

(No Model.)

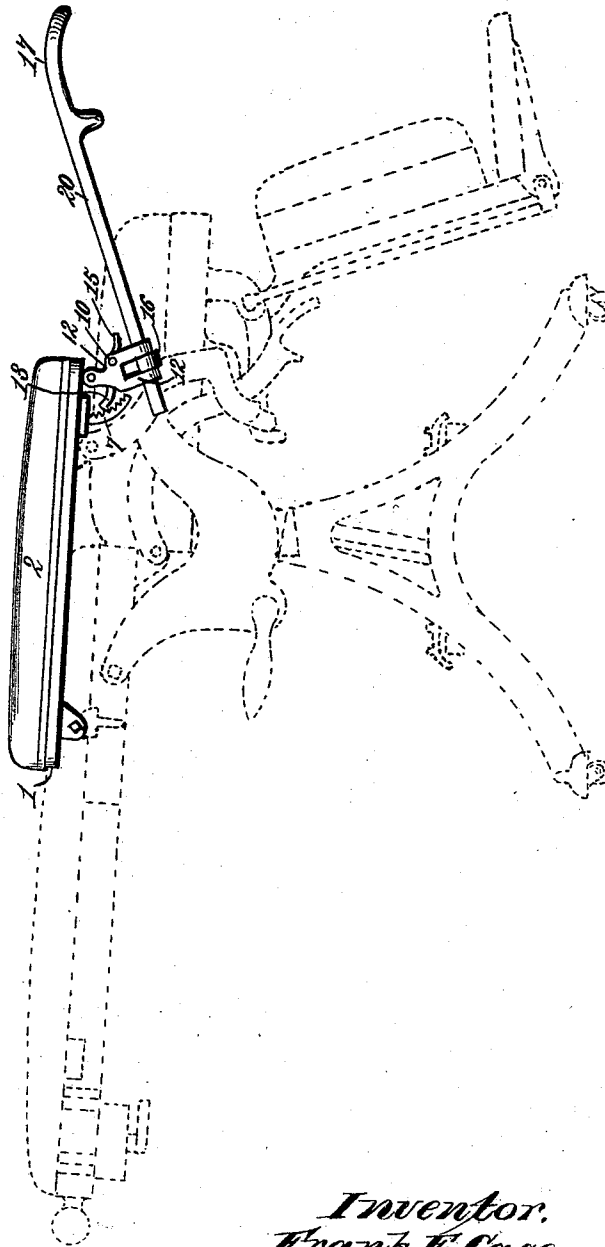
2 Sheets—Sheet 1.

F. E. CASE.
STIRRUP ATTACHMENT FOR CHAIRS.

No. 490,540.

Patented Jan. 24, 1893.

Fig. 1.



Witnesses:
Robert E. Smith,
J. A. Rutherford.

Inventor,
Frank E. Case,
By *James E. Norris,*
Att'y.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

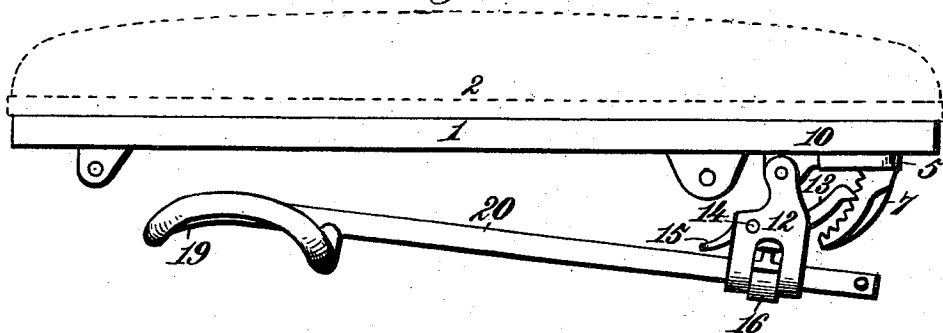


Fig. 3.

