Feb. 2, 1926. 1,571,538

J. L. CABLE

FOLDING CHAIR

Filed Nov. 25, 1924 2 Sheets-Sheet 1

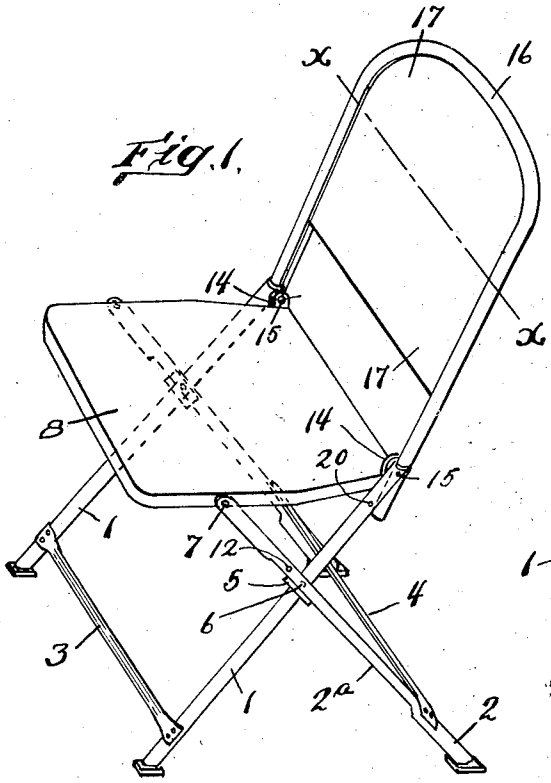



Fig. 1.

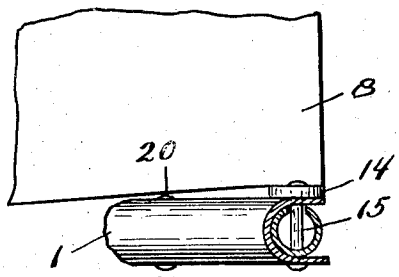



Fig. 3.

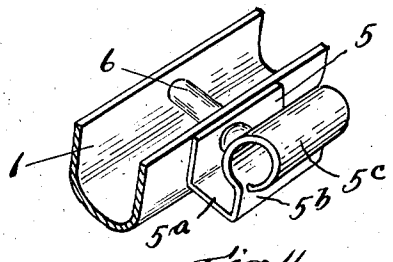



Fig. 4.

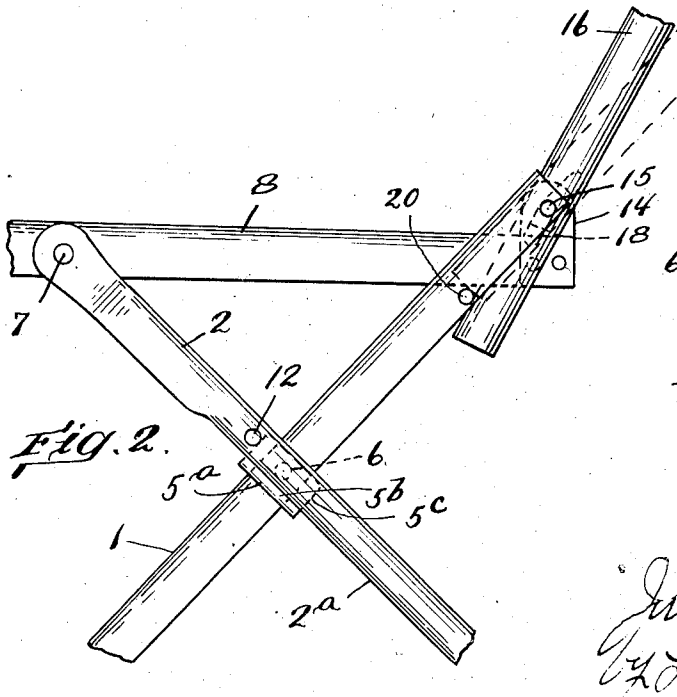



Fig. 2.

