

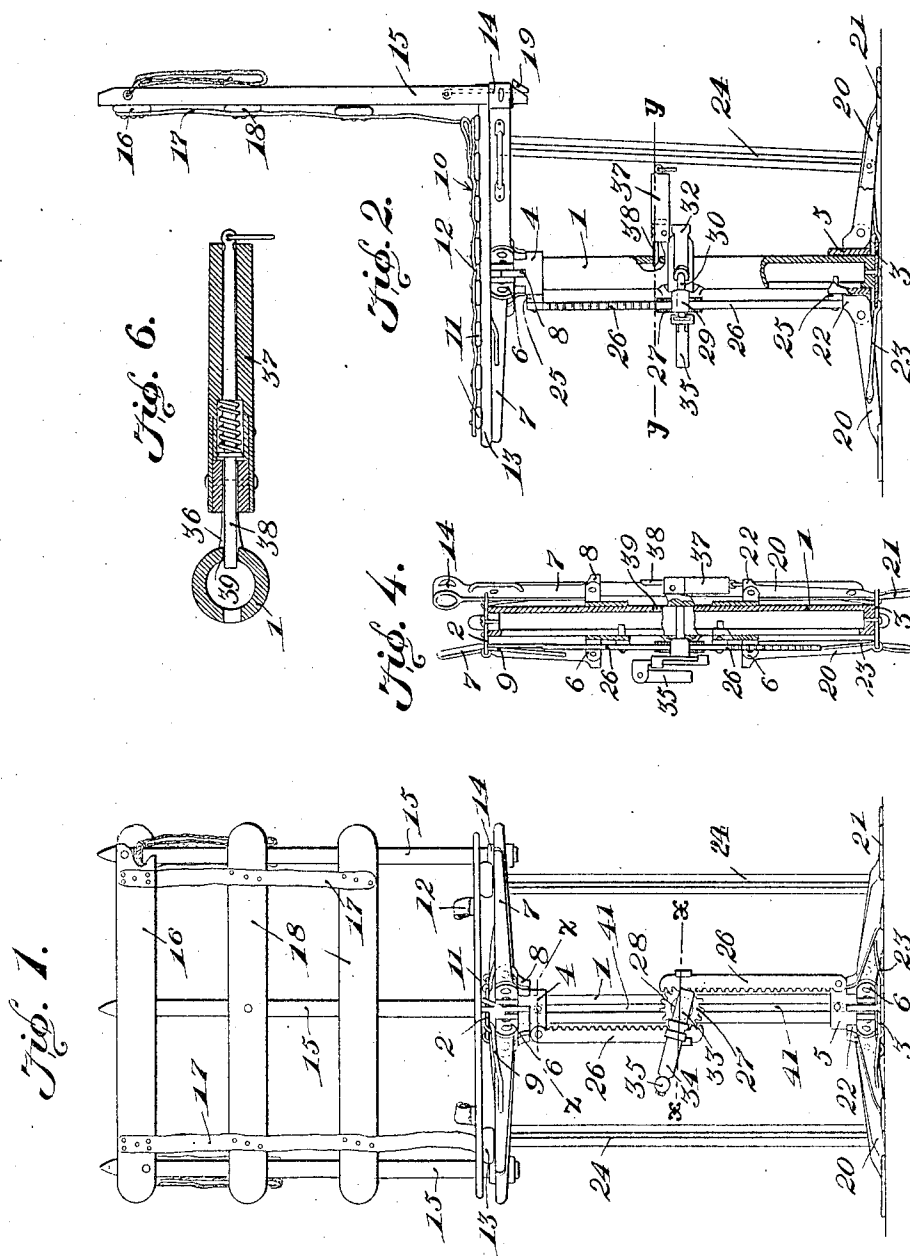
No. 844,674.

PATENTED FEB. 19, 1907.

W. GYMER.
FOLDING CHAIR.

APPLICATION FILED APR. 26, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

Edw. H. H. H. H.
Arthur D. Lawson.

William Gymer,

INVENTOR.

