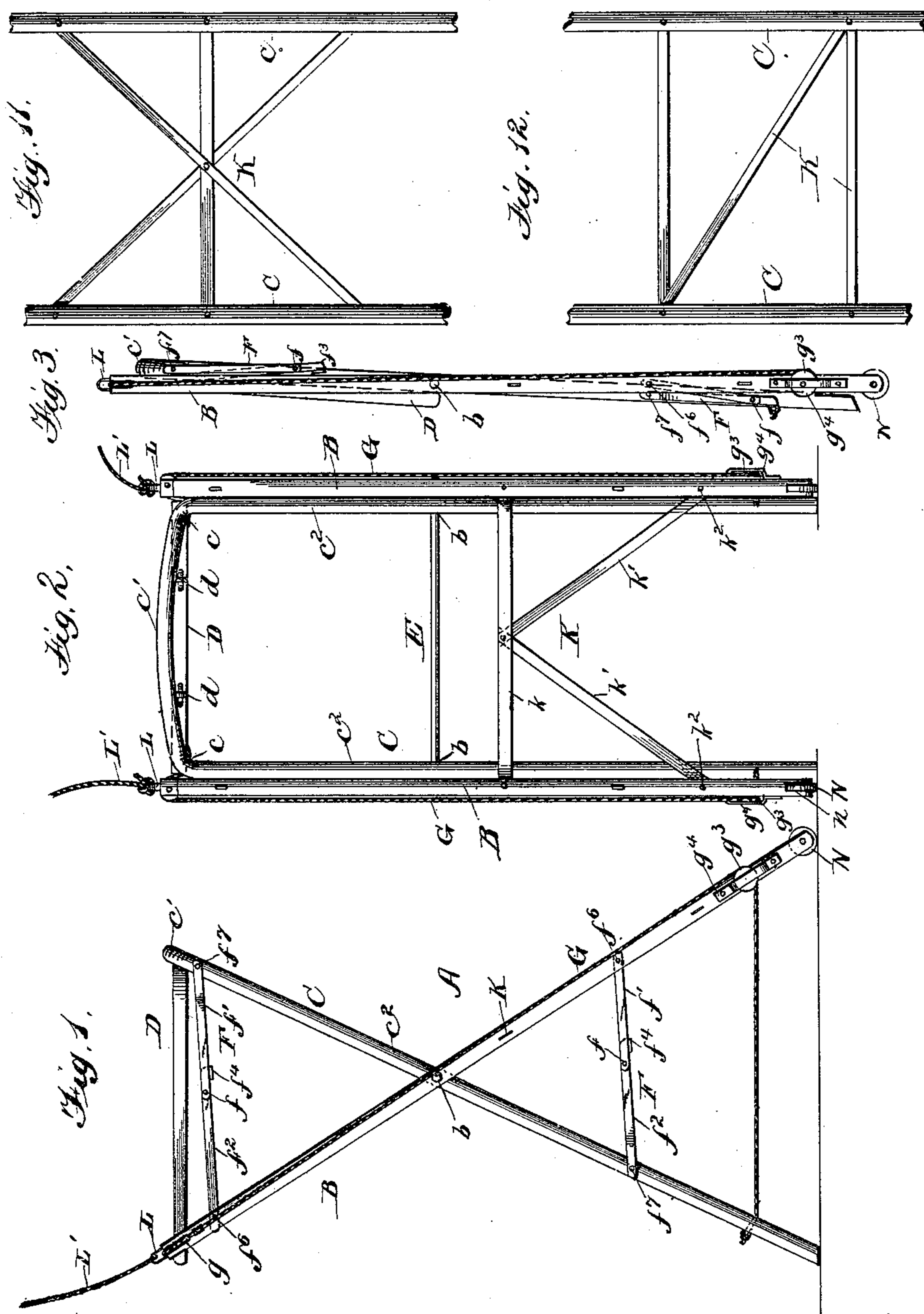


2 Sheets—Sheet 1.

No. 332,749.

Patented Dec. 22, 1885.



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W. N. H. Knight,
H. F. Bernhard

Inventors:
Effie La Nora Hall ^{and}
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Edson Bros.