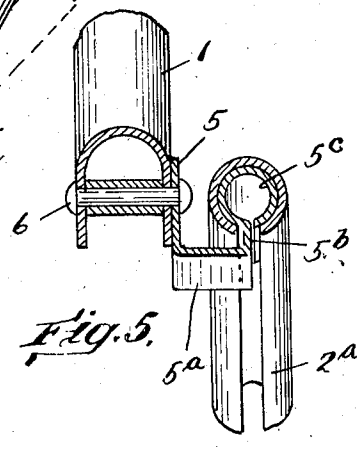



Fig. 5.

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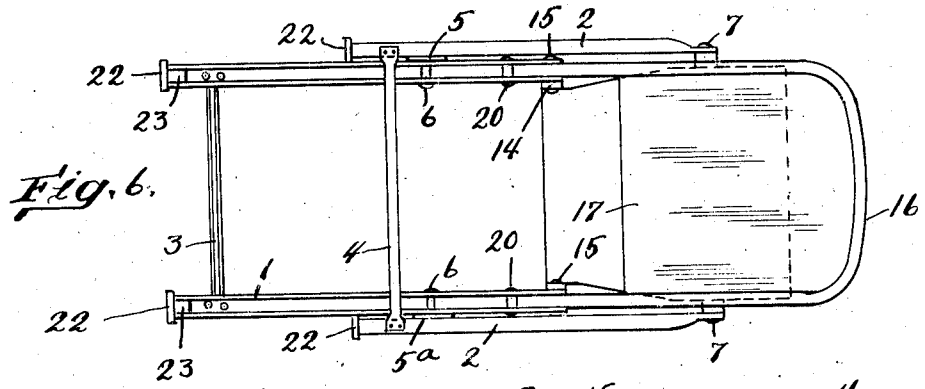



Fig. 6.

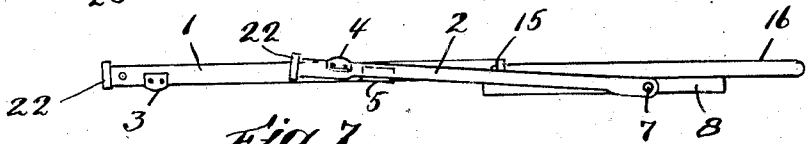



Fig. 7.

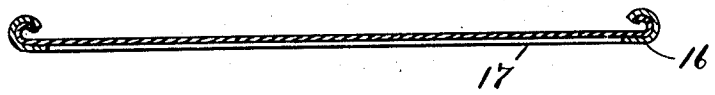



Fig. 8.

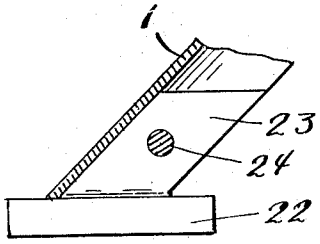



Fig. 9.

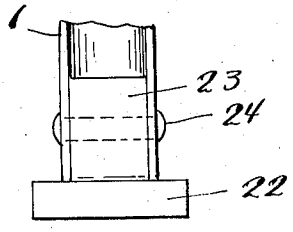



Fig. 10.

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Patented Feb. 2, 1926. 1,571,538.

# UNITED STATES PATENT OFFICE.

JULIUS L. CABLE, OF BOSTON, MASSACHUSETTS.

## FOLDING CHAIR.

Application filed November 25, 1924. Serial No. 752,088.

*To all whom it may concern:*

Be it known that I, JULIUS L. CABLE, a citizen of the United States, and resident of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Folding Chairs, of which the following is a specification.

This invention relates to folding chairs and more especially to a type of chair which is constructed entirely of metal and has a non-flexible seat and back.

Chairs of this type have usually been constructed of wood, and some of the objections to such chairs are that they are not adapted to fold as compactly as desired, and also lack durability.

