

(21) Application No 8425934

(22) Date of filing 13 Oct 1984

(71) Applicant
Giuseppe Volpi
19 Panxworth Road, Hemel Hempstead, Hertfordshire

(72) Inventor
Giuseppe Volpi

(74) Agent and/or Address for Service
Saunders & Dolleymore, 2 Norfolk Road, Rickmansworth,
Herts WD3 1JH

(51) INTCL⁴
A47B 3/14

(52) Domestic classification
A4L 142 AU BPP

(56) Documents cited
None

(58) Field of search
A4L A4H A4J

(54) Folding seats, benches and tables

(57) A folding seat/table arrangement has transverse seat members (10,12) and transverse backrest/table top members (14,16) carried on transversely-spaced folding frames (18). In those frames, backrest supports (34) are pivotable relative to seat member carriers (30) between first and second stable end positions, by virtue of connecting links (38) which connect said supports (34) to rear seat legs (24). In one position (as shown) the backrest transverse members (14,16) are supported as an upright backrest for seated persons. In the other position, the backrest transverse members (14,16) are supported by props (48) from rearwardly-inclined backrest supports (34), in a horizontal table-top posture. The front legs (22) of the seat are releasably connected to the seat by means of a bayonet fitting (56).

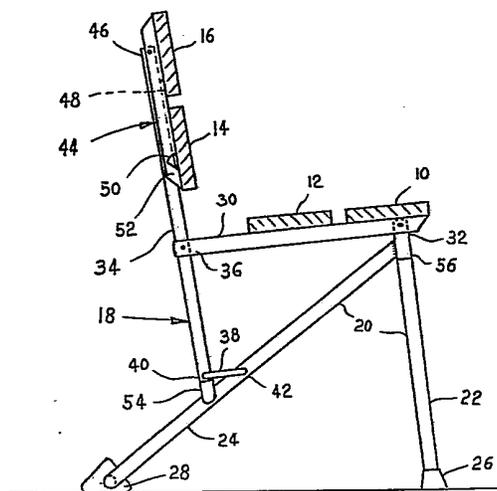


FIG. 1

2166947

1/6

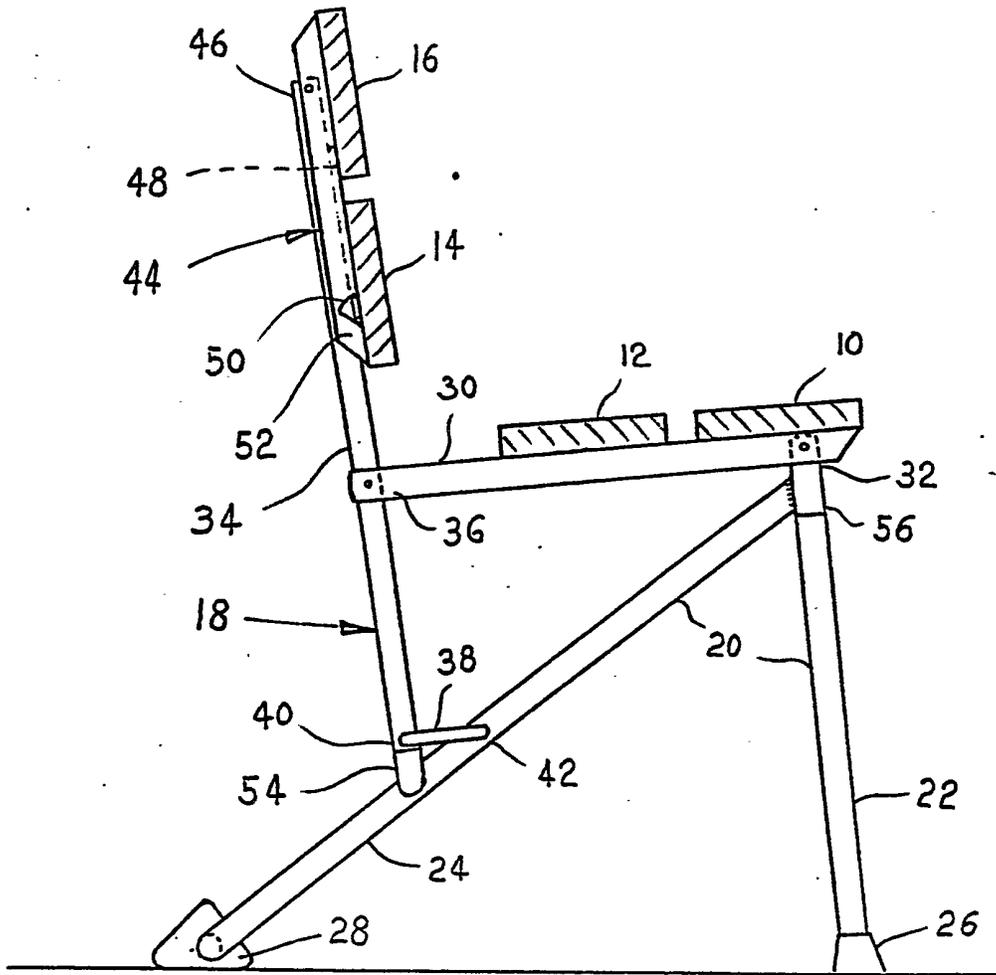


FIG. 1

2/6

