F. WELDON.

CRUTCH.

APPLICATION FILED JUNE 1, 1917.

1,277,009.

Patented Aug. 27, 1918.

2 SHEETS—SHEET 1.

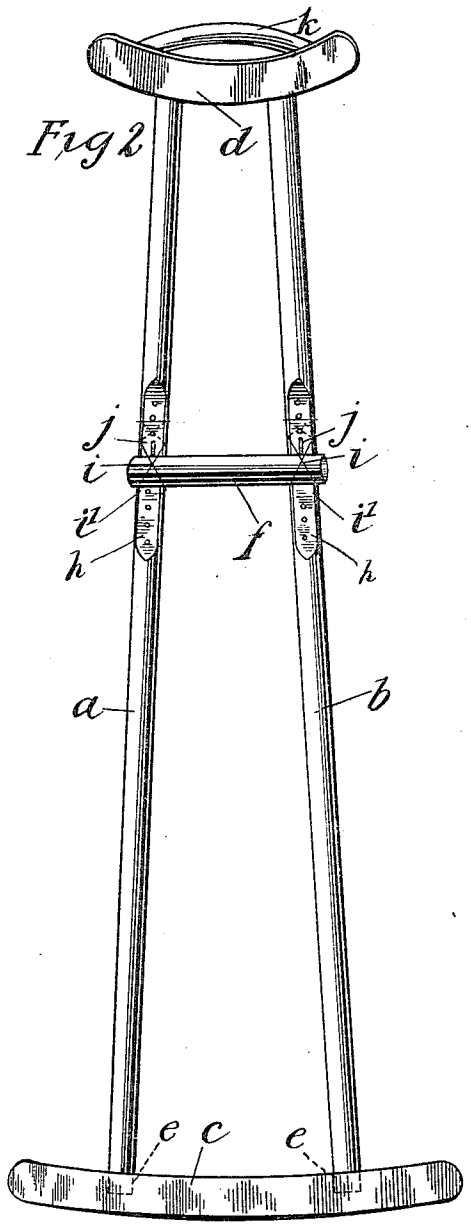

Fig 2

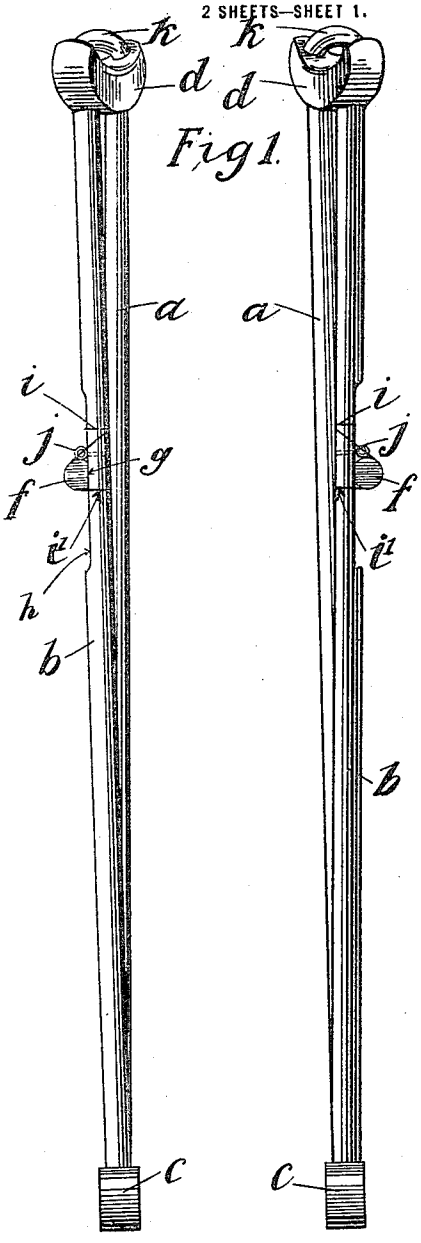

Fig 1.

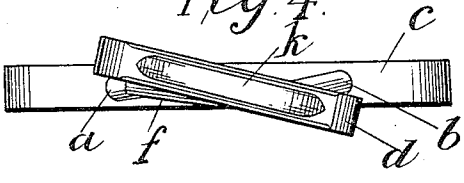

Fig 4.

Inventor

Francis Weldon

By Dowell & Dowell

his Atty's.