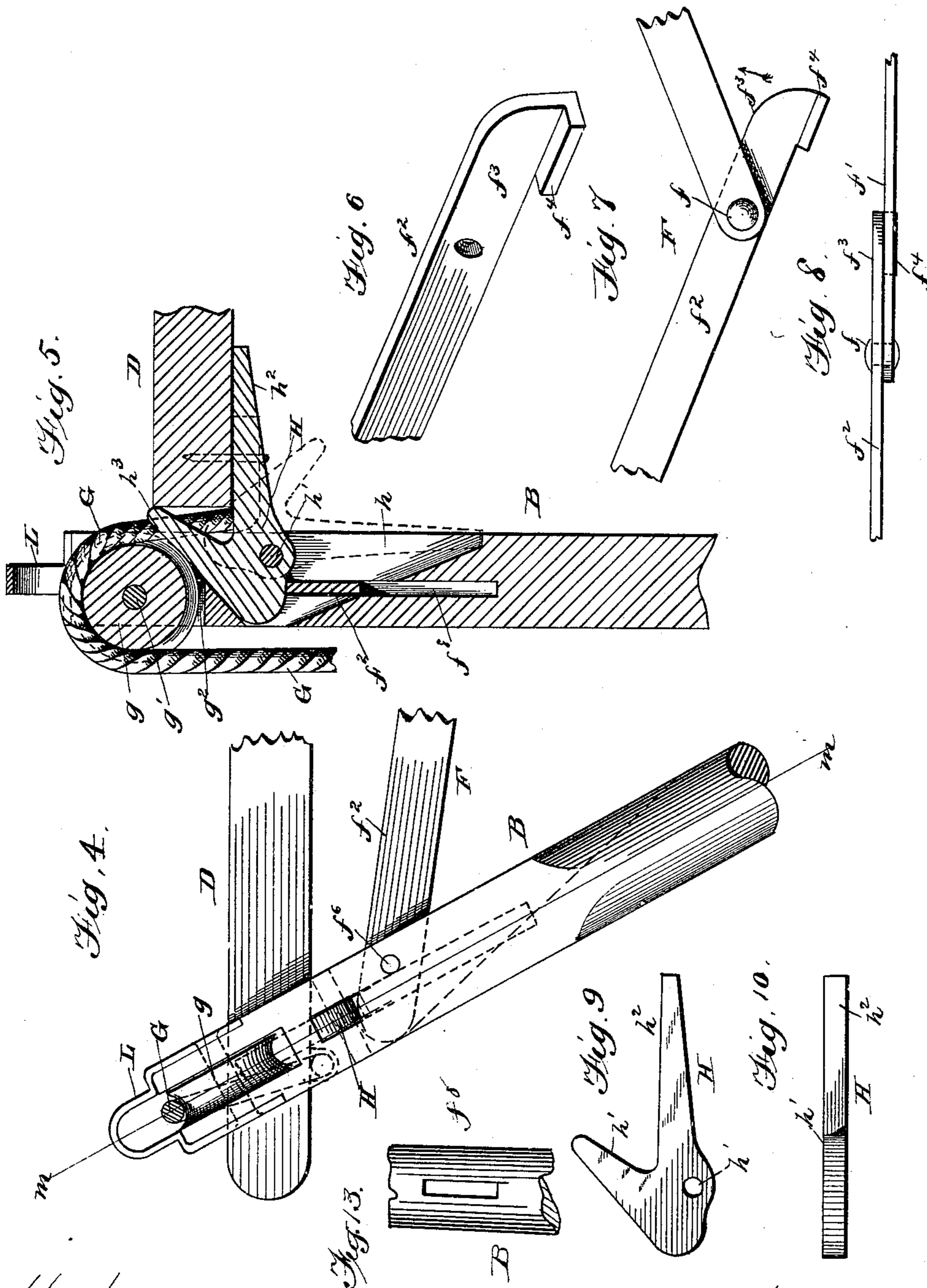
(No Model.)

2 Sheets—Sheet 2.

E. L. PRALL & A. WILLIAMS.
FOLDING CHAIR.

No. 332,749.

Patented Dec. 22, 1885.



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UNITED STATES PATENT OFFICE.

EFFIE L. PRALL AND ARVILLA WILLIAMS, OF WELLINGTON, KANSAS.

FOLDING CHAIR.

SPECIFICATION forming part of Letters Patent No. 332,749, dated December 22, 1885.

Application filed May 7, 1885. Serial No. 164,647. (No model.)

To all whom it may concern:

Be it known that we, EFFIE LA DORA PRALL and ARVILLA WILLIAMS, citizens of the United States, residing at Wellington, in the county of Sumner and State of Kansas, have invented certain new and useful Improvements in Combined Folding and Self-Adjusting Chairs, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to chairs, and has for its object the provision of a folding chair to be secured by straps or cords to the belt or waistband of the user, and to be readily, conveniently, and automatically opened and closed by the user when she (the chair being especially adapted for ladies) desires to transfer her weight, or a portion of it, from her feet to the chair or from the chair to her feet, by rising to her full stature.

