Nov. 15, 1966 W. H. CRAMER 3,285,654

FOLDING BEACH CHAIR

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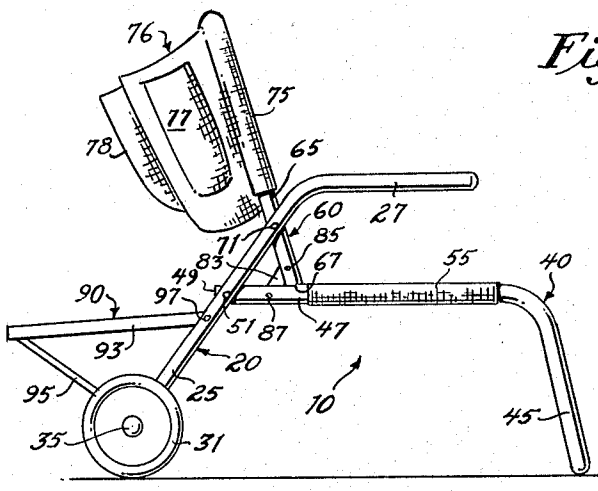


Fig. 1.

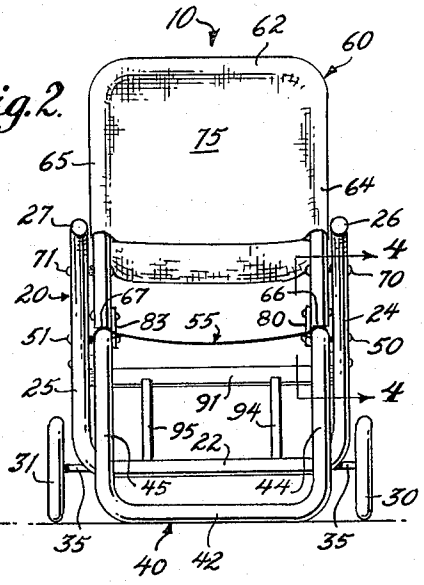


Fig. 2.

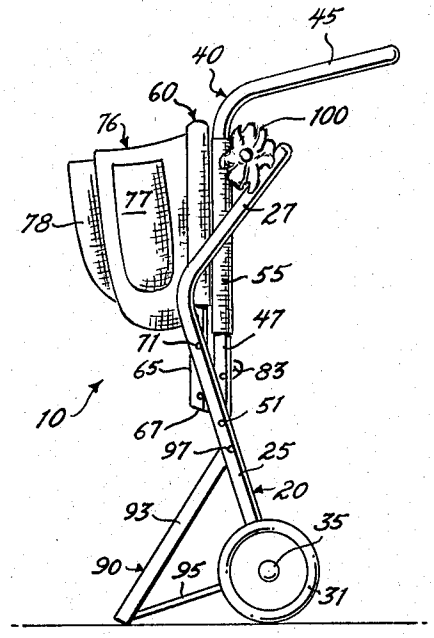


Fig. 5.

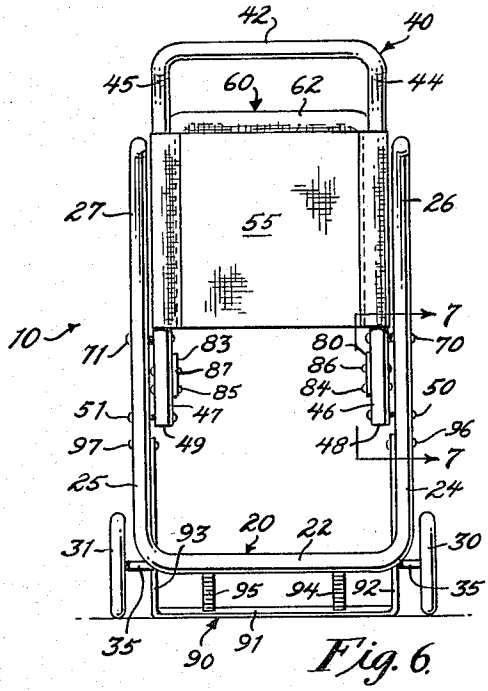


Fig. 6.

INVENTOR.
WILLIAM H. CRAMER
BY
Seidel & Gonda
ATTORNEYS.