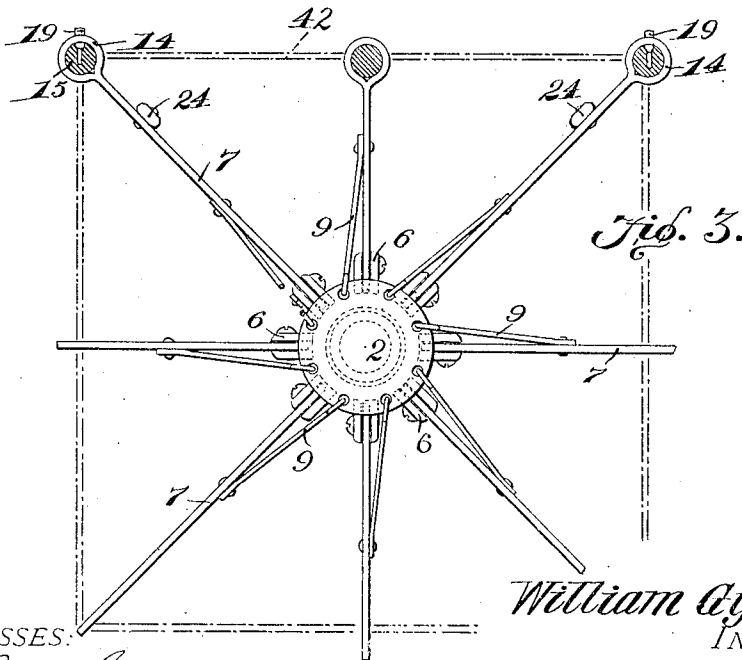
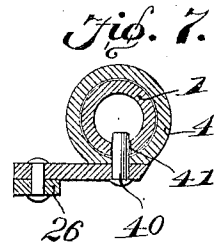
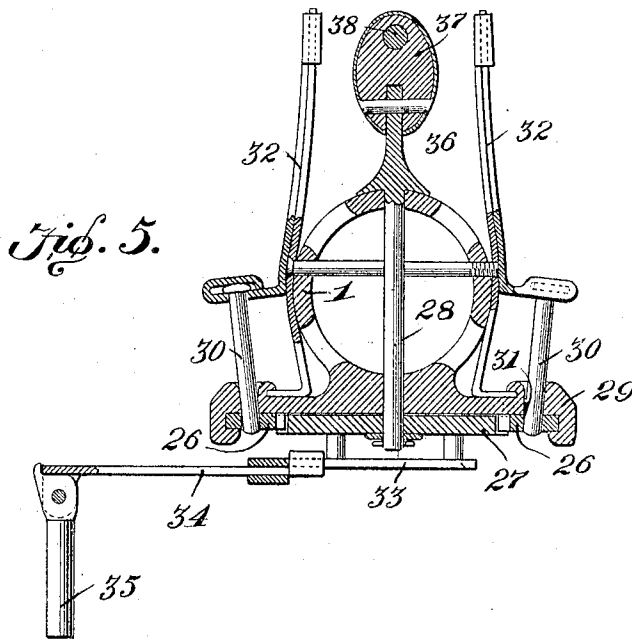
By *Chas. H. H. H.*
ATTORNEYS

No. 844,674.

PATENTED FEB. 19, 1907.

W. GYMER.
FOLDING CHAIR.
APPLICATION FILED APR. 26, 1906.

2 SHEETS—SHEET 2.



WITNESSES:

E. J. Stewart
Hubert D. Lawson

William Gymer,
INVENTOR.

By *C. A. Snow & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM GYMER, OF BOULDER CREEK, CALIFORNIA.

FOLDING CHAIR.

No. 844,674.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed April 26, 1906. Serial No. 313,850.

To all whom it may concern:

Be it known that I, WILLIAM GYMER, a citizen of the United States, residing at Boulder Creek, in the county of Santa Cruz and State of California, have invented a new and useful Folding Chair, of which the following is a specification.

This invention relates to folding or collapsible chairs; and its object is to provide a device of this character which may be folded into a compact bundle and which can be quickly opened, so as to constitute a rigid chair.

The invention consists of a standard having sleeves mounted on it adjacent its ends and from which radiate arms which are so connected to the ends of the standard that when the sleeves are moved toward each other the arms will fold against the standard, and vice versa. Means are provided for positively actuating the sleeves simultaneously and for automatically securing them after they have been adjusted to open the chair. Supplemental supports are connected to certain of the arms to reinforce the standard, and a back and seat are detachably mounted on the chair.

The invention also consists of certain other novel features of construction and combinations of parts which will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings, Figure 1 is a front elevation of the chair. Fig. 2 is a side elevation partly in section. Fig. 3 is a plan view of the top of the chair with the back in section. Fig. 4 is a view, partly in section, of the chair collapsed. Fig. 5 is an enlarged section through the rack actuating and locking mechanism, said section being taken on the line *xx*, Fig. 1. Fig. 6 is an enlarged section through the handle and standard, taken on the line *yy*, Fig. 2. Fig. 7 is an enlarged section through the standard and sleeve-guide, said section being taken on the line *zz*, Fig. 1.