2166947

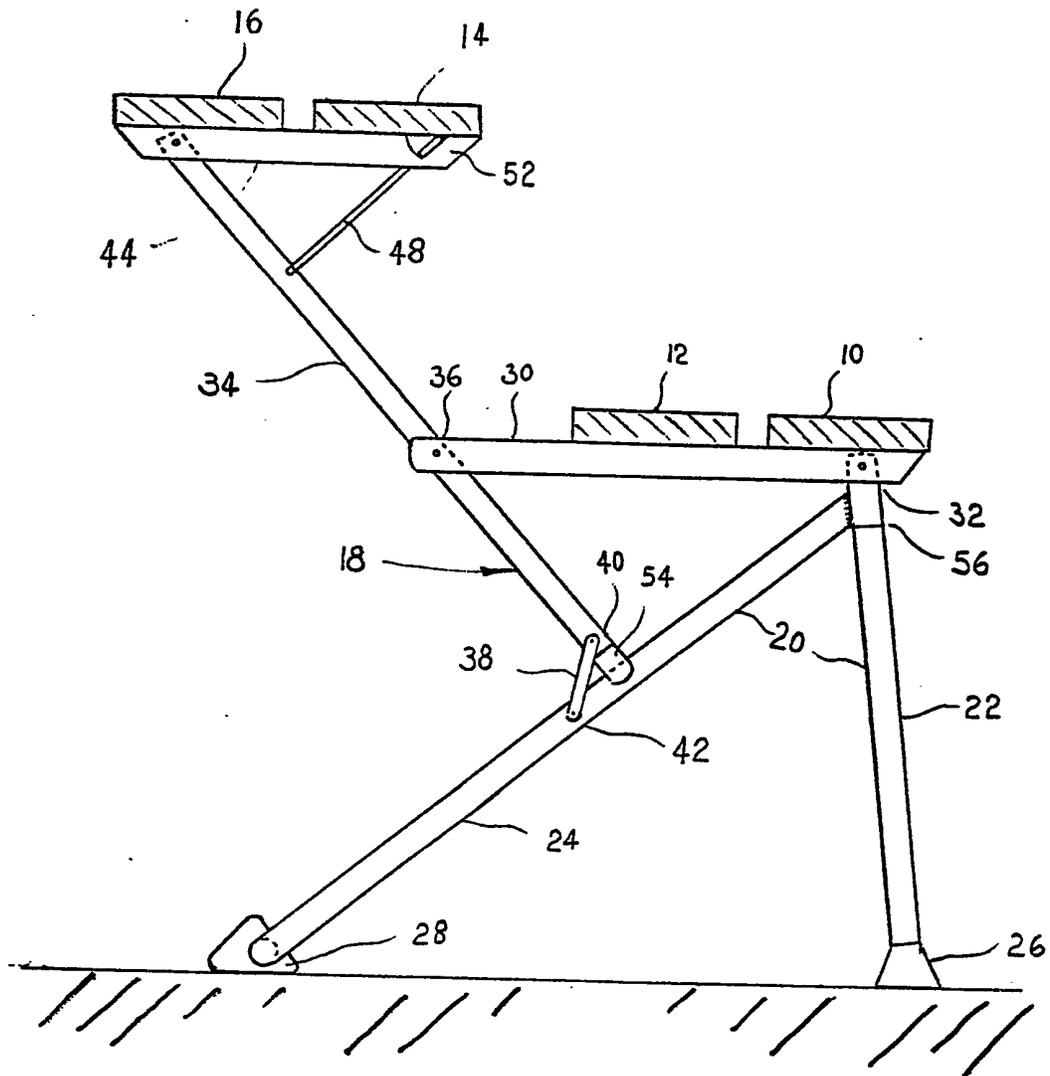


FIG. 2

2166947

3/6

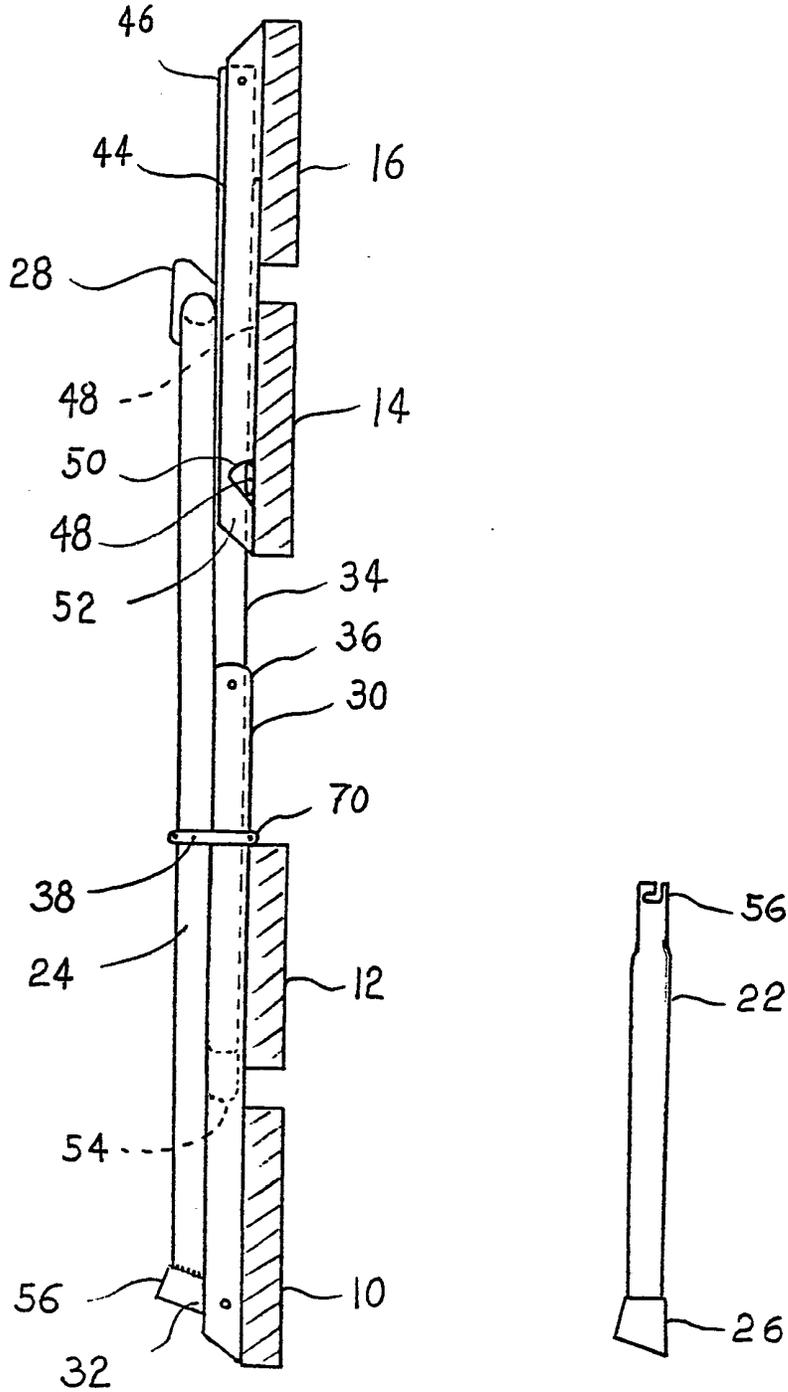


FIG. 3

4/6

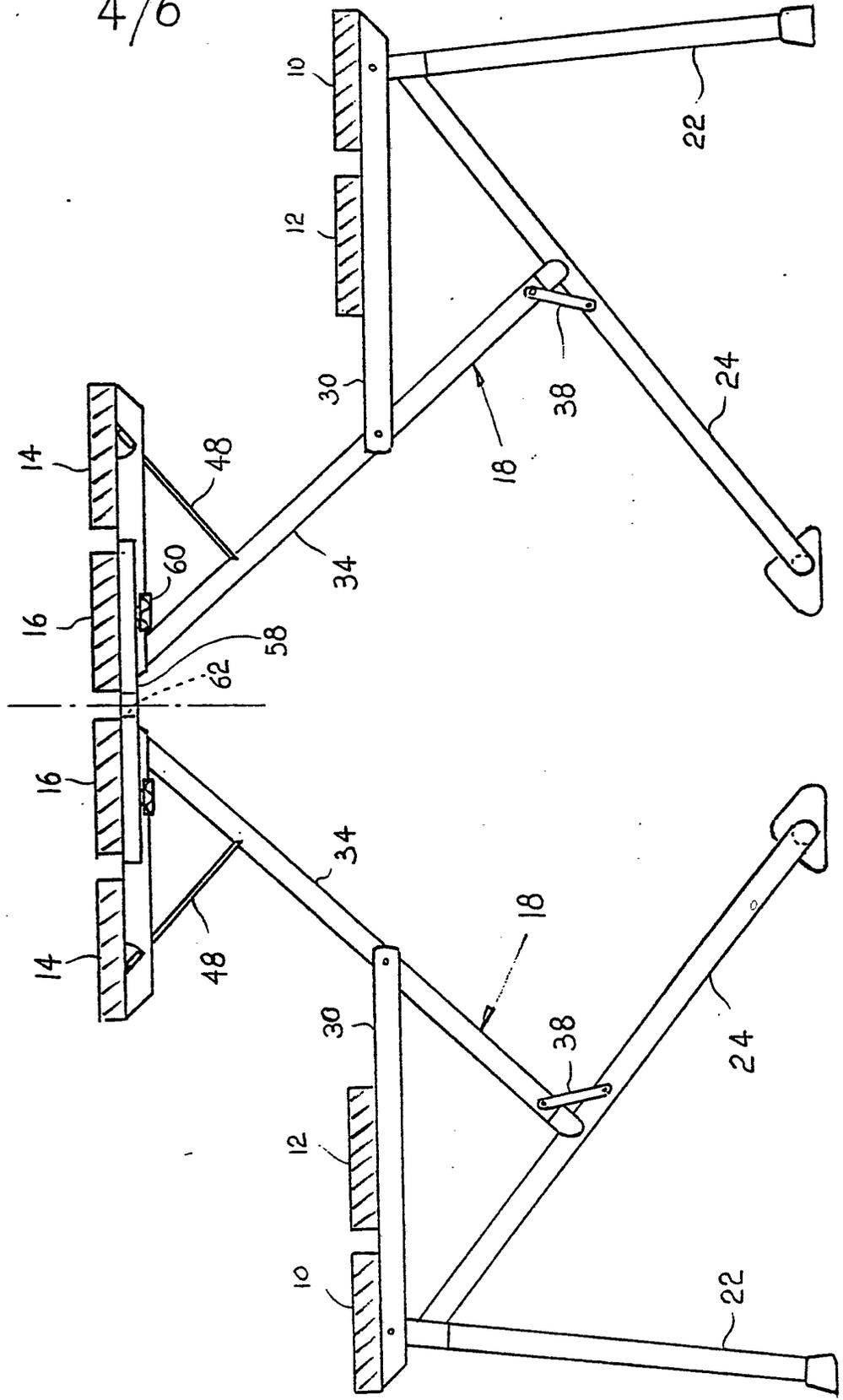


FIG. 4

5/6

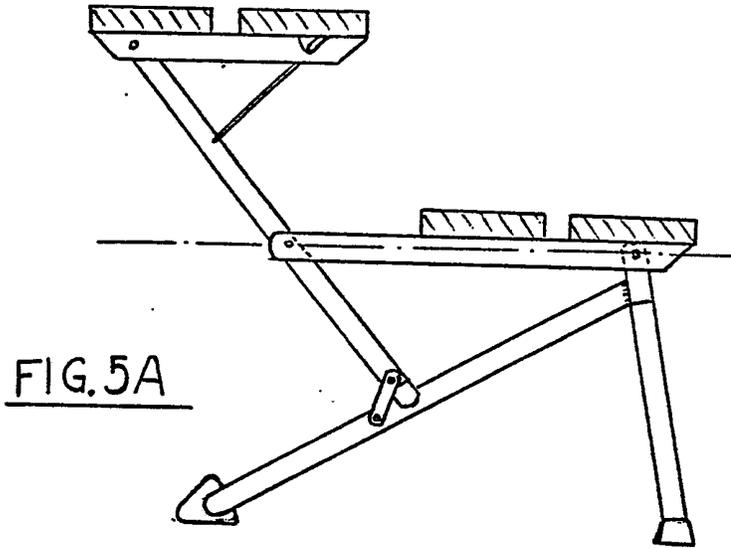


FIG. 5A

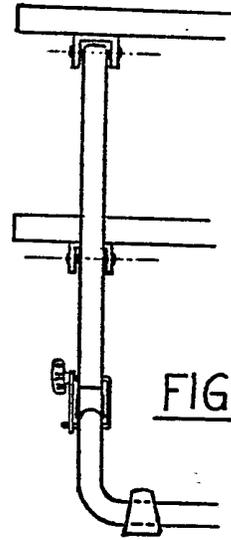


FIG. 5B

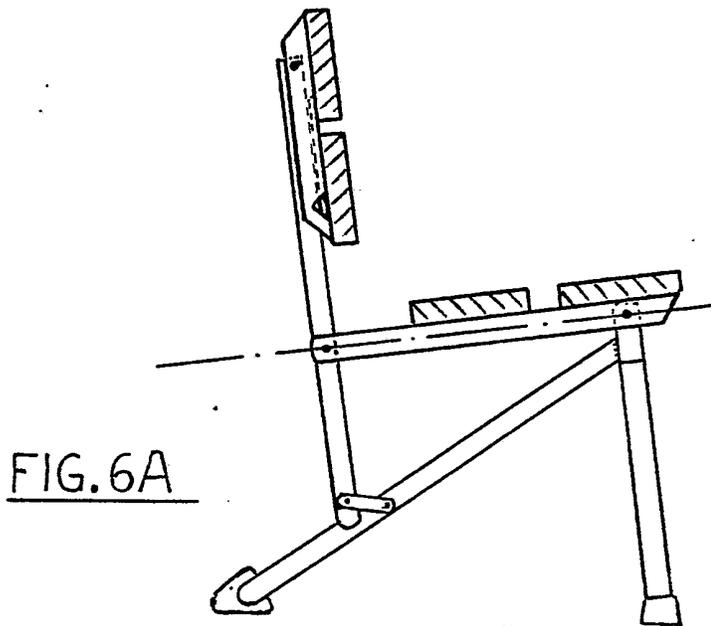


FIG. 6A

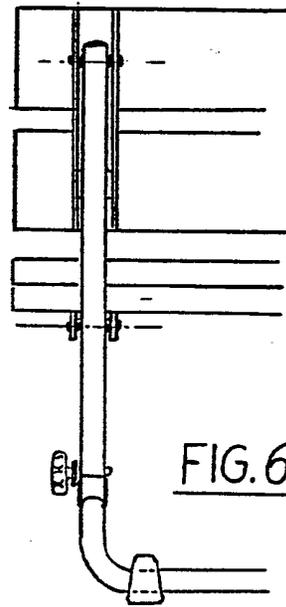


FIG. 6B

2166947

6/6

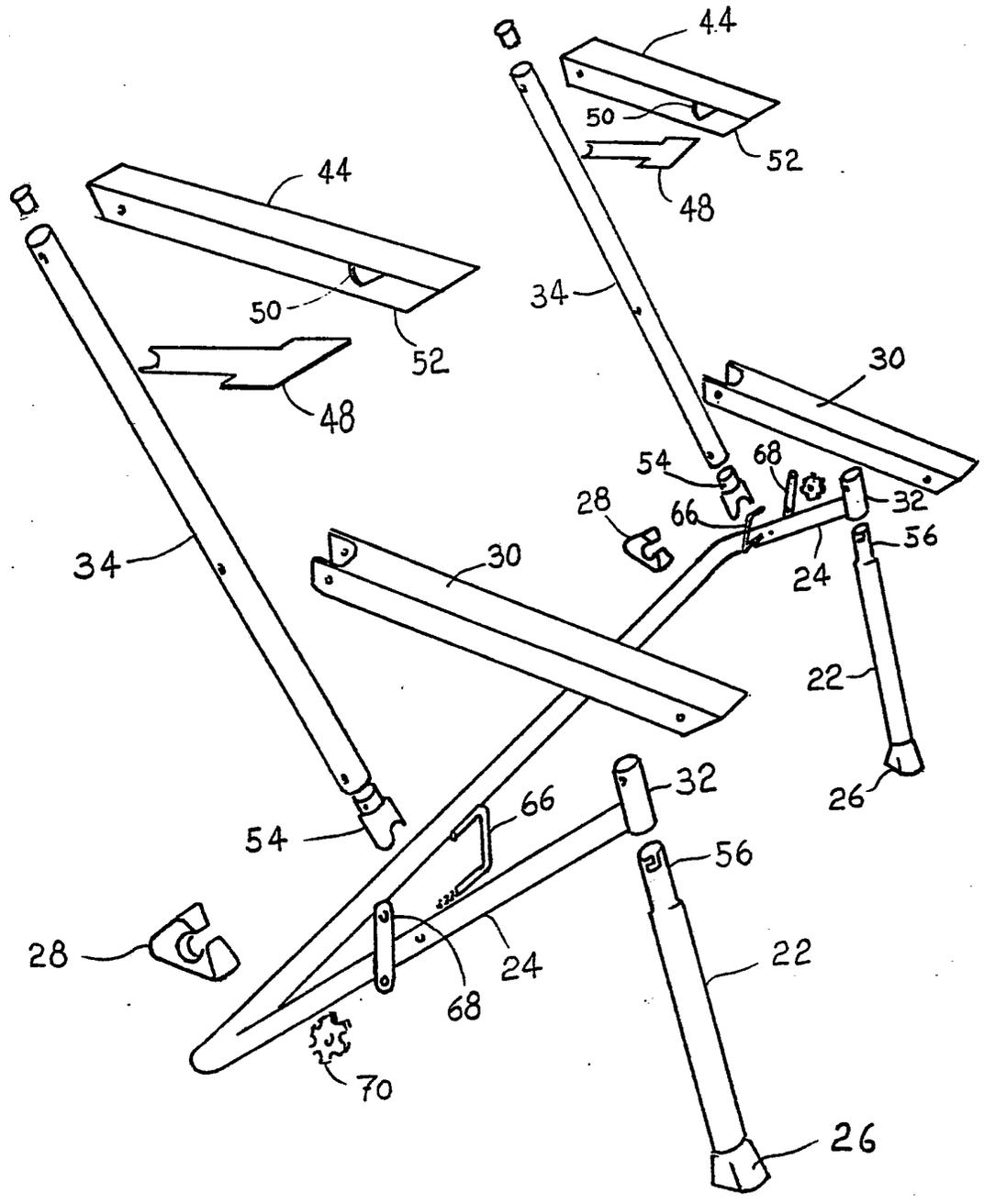


FIG. 7

SPECIFICATION

Folding seats, benches and tables

5 This invention relates to seats, benches, tables and similar articles, all of the folding or collapsible kind, that is, the kind in which the article may be folded or collapsed from an operative or functional condition to a storage condition for facilitating storage and/or
10 transport of such articles. Such articles comprise a transverse seat or table member carried on a folding or collapsible framework.