The objects of my invention are to provide a form of folding chair of the type above indicated which shall have its legs and back frame constructed of semi-tubular metal, and which shall have great strength and durability for its weight, and shall be adapted to be folded into a form having a thickness but slightly greater than the thickness of one of the legs.

I accomplish these objects in the manner hereinafter described and as illustrated in the accompanying drawing in which a preferred embodiment of my invention is shown and in which:

Fig. 1 is a perspective view of a folding chair, constructed according to my invention.

Fig. 2 is a side elevation thereof.

Fig. 3 is a detail sectional view of the seat connection.

Fig. 4 is a detail perspective view of the connecting slide between the legs.

Fig. 5 is a detail sectional view of the pivotal connection between a pair of legs.

Figs. 6 and 7 are side and edge views of the chair in folded position.

Fig. 8 is a sectional view of the seat back at line $x$—$x$ of Fig. 1.

Figs. 9 and 10 are detail views of a form of foot which I employ.

As illustrated in the drawing, the chair comprises two pairs of legs 1, 2 of semi-tubular metal, the front legs 1 being connected by a brace 3 and the rear legs by a brace 4, of similar metal. Each pair of legs are pivotally connected at their middle portions by means of an angle plate, or angularly shaped bracket formed of a single piece of metal bent to provide a base portion 5, which is pivoted to the leg 1 by a bolt extending through the sides thereof, a middle portion $5^a$, which extends at right angles to the base portion, and an end portion $5^b$ which extends reversely parallel to the base portion and has a cylindrically shaped head, or slides $5^c$ at its end which is slidably mounted in the middle portion of the rear leg 2, as shown in detail in Figs. 4 and 5. The end portions of the rear legs 2 are semi-cylindrical, except that the upper end portions thereof, through which the pivot pin 7 passes into the seat 8 to connect the leg thereto, is somewhat flattened, and the edge portions of the sides of the legs 2 are inturned between said semi-cylindrical portions, to form longitudinally slotted cylindrical portions $2^a$ adapted to receive the cylindrically shaped head $5^c$, which, when the parts are assembled, may be inserted therein from the bottom end of the leg and may slide freely therein to the extent necessary, the portion $5^b$ of the bracket extending through the slot formed between the edges of the strips of which the legs are formed. A cross pin 12 is arranged in each leg 2 in position to be engaged by the head $5^c$ when the chair is unfolded to limit the unfolding movement of the legs. The seat 8 is pivotally connected at its rear end to the upper ends of the legs 1 by means of brackets 14, which are rigidly connected thereto, and by pivots 15 which pass through the legs and the end portions of said brackets. The seat is preferably formed of thin sheet metal and has a depending flange extending about its front and side edges to which the bracket 14 is connected by rivets and in which the pivot 7 is mounted.

The back of the chair consists of a frame 16, formed of a strip of semi-tubular metal bent in U-form with its open side inward, and a back plate 17, which is set into the open side of said strip and connected thereto by bending the back edge portions of the frame 16 inwardly against it, as shown in Fig. 8. The end portions of the frame 16 are parallel and adapted to be telescopically fitted within the upper end portions of the legs 1 and said pivot bolts 15, which con-

nect the brackets 14 and legs 1, are also passed through the open sides of the frame 16 and through an elongated opening 18 in the middle of the opposite sides there, so that the back frame is pivotally connected to the legs 1, but is permitted to have a short longitudinal movement therein. A stop pin 20 is mounted in each leg 1 at a sufficient distance from the pivots 15 therein, to permit engagement of the end portions of the frame 16 therewith, in two positions of the frame. In one of these positions said end portions may be held in telescoped relation with the legs 1 with their ends engaged the pins 20, as shown in the dotted line position in Fig. 2, in which position the front sides of the frame will engage the inner side of the legs 1, and, acting in conjunction with pivots 15, will hold the frame from swinging backward. Also, if it is desired to have the back held in a position in which it is inclined forwardly from the position of alignment, the frame is pulled upward slightly, so that its ends are disengaged from pins 20 and then it is swung forward sufficiently to clear them, and pushed downward until the upper ends of the slots or openings 18 engage the pins 15, and then it is swung rearward until its end portions engage the sides of pins 20, as shown in the full line position of Fig. 2, or the position of Fig. 1. The chair back may thus be held, when in use, at either inclination shown.