Referring to the figures by numerals of reference, 1 is a standard having an angular flange 2 at its upper end and a similar flange 3 at its lower end. Slidably mounted on the standard near its ends are upper and lower sleeves 4 and 5, respectively, each sleeve having ears 6 thereon. Pivotally connected to the ears of the upper sleeve are arms 7, which radiate from the sleeve and have depending

toes 8 adjacent their pivots, which are adapted when the arms assume horizontal positions to contact with the sleeve. Each of these arms has a rod 9 pivoted to it at a point between its ends, said rods being pivotally connected to the upper flange 2.

The arms 7 are adapted to support a seat 10, formed with a plurality of parallel slats 11, flexibly connected by means of straps 12, and pivotally connected to the end slats are supporting-straps 13, adapted to be swung into position under all of the slats, so as to hold them in proper relation when they are disposed upon the arms 7. Some of the arms 7 terminate in sleeves 14, adapted to receive uprights 15, to the end ones of which are pivoted the ends of a top slat 16, connected by means of flexible straps 17 to slats 18, one of which is preferably pivotally connected to the intermediate upright 15. The end uprights are preferably locked within their sleeves by means of spring-catches 19, and all of the uprights and slats connected thereto constitute a detachable back for the chair.

Pivotally connected to the ears 6 of the lower sleeve 5 are base-strips 20, which radiate from the sleeve and preferably terminate in feet 21, adapted to contact with the ground. Each of these strips has a toe 22 adjacent its pivot and adapted to swing against the sleeve to limit the upward swinging movement of the strips. Rods 23 are also connected to the strips 20 at points between the ends thereof, and the inner ends of these rods are pivotally connected to the lower flange 3. The arms 7, extending to the rear corners of the seat 10, have supplemental supports 24 pivoted to them and extending downward and pivoted to the corresponding strips 20. These supplemental supports are parallel with the standard 1 and substantially equal in length thereto.

Ears 25 extend in opposite directions from the two sleeves 4 and 5, and to each ear is pivoted one end of a rack 26. The two racks are parallel and engage opposite portions of a gear 27, which is journaled on a stud 28, extending from the center of the standard 1. These racks are held in engagement with the gear by means of angular brackets 29, which constitute guides, and in each bracket is mounted a locking-pin 30, adapted to be automatically projected into an opening in the rack 26 by means of a spring-pressed lever 32. These levers are disposed at oppo-

site sides of the standard 1, so that by drawing them together the two locking-pins 30 will be simultaneously disengaged from their racks 26. A strip 33 is secured across the outer face of the gear 27, and slidably mounted on it is an arm 34, having a grip 35 pivoted thereto and adapted to extend at right angles therefrom or to fold downward thereon. This grip and the slidable arm 34 constitute a crank whereby the gear may be readily rotated manually. An ear 36 extends from the standard between the levers 32, and pivoted on it is a handle 37, having a spring-pressed plunger 38 therein adapted to project into an opening 39 in the recess, so as to lock the handle at right angles to the standard.

When the seat is set up or open and with the parts in positions described, the same can be very quickly collapsed by first lifting the seat 10 from the arms 7, swinging the supporting-strips 13 into position parallel with the slats 11, and then rolling the slats into a compact bundle. The back is then removed by disconnecting the catches 19 from the sleeves 14, after which the uprights 15 can be swung into position parallel with the slats 16 and 18 and the back can then also be rolled into a compact bundle. Levers 32 are now pressed together, so as to retract the locking-pins from engagement with the racks 26, and gear 27 is rotated by means of a crank, so as to draw the racks together and cause a corresponding movement of the sleeves 3 and 4. As the arms 7 and strips 20 are connected to the flanges 2 and 3 by means of rods 9 and 23, this sliding movement of the sleeves will result in the arm 7 and strips 20 folding inward against and parallel with the standard 1, and the supplemental supports 24 will be drawn inward toward said standards and rest close to it. During the operation of rotating the gear the handle 34 can be grasped to facilitate said operation. It is to be understood that the handle 37 is grasped while the chair is being folded in the manner above described, so that the hand will not be in the way of any of the sliding or folding parts. After the parts have been completely folded the spring-pressed plunger 38 of the handle is disengaged from the standard and said handle is folded into position parallel with the standard. The arm 34 is then slid longitudinally upon the strip 33 and grip 35 is folded thereagainst. There are therefore no projecting parts upon the collapsible support and a compact bundle is produced which can be conveniently carried from place to place. To set up or open the chair, the operation above described is reversed, and as soon as the arms and its strips assume their proper position the racks will be automatically locked by the spring-pressed locking-pins 30. The seat and the back can then be placed in

proper position and the device is ready for use.

