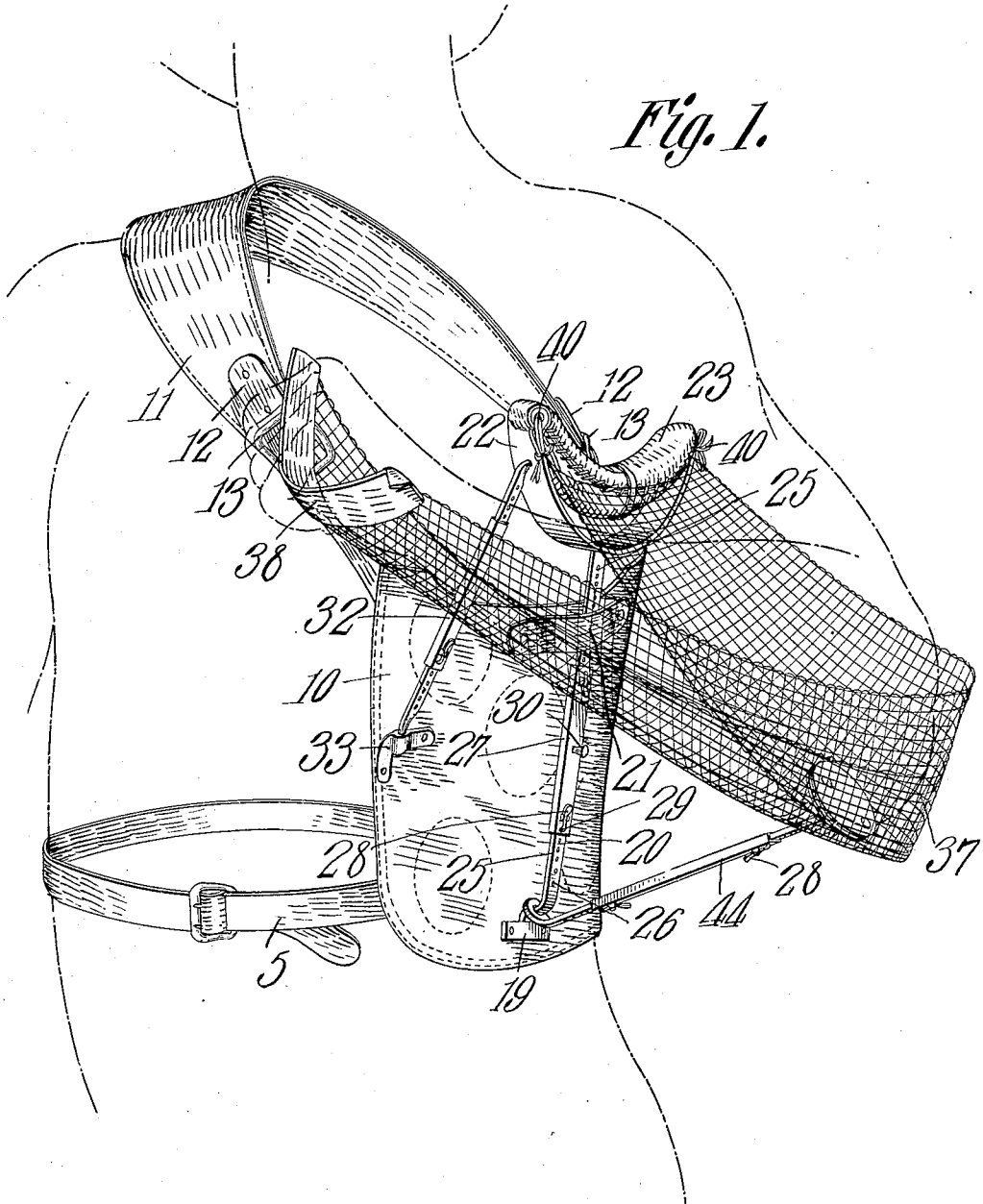


No. 890,842.

PATENTED JUNE 16, 1908.

