Aug. 18, 1953 W. E. HOUSEL 2,649,140

FOLDING SEAT

Filed April 19, 1950

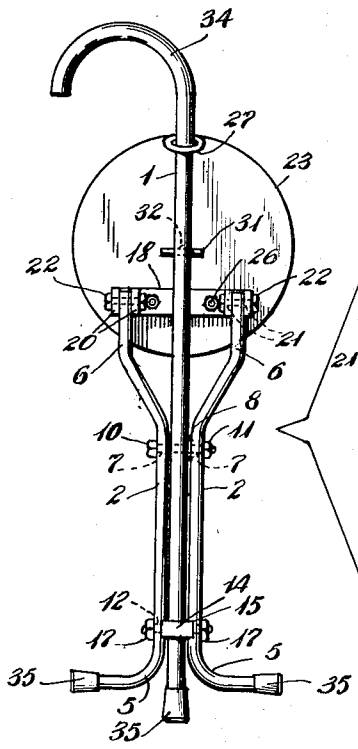


Fig. 1.

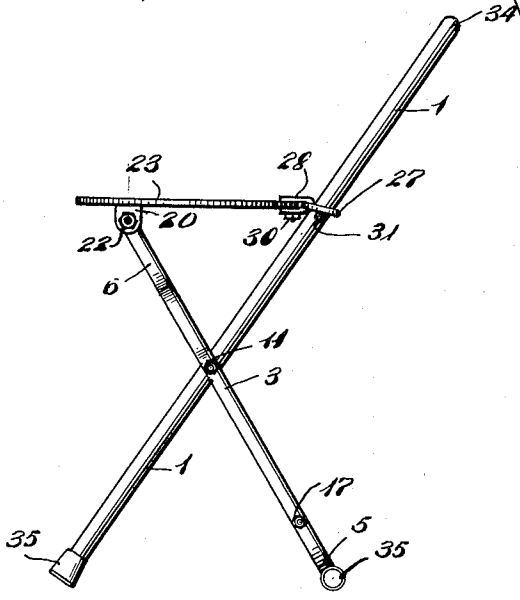


Fig. 3.

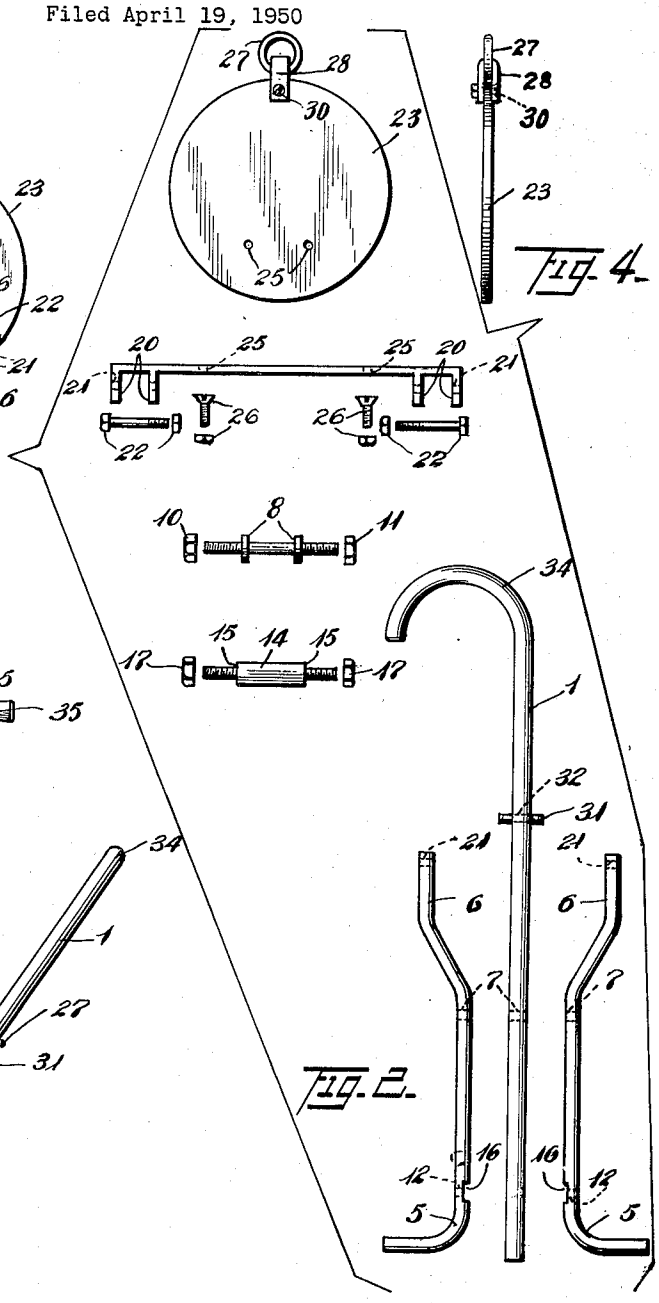


Fig. 2.