The invention is especially designed for use by saleswomen in stores, &c., the nature and demands of whose occupation require them to remain in an upright position, with their weight constantly on their feet.

The object of the present invention is to provide a seat which shall not only be simple in construction and durable in use and light, but also compact in construction, portable, and easily operated.

Our invention is intended to be attached by straps or cords to a waistband or belt under the outer skirt or dress, in which position it will be hidden from view at all times, and easily and readily opened and closed by the user thereof as desired.

To the accomplishment of the above our invention consists in the construction, arrangement, and combination of parts substantially as hereinafter described, and more particularly pointed out in the claims.

In the drawings, Figure 1 represents a side elevation of our improved chair open for use. Fig. 2 is a rear view thereof. Fig. 3 is a side elevation showing the chair closed. Fig. 4 is an enlarged detail view of a portion of one of the supporting-legs. Fig. 5 is a sectional view on the line *m m* of Fig. 4. Fig. 6 is a detail view in perspective of a part of one of the chair supporting and limiting braces. Fig. 7 is a detail elevation of the supporting-braces, showing the manner of hinging said braces together. Fig. 8 is a top plan view of the

parts shown in Fig. 7. Figs. 9 and 10 represent detail views of the seat-supporting lever. Figs. 11 and 12 represent modifications in the form of the bracing of the chair. Fig. 13 is a detail view of the chair-leg, showing slot or groove.

Similar letters of reference denote similar parts in all the figures of the drawings.

Referring to the drawings, A designates a folding chair consisting of legs B C, hinged together and to a seat, D, as hereinafter described. We preferably form the legs C of a single piece of material, bent or turned at points *c c*, whereby the seat-supporting portion *c'* and parallel legs *c² c²* are formed. If desired, the legs *c² c²* may be in separate pieces, and joined together at their tops by a curved bar, of metal or wood, corresponding to the portion *c'*. The legs B are pivoted or hinged at *b* to the legs C, either by short pivotal bolts equal in length to the combined diameter of the legs B C or by a bolt or rod, E, that extends across from side to side of the chair, as shown. We preferably employ the latter-described form, whereby greater strength and stability is imparted to the chair, and the legs are prevented from spreading. The legs B C, at each side of the chair, are connected together above and below the pivotal points *b* by braces F, hinged together at *f*, and to the legs B and C at the points *f⁶ f⁷*, respectively. Each of the braces F consists of two parts, *f' f²*, hinged together at *f*, one of said parts, *f²*, being prolonged beyond the pivotal point *f*, as shown at *f³*, and provided upon the lower side thereof with a projection, *f⁴*, that takes under the lower edge of the part *f'* when the brace is open.

If desired, each of the parts *f' f²* of the brace F may have the prolongation *f³* and stop *f⁴*, the ends of the parts *f' f²* being hinged to the legs B C in the following manner, viz: The outer ends of the parts *f'* are hinged by headed bolts or pins *f⁷* to the outer surface of the legs C, near the top thereof, the outer ends of the parts *f²* being pivoted by the pins *f⁶* to the legs B within grooves formed in said legs. We preferably employ this described construction, since in doing so the chair is permitted to more readily fold together. If desired, however, the grooves may be dispensed with and the forward end

of the part f^2 hinged to the inner surface of the leg. The seat D is, at its rear edge, hinged at d to the portion c' of the legs C, and is curved to fit said portion c' . The length of the seat is nearly equal to the distance between the legs B B, and when it is turned down its side edges bear against the forward edge of the legs C, as shown in Fig. 3. The seat D is raised into a horizontal position by means of cords G G, operating at each side of the chair. Said cord is shown attached to one side of the chair only; but it should be understood that a second cord is attached to the reverse side in a similar manner.

G designates a cord, attached at one end to the lower forward edge of the seat D, (see Figs. 4 and 5,) and thence extending over a pulley, g , mounted upon a pin, g' , in a slot, g^2 , formed in the head of the leg B, thence to and about a pulley, g^3 , mounted in a frame, g^4 , secured to said leg B, near the bottom thereof, and thence to the leg C, to which it is secured near the bottom thereof. If desired, the pulley g^3 may be placed in a slot formed in the leg B, in lieu of the frame g^4 . Each of the legs B is provided upon its inner surface, near the top thereof, with a groove or recess, h , in which is mounted, by a pivotal pin, h' , a short bell-crank lever H, the arms h^2 h^3 of which form an acute angle, as shown.