R. H. CHEATHAM.  
CLAVICULAR APPARATUS.  
APPLICATION FILED SEPT. 30, 1907.

2 SHEETS—SHEET 1.



*Richard H. Cheatham*

INVENTOR

WITNESSES:

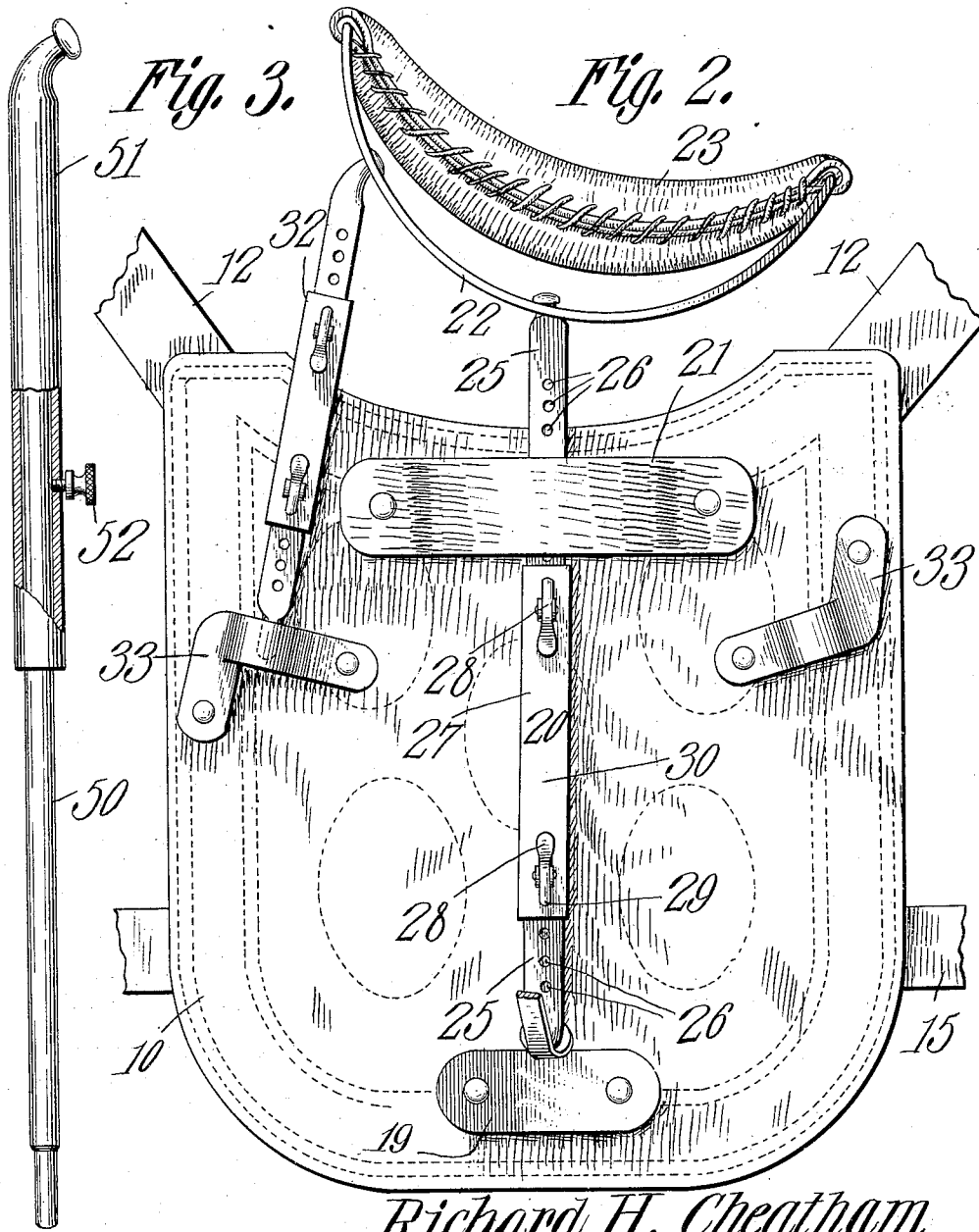
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WITNESSES:

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# UNITED STATES PATENT OFFICE.

RICHARD H. CHEATHAM, OF DENVER, COLORADO.

## CLAVICULAR APPARATUS.

No. 890,842.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed September 30, 1907. Serial No. 395,279.

*To all whom it may concern:*

Be it known that I, RICHARD H. CHEATHAM, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented a new and useful Clavicular Apparatus, of which the following is a specification.

This invention relates to supporting apparatus to be used during the treatment of a fractured clavicle, and has for its principal object to provide a means for suitably supporting the weight of the arm and shoulder and holding the parts in a position most favorable for uniting the fractured bone.

A further object of the invention is to provide a shoulder and clavicle support which may be readily adjusted for use on the right or the left side of the patient, and further to permit adjustment for the purpose of raising the shoulder to any desired extent for moving the arm outward and upward, and for throwing the shoulder back to avoid strain on the clavicle.