Such folding articles are commonly, though not exclusively, purchased for use out-of-doors, for exam-
15 ple, in the garden, or in the countryside for picnic purposes.

Ease of converting such articles from one said condition to the other is important to the user; but in addition such articles should desirably occupy a very
20 small space when stored away.

Moreover, such folding articles are single-purpose articles, being constructed so as to serve but a single function, e.g. that of a seat, or a chair or table. Hence, such articles serving different functions are purchased
25 for use in association with one another. This requires greater storage space to be available for storing all such single-purpose articles when not in use.

The present invention seeks to provide a multi-purpose folding article that can serve alternatively as a
30 seat, or as a combined seat and table, is simple to erect for either purpose, occupies a very small storage space when collapsed, and is easily handled when in the collapsed condition.

According to the present invention, there is pro-
35 vided a seat of the folding or collapsible kind in which a transverse seat member is carried on a folding framework, which framework comprises at least two similar folding frames, each of which frames com-
40 prises:

(a) a leg member incorporating a front leg and a
40 rear leg, which legs are secured together at one end, define between them a large acute angle, and have at their other ends respective ground-engaging foot portions which are spaced apart from one another to
45 define the base area of the seat;

(b) a seat member carrier for receiving and sup-
porting said transverse seat member, said carrier being pivotally connected to said leg member near the
50 junction of the front and rear legs;

(c) a backrest support pivotally connected in-
termediate its extremities to said seat member carrier at a position thereon remote from its pivotal con-
55 nection with the leg member and over-hanging said rear leg;

(d) a connecting link pivotally connected at one
end thereof to said rear leg at a position thereon
remote from its respective extremities, and at the
other end thereof to said backrest support at a position
60 near the free end thereof which lies adjacent said rear leg, so as to allow the link to pivot between and occupy

alternatively one of two alternative, stable end posi-
tions in which said free end of the backrest support
compressively rests on said rear leg,

(e) a backrest carrier pivotally connected near an
65 end thereof to said backrest support at or near a free end thereof which lies remote from said seat mem-
ber carrier and said connecting link; and

(f) a prop pivotally connected to said backrest
70 carrier at a position thereon remote from its pivotal connection with said backrest support, and free to pivot between alternative first and second end posi-
tions, said prop when in said first end position lying
adjacent the backrest carrier, and when in said second
end position lying with its free end abutting and stabi-
75 engaging the backrest support;

said transverse seat member being secured to and
carried by each said seat member carrier at a position
thereon such that the centre of gravity of that seat
member lies at a position intermediate the pivotal
80 connections of each seat member carrier with its associated leg member and backrest support respec-
tively; and

a transverse backrest member being secured to an
carried by each said backrest carrier at a position
thereon such that the centre of gravity of the backrest
85 member lies at a position intermediate the pivotal connections of each said backrest carrier with its associated backrest support and prop respectively.

Other features of the present invention will appear
90 from the description that follows hereafter, and from the claims that are appended at the end of that description.

One bench seat according to the present invention
will now be described by way of example, and with
95 reference to the accompanying diagrammatic draw-
ings, in which:—

Figures 1 to 3 show diagrammatic end elevations of
the seat when arranged in three different modes
respectively. In Figure 1, the seat is shown in its
100 normal functional role as a seat with an upright
backrest. In Figure 2, the seat is shown transformed
into a combined seat and table arrangement, the seat
having no backrest. In Figure 3, the seat is shown
collapsed into a storage condition with its front legs
105 detached for separate storage.

Figure 4 shows a diagrammatic end elevation of two
seat/table arrangements as shown in the Figure 2,
arranged in a back-to-back manner and secured
together to form a two-seated picnic table arrange-
110 ment.

Figures 5A, 5B; 6A, 6B; and 7 show in greater detail
preferred, practical form of the seat/table arrange-
ment of the earlier Figures; the Figures 5A and 6A
being end elevations similar to those of the Figures 2
115 and 1 respectively, the Figures 5B and 6B being side
elevations showing only one end portion of the
arrangement, the other end portion being similar but
reversed relative to that shown in the Figures 5B and
6B, and the Figure 7 showing pictorially an exploded
120 view of the various constituent parts that make up the

The drawing(s) originally filed were informal and the print here reproduced is taken from a later filed formal copy

framework.