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FOLDING BEACH CHAIR

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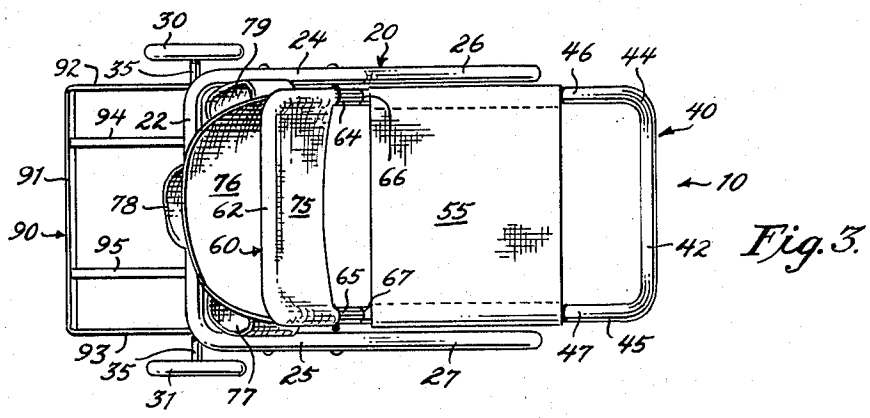


Fig. 3.

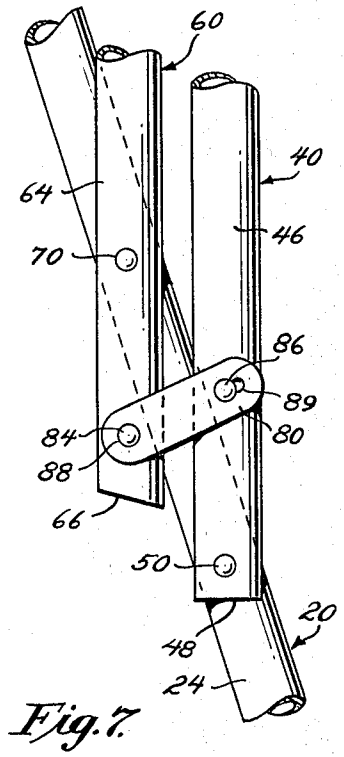


Fig. 7.

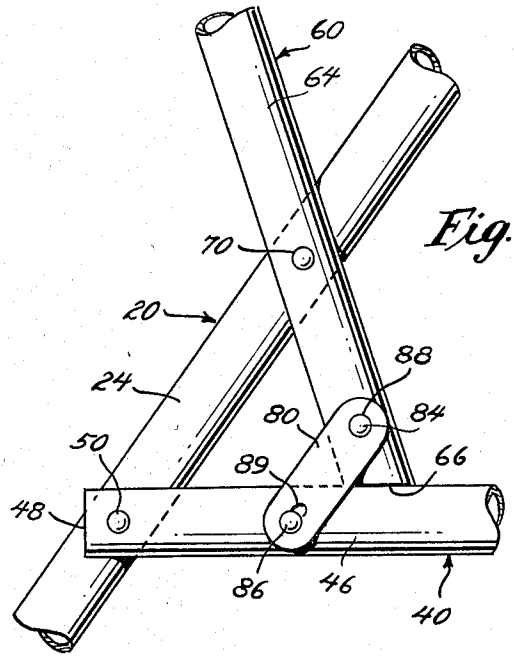


Fig. 4.

INVENTOR.
WILLIAM H. CRAMER

BY

Seidel & Gonda

ATTORNEYS.

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FOLDING BEACH CHAIR

William H. Cramer, 2169 Kirk Ave., Abington, Pa.

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10 Claims. (Cl. 297—35)

This invention relates generally to folding chairs, and in particular to a folding beach chair which may be utilized as a stand and carrier for various beach paraphernalia.

Modern beach outings, in keeping with complex modern day living, entail a great deal of miscellaneous beach paraphernalia, in addition to a beach chair. Thus, beach revelers find themselves confronted with the prospect of carrying a myriad of paraphernalia across a wide expanse of sand. Clearly a cart or carrier of some sort is indicated. However, it is not desired to add to the paraphernalia.

Therefore, to overcome the foregoing and other difficulties of the prior art, a general object of this invention is to provide a carrying stand and cart which may be converted into a beach chair.

It is an object of this invention to provide a new and improved folding chair which is lightweight and portable.

A further object is to provide a folding beach chair which is economical to produce and which utilizes conventional currently available components that lend themselves to standard mass-production manufacturing techniques.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

Other objects and a fuller understanding of the invention may be had by referring to the following description and claims taken in conjunction with the accompanying drawings in which:

FIGURE 1 is a side elevational view of a folding chair in an open position.

FIGURE 2 is a front elevational view of FIGURE 1.

FIGURE 3 is a plan view of FIGURE 1.

FIGURE 4 is an enlarged sectional view taken in the direction of line 4—4 of FIGURE 2.

FIGURE 5 is a side elevational view of a folding chair in a closed upright position.

FIGURE 6 is a front view of FIGURE 5.

FIGURE 7 is an enlarged section taken in the direction of line 7—7 of FIGURE 6.