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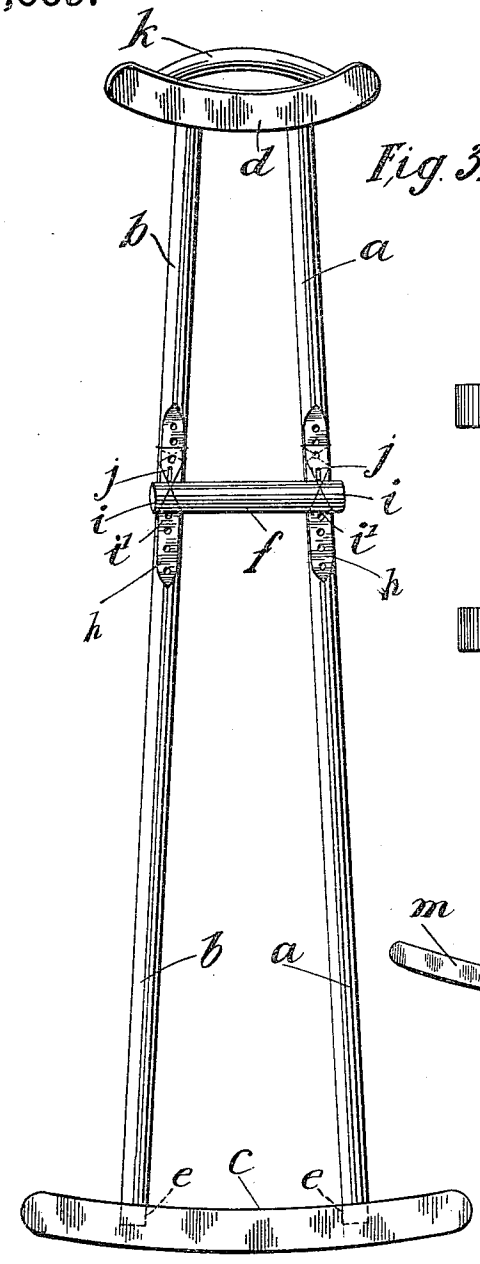


Fig. 3.

Fig. 6.

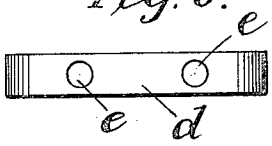


Fig. 7.

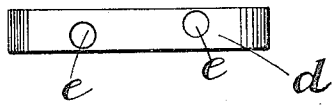


Fig. 8.

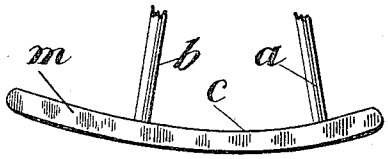
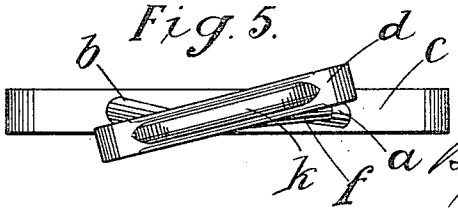


Fig. 5.



Inventor

Francis Weldon

By Dowell & Dowell

His Atty's.

UNITED STATES PATENT OFFICE.

FRANCIS WELDON, OF READING, ENGLAND.

CRUTCH.

1,277,009. Specification of Letters Patent. **Patented Aug. 27, 1918.**

Application filed June 1, 1917. Serial No. 172,290.

To all whom it may concern:

Be it known that I, FRANCIS WELDON, a subject of the King of Great Britain and Ireland, residing at Reading, in the county of Berks, England, have invented Improvements in or Relating to Crutches, of which the following is a specification.

This invention has reference to improvements in crutches wherein the legs are provided with a curved segmental base piece and has for its principal object a relative arrangement of the said base piece and the head of the crutch yielding beneficial results to the user. According thereto the curved segmental base piece of a crutch is adapted to be readily maintained in a longitudinal direction parallel to the direction of walking, so as to enable the crutch to be safely used with comfort, and in an advantageous manner, by fixing the head of the crutch that fits under the arm pit of the user, to the crutch supports carrying the base piece, in such a way that, as seen in plan, it is slightly inclined from the rear and in the direction of walking inwardly and forwardly in relation to the segmental base piece in which position the head piece can be comfortably and naturally seated under the arm pit of the user, the segmental base piece extending in a fore and aft direction parallel to the direction of walking. In the case of a pair of crutches, the crutches will consequently be left and right handed, the head pieces inclining forwardly and inwardly toward each other to a small extent when the crutches are in use while the two segmental base pieces will be parallel to each other.