In Figs. 9 and 10 a form of foot piece, for the bottom ends of the legs, is illustrated which comprises a flat base portion 22 of moulded rubber, and an inclined stem 23 which is extended into the semi-cylindrical end portion of the legs and secured therein by rivets 24. As thus held, the edges of the legs bear on the upper side of the foot, so that the legs cannot directly engage the floor.

The chair is folded in the same manner as similar chairs of this type, the seat being folded up against the back, causing the heads $5^c$ to slide within the leg portions $2^a$ and the legs to be folded, so that they lie in approximately the same plane, as shown in Figs. 6 and 7, in which position the thickness of the space occupied is greatest where the seat is folded against the back, so that when the chairs are folded and stacked in alternate relation, a large number may be held in a comparatively small space.

I claim—

1. A folding chair comprising two pairs of pivotally connected crossed legs formed of semi-tubular metal, and arranged with their open sides facing downwardly, and a seat pivotally connected at its rear end to the rearwardly extending legs and at its front end to the forwardly extending legs, the pivotal connection between each pair of legs comprising a bracket having its base portion pivotally connected to the rearwardly extending leg and having a head slidably mounted in the middle portion of the forwardly extending leg, the edge portions of the latter being inturned to retain the head therein.

2. A folding chair comprising two pairs of pivotally connected crossed legs formed of semi-tubular metal, and arranged with their open sides facing downwardly, and a seat pivotally connected at its rear end to the rearwardly extending legs and at its front end to the forwardly extending legs, the pivotal connection between each pair of legs comprising an angle plate having a base portion disposed between said legs and pivotally connected to the rearwardly extending leg and having its end portion extending reversely into the forwardly extending leg, said end portion having a head on its end arranged for slidable engagement with the latter throughout its middle portion, the edge portions of said middle portion being inturned to retain the head therein.

3. In a folding chair, a leg of partly tubular form having the edge portions of its sides extended towards each other to form a straight longitudinal slot opening to the interior thereof and a bracket having a pivotal connection at one end with another portion of the chair, the opposite portion of the bracket extending through said slot and having a head at its inner end slidably fitted within the leg to permit the bracket to slide therein and to connect the same thereto.

4. A folding chair comprising two pairs of crossed legs formed of transversely U-shaped metal, a seat having pivots extending through the side portions of said legs pivotally connecting the front and rear ends, respectively, of the seat to the corresponding upper ends of the legs, and a pivotal connection between the crossed portions of each pair of legs comprising a U-shaped angle plate having one side portion disposed between the legs and a pivot extending through the side portions of one of said legs to pivotally connect said portion thereto, the other side portion thereof extending between the sides of the other leg and having a head at its end slidably fitted within the leg, the edge portions of the sides of the leg within which the head slides being inturned to retain the head therein.

5. In a folding chair having pivotally connected crossed legs of semi-tubular metal and a seat supported thereby, a back frame of semi-tubular metal having parallel end portions telescoped within the upper end portions of the adjacent legs, pivots extending through said upper end portions and said frame end portions at a substantial dis-

tance from the extreme ends of the latter arranged to permit the frame to swing from its telescoped position to a forwardly inclined position, means permitting limited longitudinal movement of said frame with relation to said adjacent legs, and an abutment on the latter arranged to be engaged by said frame end portions between its pivots and its ends when swung rearwardly, to hold it against further rearward swinging movement.

In testimony whereof, I have signed my name to this specification.

JULIUS L. CABLE.