Referring to the drawings in detail, wherein like numerals indicate like elements, there is shown in the figures a drawing of the folding beach chair of the present invention designated generally as **10**. The chair is of a lightweight variety having framework of lightweight tubing and seat supports of a synthetic fabric material.

A base frame **20** is provided by a U-shaped frame of lightweight tubing. A horizontal base member **22** provides a closed end of the U-shape. The vertical members **24, 25** extend from the base member **22** toward an open end of the U-shape, as illustrated. The vertical members **24** and **25** incline slightly toward the front of the chair **10** and are bent to form the horizontal arm members **26, 27** at the open end of the base frame **20**. Wheels **30, 35** are provided on each side of the horizontal base member **22** on an axle **35** which passes through the base member **22**.

A U-shaped lightweight frame is also utilized for the leg frame **40**. The leg base member **42** corresponds to the base of the U-shape with the upright leg members **44, 45** extending upward in a generally vertical direction. The

upright leg members **44, 45** are bent to form horizontal support members **46, 47**. The horizontal members have ends **48, 49** pivoted on the base frame **20** by means of pivot pins **50, 51**. A seat member **55**, of a synthetic fabric, may be connected between the horizontal support members **46, 47** as shown. The leg frame **40** is pivoted at a position inside of the vertical members **24, 25** of the support frame **20** so that it may be easily folded without interference.

The back frame **60** is an inverted U-shape formed of lightweight tubing. The horizontal back member **62** forms the base of the U-shape. The upright members **64, 65** extend downward from the horizontal member **62** to about, respectively, at abutting ends **66, 67** against leg frame **40**. The back frame **60** is pivoted on the base frame **20** by means of pivot pins **70** and **71**. The back **75** is formed on the frame **60** out of a synthetic fabric similar to that utilized for the seat **55**. Additionally, the back side of the back **75** may include a carrying bag **76** having compartments **77, 78**, and **79**.

The link members **80** and **83** provide a connection between the leg frame **40** and back frame **60**. The linkage at both sides of the chair is identical, therefore the following reference is made to the linkage at the left side of the chair shown in greater detail in FIGURES 4 and 7. The pivot link **80** has a pivot hole **88** at one end and a pivot slot **86** at the opposite end thereof. A pivot pin **84** at the end of the upright member **64** of back frame **60** passes through the hole **88**, as illustrated. Similarly, a pivot pin **86** at a point on the support member **46** of leg frame **40**, projects through the slot **89** of link member **80**. Both the pins **84** and **86** project completely through their respective tubular members at a diameter thereof. Notice that the link **80** shown in FIGURE 4 has a generally parallel relationship with the vertical member **24** of base frame **20** when the chair is unfolded. The particular positioning of the pivot pin **86** on leg frame **40** is, of course, related to the length of the pivot member **80**. The general location of pin **86** may be defined, however, as being between the apposed portion of frame **40**, against which the end **66** of frame **60** abuts, and the pivoted end **48** of frame **40**. In this manner, it can be visualized in FIGURE 4 that the weight of a body seated in the chair will cause contraclockwise moments of the frames **20, 40** to securely lock them in an open configuration. On the other hand, a clockwise movement of those frames will separate them slightly, allowing them to be pivoted into the folded parallel relationship shown in FIGURE 7.

The U-shaped bracket stand is a strap of lightweight metal bent to the shape shown. A base member **91** is provided at the closed end of the U-shape and the side members **92, 93** extend therefrom. The ends of the side members **92, 93** are secured by means of rivets **96, 97** to the vertical members **24** and **25** of frame **20** at a position slightly above the wheels **30, 31**. The support braces **94, 95** extend out from the horizontal base member **22** of frame **20** to space the horizontal base member **91** of the bracket as shown. The side members **93** of bracket **90** are generally parallel to the horizontal arm members **26, 27** and extend from an opposite side of the base frame **20**. As shown in FIGURE 5, the folded chair may be tipped to an upright position for support on the support bracket **90**.

The folding chair illustrated in FIGURES 1, 2, 3 and 4 is an open position and obviously may be enjoyed for relaxing in the sun. The carrying bag **76** along with the various compartments **77, 78** and **79**, may be filled with various beach paraphernalia. When it is desired to move, the chair may be folded to the configuration shown at FIGURE 5. This may be accomplished by (FIGURE 1) lifting slightly on the horizontal arm member **27** while simultaneously pushing downward on the leg frame **40**.