In the accompanying illustrative drawings, Figure 1 shows in rear elevation, a pair of crutches constructed according to the invention. Fig. 2 is an outside view of the left hand crutch shown in Fig. 1 and Fig. 3 is a similar view of the right hand crutch of Fig. 1. Figs. 4 and 5 are plan views of the crutches shown respectively in Figs. 2 and 3. Fig. 6 is an underside view of the head piece of one of the crutches shown in Figs. 1 to 5 inclusive. Fig. 7 is a similar view to Fig. 6 showing a modified construction of head piece. Fig. 8 shows in side elevation, a modified construction of base piece.

In the example shown in Figs. 1 to 6, each crutch comprises a pair of wooden rods *a* and *b* that are inclined upwardly toward each other and fixed at their lower ends to a curved segmental base piece *c* at their upper ends to a head piece *d*, the arrangement being such that each head piece *d* is inclined forwardly and slightly inwardly toward that of the other crutch of the pair while the curved segmental base pieces extend in a direct fore and aft direction and are parallel to one another.

In constructing such crutches the lower ends of the two rods *a* and *b* of each of them may be first fixed in sockets *e* in the base piece *c* so that they are in the same plane as the latter and in order to set the head piece *d* at the desired angle to the base piece, the upper ends of the rods may conveniently be placed in a pair of sockets *e* so formed in the underside of the head piece, namely with their axes in a plane parallel to the length of the head piece as shown in Fig. 6, that the head piece will then be in the same plane as the rods and base piece, after which the head piece is twisted or turned sidewise to the desired angular extent on the upper ends of the rods, which are then suitably fixed in the sockets, as by screws or nails. Or, if desired, the sockets *e* in the head piece may, as shown in Fig. 7, be arranged with their axes in a plane at the desired angle to the length of the head piece *d* and the upper ends of the rods be suitably fixed in them so as to avoid any need for afterward twisting the head piece. The first described construction is however at present preferred.

Each crutch is provided with a handle *f* that may conveniently consist of a round bar fixed horizontally across the pair of rods, as by a frictional grip. Such handle may be arranged outside both of the rods, as shown, or outside one and inside the other. The parts of such handles that bear against the rods may be formed with flat surfaces as shown at *g*, as also may the rods *a* and *b* as shown at *h*. In order to admit of the handle *f* being comfortably grasped to the best advantage by the user, it may be adjustably fixed to the pair of rods *a* and *b* in known or suitable manner so that it can be varied in height. Advantageously each end of the handle bar may be supported in a wire clip or holder formed of a length of wire *i* bent to form a loop at i^1 that is passed around the inside of the adjacent rod and the two side portions of which are led outward under and over the handle bar *f* and crossed, then led, as shown, in opposite directions around the inside of the rod and then brought to the outer side thereof and their free ends

united together in any suitable or convenient manner, as by twisting or by hooking them together, thus forming an adjustable frictional grip, the power of which increases with the weight imposed on the handle bar. Clips or holders thus constructed will support considerable weight brought to bear on the handle bar and can, by pushing up the bottom loop portions *i*, which operation loosens the whole of the clips, be readily moved up and down the rods to suit the desired position of the handle bar, the clips becoming firmly held in the new position. Upward movement of the handle bar can be prevented, after adjustment, by any convenient means, as by eye pins *j* screwed into the rods directly above and bearing against the handle bar. The head pieces may be constructed in any convenient form and embody pneumatic or other cushioning means to admit of their being comfortably used. In the example shown, each head piece *d* consists of a wooden block of curved shape fitted with a cushion in the form of a rubber tube *k* the ends of which are fitted in recesses in the upper side of the head piece.

In some cases each segmental base piece may, as shown in Fig. 8, be provided with a tangentially arranged rearward extension *m*, the free rear end of which will come gently into contact with the ground and avoid shock therewith each time the crutch is moved forward to take a fresh step.

If desired, the underside of each base piece may be grooved to form edges that will readily cut or pass through mud, snow or other soft material on the ground with the object of preventing the base piece slipping sidewise on muddy or slippery surfaces. Also, the underside of each base piece may, if desired, be furnished with an india rubber or other cushion, tire or equivalent to reduce shock upon contact with the ground.

What I claim is:—

1. A crutch having a curved segmental base piece and a head piece, that, as looked at from above, is inclined from the rear and in the direction of walking inwardly and forwardly in relation to the base piece, substantially as described.

2. A crutch as claimed in claim 1 having the base and head pieces connected to the lower and upper ends respectively of a pair of wooden rods inclined upwardly throughout their length toward each other, substantially as described.

Signed at London, England, this eighth day of May, 1917.

FRANCIS WELDON.