It will be noted that the two sleeves 4 and 5 have inwardly-extending lugs 40, which travel in a slot 41 in standard 1, so as to prevent the sleeves from turning. This construction is shown in detail in Fig. 7.

If preferred, flexible bracing-strips 42, formed of strong cord, light chains, or other devices, may be connected to the ends of the strips 7 and 20, as shown by dotted lines in Fig. 3.

The preferred form of the invention has been set forth in the foregoing description; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of the invention.

What is claimed is—

1. In a device of the character described the combination with a standard, sleeves slidably mounted thereon; and arms radiating from the sleeves; of a rotatable device, means actuated thereby for simultaneously sliding the sleeves in opposite directions, a connecting device pivotally secured to the arms and the ends of the standards.

2. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, and arms pivoted to and radiating from the sleeves; of means connected to the standard for simultaneously sliding the sleeves in opposite directions, connecting devices pivoted at their ends to the arms and standards, and means for locking the sleeve-actuating means.

3. In a device of the character described the combination with a standard, sleeves thereon, and arms pivoted to and radiating from the sleeves; of means mounted on the standard for simultaneously sliding the sleeves in opposite directions, a locking device for automatically securing said means against movement when the sleeves reach predetermined points, and connecting means pivotally connected to the arms and the ends of the standards.

4. In a device of the character described the combination with a standard, sleeves thereon, and arms pivoted to and radiating from the sleeves; of means mounted on the standard for simultaneously sliding the sleeves in opposite directions, a locking device for automatically securing said means against movement when the sleeves reach predetermined points, connecting means pivotally connected to the arms and the ends of the standards, and supplemental supports interposed between and connecting the arms of the two sleeves.

5. In a device of the character described

the combination with a standard, sleeves slidably mounted thereon, and arms pivoted to and radiating from the sleeves; of rods pivoted to the arms and the ends of the standard, means mounted on the standard for simultaneously sliding the sleeves in opposite directions.

6. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, and arms pivoted to and radiating from the sleeves; of rods pivoted to the arms and the ends of the standard, means mounted on the standard for simultaneously sliding the sleeves in opposite directions, and a locking device for automatically securing said means when the sleeves arrive at predetermined points.

7. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, and arms pivoted to and radiating from the sleeves, and means for limiting the movement of the arms upon the sleeves; of actuating means mounted on the standard for simultaneously sliding the sleeves in opposite directions, and rods connecting the arms with the ends of the standard.

8. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, arms radiating from the sleeves and pivoted thereto, and rods pivoted to the arms and standard; of a gear rotatably mounted on the standard, and racks connected to the sleeves and engaging opposite portions of the gear.

9. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, arms radiating from the sleeves and pivoted thereto, and rods pivoted to the arms and standards; of a gear rotatably mounted on the standard, racks connected to the sleeves and engaging opposite portions of the gear, and locking means for automatically engaging the racks.

10. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, arms radiating from the sleeves and pivoted thereto, and rods pivoted to the arms and standard; of a gear rotatably mounted on the standard, racks connected to the sleeves and engaging opposite portions of the gear, a collapsible crank connected to the gear, and locking means for automatically engaging the racks.

11. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, arms radiating from the sleeves and pivoted thereto, and rods pivoted to the arms and standard; of a gear rotatably mounted on the standard, racks connected to the sleeves and engaging opposite portions of the gear, a handle pivotally connected to the standard, means for locking it at an angle thereto, and locking devices upon the standard at opposite sides of the handle.

12. In a device of the character described the combination with a standard, sleeves slidably mounted thereon, arms radiating from the sleeves and pivoted thereto, and rods pivoted to the arms and standard; of a gear rotatably mounted on the standard, racks connected to the sleeves and engaging opposite portions of the gear, guides upon the standard and engaging the racks, locking-pins mounted therein, and spring-controlled levers for actuating said pins, said pins adapted to engage apertures within the racks.

13. In a device of the character described the combination with a standard; of series of arms slidable independently upon the standard, rotatable and longitudinally-movable means for simultaneously folding the arms upon the standard and for projecting them radially therefrom, sleeves upon some of the arms, back uprights projecting into said sleeves, and means for detachably securing said uprights within the sleeves.

14. In a device of the character described the combination with a standard; of arms slidably connected thereto, means for simultaneously folding the arms upon the standard and for projecting them radially therefrom, sleeves upon some of the arms, back uprights projecting into said sleeves, means for automatically and detachably securing said uprights within the sleeves, slats pivotally connected to the uprights and extending thereover, and a collapsible seat supported by the arms.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM GYMER.

Witnesses:

A. D. BOWDEN,
S. L. JONES.