Fig. 5 shows by full lines said lever H, as it appears when in position to support the raised seat D, and by dotted lines its position when the seat is folded upon its supporting-legs. In the latter position it will be seen that the long arm h^2 normally rests within the groove or recess h , while the short arm h^3 projects into the track of the seat D when it is being raised, and will, consequently, be struck by said seat and turned up and into the position shown by full lines, in which it will be observed the extreme end of said short arm h^3 bears against the edge of the seat, while the seat itself rests upon the long arm h^2 . By this construction the seat is supported, and at the same time the lever H is prevented from turning upon its fulcrum h' while the seat is open.

By reference to Figs. 4 and 5 it will be observed that the outer end of the part f^2 of the top brace, F, bears against the under edge of the lever H outside of its fulcrum h' . By this construction, when the chair is being closed, said brace f^2 operates to assist in turning the lever H into the position shown by dotted lines.

It will be understood that each of the legs B is provided at its top with a lever, H.

K designates a brace consisting of a bar, k , extending from one to the other of the legs B, below the pivot b ; k' k' , similar bars extending from points k^2 near the bottom of each of said legs to a common point, k^3 , on the bar K, to which they are secured.

The bars k k' , secured together as shown, form a brace for strengthening the chair and preventing lateral play thereof.

In Figs. 11 and 12 we have shown different forms of bracing, either of which may be used in lieu of the construction shown in the brace K.

The described chair is secured to the belt or waist of the user in the following manner, viz: L designates a loop secured to the tops of the legs B, to which is fastened a cord or strap, L' , which is secured to the belt of the wearer. N designates rollers mounted in suitable slots, n , formed in the lower ends of the legs B. In lieu of the rollers casters similar to those used in furniture may be employed, if preferred.

The operation of our improvement is as follows: The chair in a closed position, as shown in Fig. 3, is secured to the waist by straps or cords L' , the wearer being in an upright position. When she desires to transfer her weight to the chair, the knees are sprung slightly for that purpose, whereby the lower end of the legs B (being somewhat longer than the legs C) first strike the floor, and by reason of the rollers N glide backward, thus causing the lower ends of the legs C to strike the floor, and, as said legs are without rollers, to remain in a fixed position thereon. The legs B continue moving backward until the cord G has drawn the seat D into a horizontal position, the seat in its upward passage striking against and causing the supporting levers H to assume the position shown in Fig. 5, and hereinbefore described. At the same time the braces F (which may be made adjustable to accommodate seats of different widths) open and serve to determine the distance to which the legs are spread apart.

In closing the chair the operation above described is reversed, and is accomplished by the mere act of rising from the chair—i. e., throwing the weight upon the feet by rising to the full stature.

Modifications in detail of construction of the above-described chair, representing one form of embodiment of our invention, may be made without departing from the spirit or sacrificing the advantages thereof. We therefore wish to have it understood that we reserve the right to make such changes and alterations as fairly fall within the scope of our invention.

By making the brace F adjustable and the seat D removable and interchangeable with seats of different widths, the relative width of the chair with reference to its height may be increased and diminished.

In practice the legs and their adjuncts are so proportioned as to adapt one to lie within the other, in lieu of the position thereof shown in Fig. 3, which is somewhat objectionable, as it interferes with the freedom of the wearer when walking.

We attach importance to the legs C being shorter than the legs B, as by this construction when the said legs B strike the floor they move backward upon the supporting-rollers and cause the legs C to strike the floor squarely, at which time the chair is fully opened.

What we claim, and desire to secure by Letters Patent of the United States, is—

1. In a combined folding and adjustable chair, a seat-supporting lever, a bell-crank, 5 substantially as described, in combination with supporting-legs and seat of a chair, as and for the purpose specified.
2. In a combined folding and adjustable chair, a hinged folding brace, substantially as 10 described, in combination with a seat-supporting lever H and the legs and seat of the chair, as and for the purpose set forth.
3. In a combined folding and adjustable chair, a cord arranged and operating substan- 15 tially as described, in combination with the legs, seat, braces, and seat-supporting lever of the chair, as and for the purpose specified.
4. In a folding and adjustable chair, legs B, provided with rollers N, pulleys $g g^3$, and le- 20 vers H, with the legs C, folding braces F, and seat D, substantially as described.

5. In a folding and adjustable chair, the combination of legs B, provided with lateral brace K, lever H, rollers N, pulleys $g g^3$, and loop L, with legs C, seat D, operating-cords G, hinged 25 folding braces F, and straps or cords L, substantially as described.

6. In a combined folding and adjustable chair, the combination of legs B and C, pivoted together, the leg B being of greater length 30 than its fellows and having rollers N and pulleys $g g^3$, with lever H, seat D, operating-cords G, and braces, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EFFIE L. PRALL.
ARVILLA WILLIAMS.

Witnesses:

ELIZABETH HENDRICKS,
W. A. BLACK.