Fig. 4.

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FOLDING SEAT

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2 Claims. (Cl. 155—143)

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This invention relates to new and improved folding seats for use in fishing, viewing parades and sports events, and the like; and, more particularly, it relates to improvements in folding seats which have sturdy construction by the combination and arrangement of elements, and which may be folded when not in use as a seat to provide a walking cane.

The idea of a walking cane having elements associated therewith to provide a folding seat is not new. United States Patents Numbers 431,338, issued to De Kalb in 1890; 2,002,118 issued to Johnson in 1935; and, 2,133,047 issued to Sheldon in 1938, all show the general idea with other desirable features. None of these prior patents, however, have the construction and arrangement of elements which effects the rigid, sturdy construction of the device of this invention.

It is a primary object of this invention, therefore, to provide a seat of the class described which will be sturdy in construction and steady in use.

Another object of this invention is to provide a seat of the class described which will be light in weight, easily and conveniently carried, and efficient, durable and sturdy in construction and use.

A further object of this invention is to provide a seat of the class described, which has a substantially X shaped frame construction.

A still further object of this invention is to provide a device of the class described which will be adaptable for shipping in disassembled condition and easily assembled without any special tools or skill.

The foregoing and other objects and advantages of this invention will become more apparent and more fully understood from the following specification, in conjunction with the drawings forming a part thereof, wherein:

Fig. 1 is a rear elevational view of the seat in folded or collapsed position;

Fig. 2 is a view of the seat parts in disassembled condition;

Fig. 3 is a side elevational view of the seat in opened position for use; and,

Fig. 4 is a side elevation view of the circular seat element.

Referring to the drawings, wherein like members are given the same reference numeral, a straight or central leg member 1, preferably of tubular aluminum, is the central element around which the remaining elements of the invention are assembled and inter-connected.

There are a pair of opposed legs 2, substantially oppositely bowed. These legs 2 preferably have a straight central section 3 for reasons more fully described hereinafter. The lower section 5 of each of the legs 2 is bowed outwardly to provide spaced rest feet when the seat is opened; and, the upper section 6 of the legs 2 is bent or bowed outwardly with the uppermost extremity substantially parallel to the straight central section 3 of the leg 2, also preferably of tubular aluminum.

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There are apertures 7 provided in the straight or central leg 1 and the opposed legs 2 in transverse alignment. The legs 2 are mounted to the central leg 1 on opposed sides thereof, preferably with washers 8 therebetween. A bolt 10 is inserted through the aligned apertures 7 in the legs 1 and 2, and washers 8. A lock nut 11 threadedly engaging the bolt 10 securely mounts the members in pivotal relationship of desired frictional tightness.

In order to provide the desired rigid sturdy construction of this invention, the opposed legs 2 are further connected in rigid spaced relationship. This is accomplished, preferably before pivotally mounting them to the central leg 1, by providing aligned transverse apertures 12 through the legs 2, and inserting therethrough a spacer bolt 14 having both ends thereof threaded. This bolt 14 has shoulders 15 provided thereon to abut against the legs 2, which are preferably spot-faced 16 around the apertures 12 to provide flat abutting surfaces with the shoulders 15. Nuts 17 threadedly engage the bolt 14 on each end to provide the desired tension to securely fasten the two legs 2 in rigid spaced relationship. It is also frequently desirable to spot-face the legs adjacent these nuts 17.

A substantially U-shaped bracket 18, having parallel projections 20 extending from each end of the bracket 18 and substantially perpendicular to the plane of the bight section of the bracket 18, is pivotally mounted to the extreme upper section 6 of the opposed legs 2. This is accomplished by inserting the upper section 6 of the legs 2 between the parallel projections 20 of the bracket 18. This section 6 being parallel to the projections 20, which are spaced the diameter of the leg section 6 apart, it snugly fits therebetween. Aligned apertures 21 are provided through the projections 20 and extreme upper section 6 of the legs 2 therebetween. A nut and bolt assembly 22 in conjunction with these apertures 21 pivotally mounts each of the legs 2 to the bracket 18.

A seat 23, which is preferably circular in de-

sign and may be of any suitable material, such as aluminum, wood, plastic, plywood, pressed wood, and plastic impregnated pulp, is secured to the bight section of the bracket 18 in any suitable manner. A satisfactory manner of mounting the seat 23 and bracket 18 together is to provide properly spaced apertures 25 through the forward section of the seat 23 and through the bight section of the bracket 18. With the apertures aligned, a nut and bolt assembly 26, in conjunction with the apertures 25, secures the two parts together.