Referring now to the Figure 1, the bench seat there shown comprises two solid timber, transverse seat members 10, 12 and two solid timber, transverse backrest members 14, 16 carried on a framework that comprises two similar, transversely-spaced, metal, folding frames 18, of which only one is visible in the Figure.

Each such frame 18 comprises:—

- 0 (a) a leg member 20 comprising front and rear legs 22, 24 joined together rigidly uppermost at an included angle of approximately 56° and having lowermost ground-engaging foot portions 26, 28;
- 5 (b) a seat member carrier 30 pivotally connected at the right-hand end thereof with the upper end 32 of leg member 20;
- 10 (c) an upright backrest support 34 pivotally connected intermediate its ends with the left-hand end 36 of the seat member carrier 30;
- 15 (d) a pair of transversely-spaced, parallel connecting links 38 straddling and pivotally connected to the lower end 40 of the backrest support 34, and straddling and pivotally connected to an intermediate portion 42 of the rear leg 24;
- 20 (e) a backrest carrier 44 pivotally connected at its upper end to the upper end 46 of the backrest support 34; and
- 25 (f) a prop or stay 48 pivotally carried at its lower end in a pair of triangular slots 50 formed in parallel, transversely-spaced side portions 52 of the backrest carrier 44, and trapped between the rear faces of the backrest members 14, 16, and the front surface of the backrest support 34.

The two seat members 10, 12 are secured by screws (not shown) on the upper surfaces of the respective seat member carriers 30 of the two folding frames, and the two backrest members 14, 16 are likewise secured by screws (not shown) to the respective backrest carriers 44 of the two frames in the manner shown.

The bottom ends 40 of the respective backrest supports 34 carry resilient buffers 54 which have their lower faces shaped to engage closely around the cylindrical external surfaces of the respective rear legs 34.

The ground-engaging parts 26, 28 of the legs carry resilient foot pads.

The front and rear legs 22, 24 and the backrest supports are of cylindrical, tubular construction.

In the configuration shown in the Figure 1, with the connecting links 38 pivoted to their left-hand stable end-positions, the arrangement is in a stable condition for use as a seat or bench, for example, in the home or in the garden.

The seat members 10, 12 are inclined slightly downward in a rearward direction, and the backrest members 14, 16 are inclined to the ground at an angle of approximately 85° .

The seat can be readily transformed into the seat/table arrangement that is shown in the Figure 2, by first lifting upwardly and simultaneously moving rearwardly the backrest members 14, 16 and backrest supports 34, so as to rotate the connecting links 38 in a clockwise direction to the first, stable end position, in which position the backrest support buffers 54 rest on the rear legs 24 at a position above the pivotal

connections of the connecting links with the rear legs.

The backrest members 14, 16 and their carriers 44 are then pivotally raised away from the backrest supports 34, thus allowing the respective props 48 to fall under gravity to their lower end positions, as determined by the shapes of the triangular slots 50 in the carriers 44, and so support the backrest carriers 44 and members 14, 16, when those parts are subsequently lowered from the backrest supports 34. This new condition is depicted in the Figure 2, from which it can be seen that the backrest members 14, 16 now lie in a horizontal disposition and so serve as table-top members.

To collapse the seat/table arrangement of Figure 2 for storage, that arrangement must first be collapsed to the bench seat configuration of Figure 1, by reversing the procedure just described. That is, by taking the weight of the backrest members 14, 16 and associated carriers 44 whilst the props are collapsed against the members 14, 16 so as to allow the backrest carriers to lie once again on the inclined backrest supports 34. The latter are then pulled rearwardly and simultaneously rotated forwardly. When the arrangement is restored to the seat configuration of Figure 1, the connecting links 38 are removed from at least the lower ends 40 of the backrest supports 34, and the latter are then rotated in an anti-clockwise direction and lowered on to the rear legs 24.

The front legs 22 are then detached from the upper parts 32 of the leg members 20, by undoing bayonet-type connecting parts at reference 56, whereupon the arrangement has the compact storage configuration illustrated in the Figure 3, the detached front legs being available for storage separately from the rest of the seat/table arrangement. It will be appreciated that the collapsed configuration of the Figure 3 will require relatively little storage space, whether it be in a car, or in a domestic storage area.

The juxtaposition of two similar seat/table arrangements of the kind shown in the Figure 2, in a back-to-back manner, can readily provide an integral picnic table/seat arrangement which can seat persons not only along both sides of the table top, but also on other, separate seats placed at the respective ends of the table top, there being available ample leg-room to accommodate persons sitting at the table ends.

Desirably, the two seat/table arrangements are secured together by wooden plates 58 secured by means of thumbscrews 60 under the table top members 14, 16. Such plates may be provided with apertures 62 for receiving the shaft of a garden umbrella. Such a plate may also be fixed in position adjacent the middle of the table top to improve the rigidity of the table and provide a centrally-positioned aperture for an umbrella shaft.