This accomplishes a clockwise pivoting of both the leg frame **40** and the back frame **60** to slightly separate them, with the link members **82, 83** providing extensions for the upright members **64, 65** of the back frame **20**. The leg frame **40** may then be swung upward pivoting it in a counterclockwise direction while the back frame **20** continues in a clockwise direction. This continues until they are in the parallel vertical relationship extending above the horizontal arm members **26, 27**. The chair is now folded and may be positioned to stand in an upright position shown in FIGURE 5 by lifting of the leg member **45** as the entire chair will pivot easily about axle **35** in the wheels **30, 31**. The bracket **90** will support the chair in an upright position shown. The horizontal arms **26, 27** are now at an inclined position forming an acute angle with the horizontal support members **46, 47**. A beach umbrella, or the like, may be laid across the horizontal arm members **26, 27** within the aforementioned acute angle. Base member **42** of the leg frame **40** provides a convenient handle for pulling the folded chair which is now transformed into a carrying stand and cart.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. A folding chair comprising a U-shaped base frame including vertical members bent to form horizontal arms at the open-end of said U-shape, a U-shaped leg frame bent to form horizontal support members at the open end of said leg frame, said support members having ends pivoted on said base frame between said vertical members and below said arms, a seat on said leg frame connected between said support members, an inverted U-shaped back frame pivoted on said base frame between said vertical members above said ends of said support members, said back frame having ends in abutting relationship against apposed portions of said support members, a back connected on said back frame, link means pivotably connecting said abutting ends of said back frame to said leg frame for securing said frames in a rigid unfolded chair and selectively enabling said leg and back frames to be separated from said abutting relationship and pivoted together in a parallel relationship extending above said arms in a folded chair, and bracket means on said base frame to stand said folded chair at an upright position with said arms providing carrying racks thereon.

2. A folding chair in accordance with claim **1** wherein said link means are provided by a pair of link members each pivoted at opposite ends, respectively, between said abutting ends and points on said support members, said points positioned between said apposed portions and ends of said support members.

3. A folding chair in accordance with claim **1** wherein said link means are provided by a pair of link members each having a round hole and an elongated slot at opposite ends thereof, said abutting ends each having a pivot pin in operative engagement in said hole of a respective link member and said support members each having a pivot pin in operative engagement in said slot of a respective link member, said pins of said support members being located at points between said apposed portions and ends of said support members, said slots enabling said leg and back frames to be pivoted together in close parallel relationship.

4. A folding chair in accordance with claim **6** wherein said link members and pins are located at inside positions on said respective leg and back frames.

5. A folding chair comprising a U-shaped base frame including vertical members bent to form horizontal arms at the open-end of said U-shape, a U-shaped leg frame

bent to form horizontal support members at the open-end of said leg frame, said support members having ends pivoted on said base frame between said vertical members and below said arms, a seat on said leg frame connected between said support members, an inverted U-shaped back frame pivoted on said base frame between said vertical members above said ends of said support members, said back frame having ends in abutting relationship against apposed portions of said support members, a back connected on said back frame, a pair of link members having round holes and elongated slots at opposite ends thereof, a first pair of pivot pins through said round holes and at said abutting ends, the second pair of pivot pins through said slots and at positions on said support members located between said apposed portions and ends of said support members, said links securing said frames in an open position and selectively enabling said leg and back frames to be separated from said abutting relationship and pivoted together in a parallel relationship extending above said arms in a folded chair at an upright position.

6. A folding chair in accordance with claim **5** wherein said frames are of a tubular configuration and said seat and back are of a fabric.

7. A folding chair in accordance with claim **5** wherein wheels are provided on said base frame at a closed end of said U-shape, and a carrying bag attached to said back frame.

8. A folding chair in accordance with claim **5** wherein bracket means are provided by extensions on said U-shaped base frame proximate a closed end thereof, said extensions protruding from said vertical members at a side opposite from said arms, said bracket means for standing said folded chair at an upright position.

9. A folding chair in accordance with claim **5** wherein said arms cooperate to form a rack thereon whenever said chair is in a folded upright position.

10. A folding chair comprising a U-shaped base frame including vertical members bent to form horizontal arms at the open-end of said U-shape, a U-shaped leg frame bent to form horizontal support members at the open end of said leg frame, said support members having ends pivoted on said base frame between said vertical members and below said arms, a seat on said leg frame connected between said support members, an inverted U-shaped back frame pivoted on said base frame between said vertical members above said ends of said support members, said back frame having ends in abutting relationship against apposed portions of said support members, a back connected on said back frame, and link means pivotably connecting said abutting ends of said back frame to said leg frame for securing said frames in a rigid unfolded chair and selectively enabling said leg and back frames to be separated from said abutting relationship and pivoted together in a parallel relationship extending above said arms in a folded chair.

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FRANK B. SHERRY, *Primary Examiner.*

FRANCIS K. ZUGEL, *Examiner.*