 3 is a somewhat diagrammatic view in side elevation showing the right hand assembly of the table attaching and supporting linkage.

FIGURE 4 is an exploded view in perspective elevation of the table top and the various components making up the right hand side of the assembly as shown in FIGURE 3.

FIGURE 5 is a sectional view of FIGURE 2 along the line **5—5** to illustrate the attachment of the table supporting frame and adjustable linkage.

FIGURE 6 is a sectional view of FIGURE 2 along the line **6—6** showing the attachment tubes and wheel chair arm.

FIGURE 7 is a sectional view of FIGURE 2 along the line **7—7** to show the engagement of the adjustment ratchet with the tubular attachment arm.

With particular reference to FIGURES 1 and 2 of the drawings the adjustable table of the invention as shown as it would appear in operative attachment to the arms "A" of a wheel chair "B." As is shown in FIGURE 2, and with reference to the section shown in FIGURE 6, the usual arms "A" of the chair "B" are removed and the underside slightly recessed as indicated at "C" to accommodate tubular attachment members **10**. Each of the attachment members **10** are provided with arcuate lugs **12** which fit over the tubes "D" and these are suitably bored

to permit the arm attaching screws "E" to pass therethrough so that the attachment members **10** become in effect a permanent attachment at each side of the chair.

The adjustable table of the invention, as shown most clearly in plan in FIGURE 2 and in the exploded view of FIGURE 4, consists of a table top **14**, table top supporting frames **16***a*, **16***b*, adjustable ratchet arms **18** having extensions **19** constituting operating levers **20**, and tubular supporting arms **22***a*, **22***b* which act as the pivotal axis for the angular adjustment of the table top **14** and also the means of attachment to the wheel chair arms "A."

It will be noted that the supporting frame **16***a* and the tubular supporting arm **22***a* for the right hand side assembly only is illustrated in complete detail in FIGURE 4. The frame **16***b* and the arm **22***b* for the right hand assembly are identical.

With reference to the assembly shown, the top **14** is preferably constructed in several laminations as shown so that the top surface **14***a* masks slots **24***a*, **24***b* and square countersinks **25***a*, **25***b* which accommodate the square headed bolts **26**. The table top frame **16***a* includes extensions **17** having slots **17***a* and borings **19** which correspond with the slots **24***a*, **24***b* and the countersinks **25***a*, **25***b* so that when the bolts **26** are inserted as shown through the aligned recesses and slots and secured by nuts and washers **28**, the table top can be slidably adjusted with respect to the span between the frame members **16***a*, **16***b*. The top layer **14***a* of the table **14** is of course attached after the bolts **26** have been inserted. A similar arrangement is provided on the left hand side of the table. With this arrangement it will be obvious that the spacing between the tubular supporting arms **22***a*, **22***b* can be readily adjusted to suit varying widths of wheel chairs.

To continue with the assembly of the elements shown in FIGURE 4, which is the same for both sides, the ratchet arm **18** is pivotally attached to the frame **16***a* by bolt **30**, secured in place by washer **31** and nut **32**. A spring **34** having opposed arms **34***a*, **34***b* is also mounted on the bolt **30** so as to resiliently urge the ratchet arm **18** outwardly from the frame **16***a*. The ratchet arm end **18***a* is then mounted through a slot **23** provided in the supporting arm **22***a* and a pivotal connection made between the bifurcate end **25** of the arm **22***a* and the end of the frame **16***a* by a bolt **38** secured in place by washer **39** and nut **40**. The right hand supporting arm **22***b* is similarly pivotally attached to the supporting frame **16***b*.

To install the table of the invention it is a simple matter, once the tubular attachment members **10** are mounted on the chair "B," to insert the ends of the tubular members **22***a*, **22***b* and pull the table inwards to the desired spacing between the front edge of the table and the person using the chair. When it is desired to raise the table top **14** to any desired angle, the outer edge is grasped and pulled upwards where it will be retained by the engagement of the ratchet arms **18** with the slots **23** of the members **22***a*, **22***b*. To return the table top to its horizontal position or any intermediate position desired it is only necessary to reach over the table and push downwards on the operating levers **20** on the extensions **19** so that the ratchet arms **18** are pivoted against the springs **34** clearing the ratchet teeth from engagement.

To add to the usefulness of the table, a detachable strip **130** is mounted by two pins **131** fitting into corresponding openings **132** provided in the table **14** as shown in FIGURES 4 and 7. This strip **130** is useful as a book or paper holder when the table is in an inclined position.

As will be appreciated by reference to the preceding description and accompanying drawings, the table of the invention is suited for attachment to wheelchairs of all types and sizes. The preferred construction illustrated is adjustable to suit from a 16" width to a 20" chair.

I claim:

As an attachment for a wheel chair, an adjustable table assembly comprising in combination, a pair of tubular mounting brackets adapted for attachment to the arm rests of said chair; and an adjustable table including a flat table top mounted on a pair of spaced apart supporting frame members, adjustable means on at least one of said supporting frame members and said table top adapted to allow movement of said frame relative to said top to vary said frame members spacing, said supporting frame members each being pivotally attached at one end to one of a pair of tubular table attachment members adapted to slidably fit within said tubular mounting brackets, and an adjustable supporting arm extending between at least one of said table top supporting frames and the corresponding tubular table attachment member, said adjustable supporting arm being pivotally connected intermediate its length to said table top supporting frame with one end of said arm provided with ratchet teeth being engaged in a slotted lower portion of said tubular table attachment member

and the other free end constituting a controlling lever, and resilient means between said table top supporting frame and adjustable supporting arm urging said ratchet toothed end towards engagement with said tubular table attachment member slotted portion, whereby said table top can be adjusted and retained at several angular positions relative to said tubular attachment members.

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