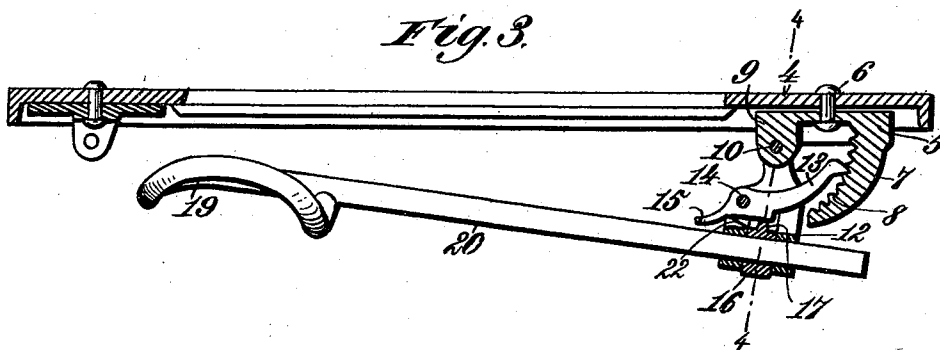


Fig. 4.

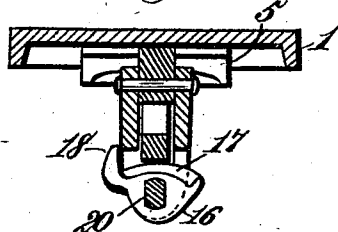


Fig. 5.



Fig. 6.

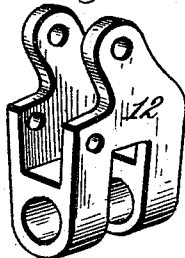
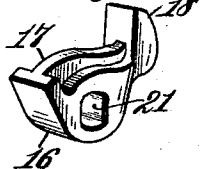


Fig. 7.



Witnesses:
Robert G. Smith,

J. A. Rutherford.

Inventor:

Frank E. Case.

By

Wm. L. Norris.

Atty.

UNITED STATES PATENT OFFICE.

FRANK E. CASE, OF CANTON, OHIO.

STIRRUP ATTACHMENT FOR CHAIRS.

SPECIFICATION forming part of Letters Patent No. 490,540, dated January 24, 1893.

Application filed June 28, 1892. Serial No. 438,324. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. CASE, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have
5 invented new and useful Improvements in Stirrup Attachments for Chairs, of which the following is a specification.

This invention relates to stirrup-attachments for surgical-chairs for supporting the
10 foot of a patient while being operated on or treated by a surgeon, and the invention has for its objects to provide new and improved means for adjusting the stirrup to different elevations; to provide a novel pawl and
15 ratchet mechanism for adjusting the stirrup, whereby the pawl can be disengaged from the ratchet by the pressure of the thumb directly on the pawl, or by an axial turning movement of the stirrup-carrying-shank, and
20 to provide novel devices for automatically locking the stirrup-carrying-shank when raised to the desired height.

The invention consists in the combination with a chair-arm having a vertically arranged
25 ratchet-bar, of a yoke or frame pivoted to the chair-arm and having a stirrup-carrying-shank, and a pawl carried by the yoke or frame for engaging the ratchet-bar so that the pawl will ride over the teeth of the ratchet-
30 bar in raising the stirrup and automatically engage the ratchet-bar and lock the stirrup when the latter is raised to the desired height.

The invention also consists in the combination with a chair-arm, of a plate or disk
35 journaled thereupon and having a pendent ratchet-bar, a swinging yoke or frame pivoted to the plate or disk and having a stirrup-carrying-shank, and a pawl pivoted to the yoke or frame for engaging the ratchet-bar to ad-
40 just the stirrup to different elevations.

The invention also consists in the combination with a chair-arm having a vertically
45 arranged ratchet-bar, of a yoke or frame pivoted to the chair-arm, a pawl pivoted to the yoke or frame for engaging the ratchet-bar, and a stirrup carrying-shank movable length-
wise in the pivoted yoke or frame.