A rigid annular member or ring 27 is slidably positioned around the upper section of the straight or central leg member 1. This ring 27 is preferably only slightly larger in internal diameter than the external diameter of the central leg 1. A substantially U-shaped bracket 28 pivotally mounts the ring 27 to the seat 23, in conjunction with a nut and bolt assembly 30 provided therethrough in the customary manner.

A stop pin 31 is provided on the central leg 1 intermediate the ring 27 and the pivot bolt 10. This stop pin 31 may be secured to the central leg 1 in any suitable manner. A preferred manner, however, is to provide a transverse aperture 32 in the leg 1 through which the pin is press-fitted. The stop pin is so positioned to turn the ring 27 about the longitudinal axis of the central leg 1, at the horizontal level of the seat 23 when the seat device is unfolded. The annular ring 27 then functions as a gravity clamp on the leg 1 to support the rear of the seat 23. If a ring 27 of internal diameter much larger than the external diameter of the leg 1 is employed, the stop pin 31 supports the rear of the seat 23, and due consideration must be taken of the stress forces in selecting the size and material of the stop pin 31 under this condition.

The uppermost extremity of the central or straight leg 1 is preferably turned in U-shape to provide a cane handle 34 to facilitate ease of carrying; and the lower extremity of all the legs are preferably provided with rubber caps 35 to prevent skidding when the seat is unfolded and positioned upon slippery surfaces.

The preferred arrangement and position of the pivotal elements of the leg members is such that the points of pivot of any one of the opposed legs 2—leg to bracket and leg to central leg—and the joinder of the spacer bolt and other leg are substantially aligned. Thus is provided a substantially X-shaped frame construction, with the bracket 18 connecting the top points and the spacer bolt 14 connecting the bottom points to provide vertices connected triangles—a rigid, sturdy construction.

In assembling the device of this invention, the opposed legs are positioned on the spacer bolt 14 and the nuts 17 loosely turned thereon. The washers 8 are then positioned between the legs 1 and 2 and the pivot bolt 10 passed through the legs and washers. The lock nut 11 is then threaded onto the bolt 10 tight. The ring 27, having the seat 23 pivotally connected thereto and the bracket 18 secured to said seat, is positioned around the upper section of the central leg 1. The upper section of the legs 2 are then positioned intermediate the bracket projections 20 and pivotally connected thereto with the nut and bolt assembly 22. The nuts 17 are then tightened on the spacer bolt 14.

In operating the device of this invention, assuming that it is folded, one may push downwardly on the rear of the seat or rearwardly on the opposed legs. The seat is thus unfolded by the pivot action around the two aforementioned and described pivot points, until the seat 23 is in horizontal position.

Having thus described my invention, what I claim as new and wish to secure by grant of United States Letters Patent is:

1. A folding seat comprising a central leg member, a ring slidably encircling said central leg member, a seat pivotally mounted to said ring, a bracket secured beneath the forward section of said seat, a pair of parallel projections extending from each end of said bracket, a pair of leg members, means pivotally mounting each of said pair of leg members between different pairs of said parallel projections, said pivotally mounted leg members having inwardly turned sections diametrically opposed said central leg member and substantially adjacent thereto, means pivotally mounting all of the aforementioned leg members in substantially adjacent relationship, a spacer bolt, shoulders on said spacer bolt, apertures in said pivotally mounted pair of leg members to receive said spacer bolt permitting the ends thereof to pass through said leg members and the shoulders to abut against said leg members, said shoulders and said leg members being so constructed and arranged to provide substantially full abutting faces, and nuts threadedly engaging the ends of said spacer bolt to rigidly secure said leg members in spaced relationship.

2. A folding seat comprising a tubular aluminum central leg member, a pair of tubular aluminum legs positioned on opposed sides of said central leg and pivotally mounted thereto at an intermediate point, aligned apertures in said pair of legs, a spacer bolt positioned between said legs and the ends thereof extending through said apertures therein, flat faced shoulders provided on said spacer bolt, flat faced sections on said legs around said apertures, nuts threadedly engaging said bolt to force said faces on said shoulders and legs into tight abutting relationship, a seat, a bracket secured to the forward section beneath said seat, a pair of parallel projections extending from each end of said bracket and adapted to receive the ends of said pair of legs therebetween with one leg between each pair of projections in snug relationship, means pivotally mounting said legs to said projections, a ring slidably encircling said central leg, and a pin secured to said central leg and so positioned to engage said ring pivotally mounted to said seat.

WILLIAM E. HOUSEL.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
431,338	De Kalb	July 1, 1890
2,002,118	Johnson	May 21, 1935

FOREIGN PATENTS

Number	Country	Date
125,269	Great Britain	Apr. 17, 1919