Whereas in the arrangement so far described, two separate folding frames have been provided, in one preferred, practical arrangement those frames are united at ground level by an integral longitudinal member 64 which joins the lower ends of the rear legs 24. The details of such a preferred arrangement are shown in a self-explanatory manner in the various Figures 5A, 5B, 6A, 6B and 7.

In that preferred arrangement the connecting links 38 are constituted by a U-shaped link 66 which

cooperates with a flat plate link 68. The free ends of the link 66 are received in apertures provided in the plate link 68, and a knurled nut 70 is arranged for screwing on one of the free ends of the link 66.

5 The front legs may in other arrangements be united by a transverse member, as in the case of the rear legs just referred to above, but in that case the bayonet-type connecting parts of the front legs are replaced by other forms of connecting parts.

10 The connecting links 38, 66 to 70, may be used as a securing means for securing the folding frames in the collapsed condition of Figure 3. In that Figure the connecting links are indicated at reference 70.

When the folding frames are joined by a transverse member such as 64 (Figure 7), that member can provide a useful means of carrying the collapsed arrangement of Figure 3, where the position of that member 64 is indicated by that reference numeral.

15 Seats of much greater transverse length may use more than two folding frames 18. For example, three separate, transversely-spaced frames be used; or two separate sets of framework as shown in the Figures 5 to 7 may be spaced transversely along the seat members 10, 12.

25 CLAIMS

1. A seat of the folding or collapsible kind in which a transverse seat member is carried on a folding framework,

wherein said framework comprises at least two similar, transversely-spaced folding frames, each such frame comprising

(a) a leg member incorporating a front leg and a rear leg, which legs are secured together at one end, define between them a large acute angle, and have at their other ends respective ground-engaging foot portions which are spaced apart from one another to define the base area of the seat;

(b) a seat member carrier for receiving and supporting said transverse seat member, said carrier being pivotally connected to said leg member near the junction of the front and rear legs;

(c) a backrest support pivotally connected intermediate its extremities to said seat member carrier at a position thereon remote from its pivotal connection with the leg member and over-hanging said rear leg;

(d) a connecting link pivotally connected at one end thereof to said rear leg at a position thereon remote from its respective extremities, and at the other end thereof to said backrest support at a position near the free end thereof which lies adjacent said rear leg, so as to allow the link to pivot between and occupy alternatively one of two alternative, stable end positions in which said free end of the backrest support compressively rests on said rear leg;

(e) a backrest carrier pivotally connected near one end thereof to said backrest support at or near a free end thereof which lies remote from said seat member carrier and said connecting link; and

(f) a prop pivotally connected to said backrest carrier at a position thereon remote from its pivotal connection with said backrest support, and free to pivot between alternative first and second end positions, said prop when in said first end position lying adjacent the backrest carrier, and when in said second

end position lying with its free end abutting and stably engaging the backrest support;

said transverse seat member being secured to and carried by each said seat member carrier at a position thereon such that the centre of gravity of that seat member lies at a position intermediate the pivotal connections of each seat member carrier with its associated leg member and backrest support respectively; and

75 wherein a transverse backrest member is secured to and carried by each said backrest carrier at a position thereon such that the centre of gravity of the backrest member lies at a position intermediate the pivotal connections of each said backrest carrier with its associated backrest support and prop respectively.

2. A seat according to Claim 1, wherein in each said folding frame said large acute angle between said front and rear legs lie in the range 45 to 90°.

3. A seat according to Claim 2, wherein in each said folding frame said larger acute angle between said front and rear legs lies in the range 50 to 80°.

4. A seat according to Claim 3, wherein in each said folding frame said large acute angle between said front and rear legs is approximately 57°.

5. A seat according to any preceding claim, wherein the constituent members thereof are so proportioned that when said ground-engaging foot portions of said front and rear legs are engaged on a horizontal surface, the angle of inclination of each said backrest support to the said horizontal surface changes from approximately 50° to approximately 85° when said connecting links are caused to move from one of said stable end positions to the other of said stable end positions.

6. A seat according to any preceding claim, wherein at least one pair of like legs of adjacent folding frames are joined together by a transverse, ground-engaging member.

7. A seat according to Claim 6, wherein the rear legs of adjacent folding frames are joined together by a said transverse ground-engaging member.

8. A seat according to any preceding claim, wherein in each said folding frame the said front leg is detachable from said leg member of a position near the junction of the front leg with the said rear leg.

9. A seat according to any preceding claim, wherein said framework includes in addition one or more other folding frames similar to the said two folding frames, all said folding frames being spaced apart transversely relative to said transverse seat member.

10. A seat according to any preceding claim, substantially as hereinbefore described with reference to and as illustrated by any single Figure or group of associated Figures of the accompanying diagrammatic drawings.