The invention also consists in the combination with a chair-arm, of an axially turn-
50 ing stirrup-carrying-shank, a pawl and ratchet mechanism for adjusting the stirrup to different elevations, and a pawl-operating

cam piece or casting actuated by the turning of the stirrup-carrying-shank to release the pawl from the ratchet.

The invention also consists in certain other
55 features of construction and combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1, is a side elevation of a chair-arm provided with my invention, the stirrup being extended for use and a portion of a chair
60 exhibited in dotted lines. Fig. 2, is a detail side elevation of the chair-arm showing the stirrup turned beneath the same. Fig. 3, is a longitudinal central sectional view of the chair-arm and stirrup attachment. Fig. 4, is a sectional view taken on the line 4—4 Fig. 3.
65 Fig. 5, is a detail perspective view of the pawl. Fig. 6, is a similar view of the swinging yoke or frame, which carries the pawl; and Fig. 7, is a similar view of the cam piece or casting for operating the pawl by the axial
70 turning movement of the stirrup-carrying-shank.

The chair-arm here illustrated is composed of a lower section or base-plate 1, and an upholstered upper section or top plate 2, adjustable to different positions substantially as
80 described and shown in my application for Letters Patent Serial No. 226,217, filed February 2, 1887. The chair-arm may, however, be constructed in any other manner suitable for the conditions required, and the chair
85 proper may be the same as disclosed in my above mentioned application, or as exhibited in my reissued Letters Patent No. 10,906 dated March 6, 1888, or in my Letters Patent No. 455,168, dated June 30, 1891.

The lower section or base-plate 1 is provided at the lower side of its forward end with a rotary plate or disk 5 journaled thereto by a pivot pin 6, and formed integral or otherwise constructed with a pendent ratchet-bar
90 7, the toothed surface 8 of which is segmental or extends in the arc of a circle. The rotary plate or disk is also provided with a lug 9, from which is suspended by a pivot-pin 10, a swinging yoke or frame 12, comprising a
95 pair of parallel arms embracing the lug 9 and between which is arranged a pawl 13, adapted to engage the teeth of the ratchet-bar. The pawl is mounted on a transverse pivot-pin 14
100

and is provided with a thumb piece 15, for the purpose of moving it out of engagement with the ratchet-bar by pressure of the thumb. The pawl is preferably so pivoted that the end which engages the ratchet-bar overbalances the thumb-piece so that the pawl will normally stand in engagement with such ratchet-bar, but obviously the pawl can be otherwise constructed and arranged to accomplish this result.

The lower extremity of the swinging yoke or frame is provided with a recess in which is located pawl operating device, composed, as here shown, of a cam piece or casting 16, Fig. 7, having a cam-surface or projection 17 and a toe or heel-piece 18. The stirrup 19 is provided with a shank 20, which is angular in cross-section and extends through a circular or other suitable orifice in the lower end of the yoke or frame and through an angular orifice 21 in the cam-piece or casting 16, in such manner that the stirrup-carrying-shank can be axially turned in the yoke or frame for the purpose of rocking or oscillating the cam piece or casting.

The pawl 13 may be provided with a lug 22, located thereupon below the pivot pin 14 and arranged to strike a portion of the cam piece or casting 16, whereby the rising movement of the acting end of the pawl is limited, but this feature of construction is not indispensable. By the means described and shown the pawl can be released from the ratchet-bar by pressure of the thumb on the thumb-piece 15, or by an axial turning movement of the stirrup-carrying-shank. 20.

In lifting or raising the stirrup, it is only necessary to grasp the same and lift it, and the pawl will ride over the teeth of the ratchet-bar until the stirrup has been adjusted to the desired height, when the pawl will automatically engage the ratchet-bar and lock the stirrup against a downward movement. The stirrup can only be lowered by releasing the pawl from engagement with the ratchet-bar and this can be effected by pressing on the thumb-piece 15, or by axially turning the stirrup-carrying-shank as before explained. The rotary plate or disk 5 enables the stirrup to be adjusted angularly with relation to the chair-arm, or to fold the stirrup beneath the chair-arm as represented in Fig. 2. The stirrup can be extended or retracted by sliding it lengthwise through the yoke or frame 12, and cam piece or casting 16, but owing to the inclined position which the stirrup carrying-shank occupies when in use it is not essential to employ extraneous fastening devices for locking it to the swinging yoke or frame, because the binding effect of the stirrup-shank is such as to retain it in proper operative position. The toe or heel-piece 18 of the cam piece or casting 16 operates as a stop to limit the turning of the stirrup-shank in the direction which releases the cam surface or eccentric portion 17 from the pawl 13, so that when

the foot of the patient is supported by the stirrup, the latter will be held in the proper position as the pressure is in a direction to force the toe or heel-piece 18 against the yoke or frame 12.

The invention provides an improved stirrup which can quickly and conveniently adjusted to different elevations to suit the conditions required for surgical operations and by the pawl and ratchet mechanism described it is possible to adjust the stirrup in an upward direction without manipulating any portion of the locking and releasing mechanism, which is a decided advantage over prior constructions.

I have described and shown the improved stirrup attachment applied to a side-arm which constitutes a part of a chair, but I wish it understood that the stirrup attachment can be applied to some other part of a chair which is suitable for the purpose.

Having thus described my invention what I claim is—

1. The combination with a part of a chair having a vertically arranged ratchet bar, of a yoke or frame pivoted to a part of the chair and adapted to swing in the arc of a circle independent of said ratchet bar, a shank carried by the yoke or frame and having a foot-supporting-stirrup at its outer end portion, and a pawl carried by the yoke or frame for engaging the ratchet bar so that the pawl will ride over the teeth of the ratchet bar in raising the foot-supporting-stirrup and automatically engage the ratchet-bar and lock the stirrup when the latter is raised to the desired height, substantially as described.

2. The combination with a part of a chair, of a rotatable plate or disk journaled thereupon and having a pendent ratchet bar, a yoke or frame pivoted to a part of the chair and adapted to swing independent of any movement of the ratchet bar, a shank carried by the yoke or frame and having a foot-supporting-stirrup at its outer end portion, and a pawl pivoted to the yoke or frame for engaging the ratchet-bar, substantially as described.

3. The combination with a part of a chair having a vertically arranged ratchet bar, of a yoke or frame pivoted to a part of the chair and adapted to swing independent of the ratchet bar, a pawl pivoted to the yoke or frame for engaging the ratchet bar, and a shank movable lengthwise in the yoke or frame and having a foot-supporting-stirrup at its outer end portion, substantially as described.

4. The combination with a part of a chair, of an axially turning stirrup-carrying-shank, a pawl and ratchet mechanism for adjusting the stirrup to different elevations, and a pawl-operating-device actuated by the turning of the stirrup-carrying-shank to release the pawl from the ratchet, substantially as described.

5. The combination with a part of a chair having a vertically arranged ratchet-bar, of

a pivoted yoke or frame, a pawl carried by the yoke or frame for engaging the ratchet-bar, an axially turning stirrup-carrying-shank mounted on the yoke or frame, and a pawl-operating cam piece actuated by the turning of the stirrup-carrying-shank to release the pawl from the ratchet-bar, substantially as described.

6. The combination with a part of a chair having a ratchet-bar, of a pivoted yoke or frame, a pawl carried by the yoke or frame, a pawl-operating-cam piece mounted in the yoke or frame, and a stirrup-carrying-shank movable lengthwise through the yoke or frame and the cam piece and engaging the latter to release the pawl from the ratchet-bar when

the stirrup-carrying-shank is axially turned, substantially as described.

7. The combination with a part of a chair, and a stirrup-carrying shank, of a ratchet, and a pawl having a thumb piece for adjusting the stirrup to different heights, and a suitable device actuated by the movement of the stirrup-carrying-shank for releasing the pawl from the ratchet, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

FRANK E. CASE. [L. S.]

Witnesses:

FANNIE LEVINGER,
S. D. MCKELVEY.