A still further object of the invention is to provide a novel form of shoulder and clavicle support which may be supported from the uninjured shoulder without discomfort and which may be readily adjusted to accommodate the physical characteristics of the patient.

A still further object of the invention is to provide a novel and effective form of shoulder crutch which may be readily adjusted below the arm pit, and further to employ an arm supporting splint of such nature as to hold and support the arm in a natural position without permitting any movement which would result in strain on the broken clavicle.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a perspective view of a shoulder and clavicle support constructed in accordance with the invention. Fig. 2 is a side elevation of the principal portions of the support. Fig. 3 is a detail view of a modified form of brace.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In carrying out the invention, a plate 10 is formed of metal or heavy leather suitably padded and shaped to conform to the side of the body. This base plate supports the shoulder and arm carrying members, and is itself supported from a strap 11 that is arranged to pass diagonally across the chest and back and to rest upon the uninjured shoulder and clavicle.

The central portion of this strap 11 is of such width as to bear on an extensive area of the shoulder and clavicle in order that the device may be worn without discomfort, and its opposite ends are connected to the base plate by adjustable straps 12 and buckles 13 which may be independently adjusted in order that the device may be properly positioned. Extending from the lower portion of the base plate 10 is a strap 15 that is arranged to extend around the abdomen.

Secured to the lower central portion of the base plate 10 is a bracket 19 in which is seated the lower end of an arm 20 that is formed of adjustable sections, as hereinafter described. The upper portion of this arm passes through a guide 21 that is secured to the upper central portion of the base plate 10, and at the top of the arm is swiveled the lower central portion of an arcuate strip 22 that preferably is formed of metal or other rigid material. Between the ends of this arm is hung a pad 23 arranged to pass under the arm pit, and to serve as a support for the shoulder, and this shoulder crutch may be raised or lowered by adjusting the sections of the arm 20.

The arm 20 is preferably composed of upper and lower bars 25 having perforations 26 arranged at equi-distant intervals. These arms are connected by a tube 27 within which the arms fit telescopically; and pivoted on the outer face of the tube are spring levers 28 carrying pins 29 that are arranged to enter the openings 26 for the purpose of locking the sections of the strip in adjusted position. Projecting from the strips and the tube 27 are finger pieces 30 for convenience in adjusting the relative positions of the parts, and so alter the height of the crutch prior to the locking operation.

It is desirable and necessary in most cases that the shoulder be thrown back in order

that no compression strain be exerted on the fractured clavicle and for this purpose one side of the strip 22 carries an adjustable arm 32 which may be of the same construction as the arm 20, and the lower end of this arm 32 is arranged to seat in either one of a pair of sockets 33 that are carried by the base plate 10, the socket at one side of the base plate being used when the right clavicle is fractured, and the socket at the opposite side when the left clavicle is fractured, while the swiveling of the plate 22 on the upper end of the supporting arm 20 permits the turning of the crutch in order that the arm 32 may be adjusted into proper relative position with either of the sockets 33.

Secured to the strip 22 is an arm splint 37 that preferably is formed of woven wire in order to permit free ventilation. The splint is bent at the elbow in order that the hand of the patient may be brought in near the chest, and near the extreme end of the splint is arranged a hand support 38. The hand end of the splint may be connected to the crutch member 22 by means of a suitable strap 40, and this strap may be adjusted for the purpose of holding the elbow flexed at any desired angle. It is further desirable to rest the arm and for this purpose an additional supporting arm 44 is employed, this arm 44 being made in sections similar to the arm 20, and being supported at one end on the bracket 19, while its opposite end is connected to the elbow end of the splint. By properly adjusting the sections of the arm 44, the splint may be raised or lowered so as to hold the upper arm at any desired angle to the horizontal.

With a device of this class, it is obvious that the arm may be held up at any angle, the shoulder supported, and the shoulder thrown back to such an extent as to avoid any strain on the clavicle, and the parts will be permanently held without material inconvenience to the patient until the parts of the fractured bone knit together.

It is obvious that the sectional adjusting arms which support the crutch and the arm splint may be of any desired construction, such, for instance, as sectional screw rods connected by a turn buckle, or the arms may be formed of telescopic tubes, such, for instance, as shown at 50 and 51 in Fig. 3, one tube sliding within the other, and the outer tube 51 carrying a set screw 52 which may be turned for the purpose of clamping the two tubes when the length of the arm has been adjusted to suit the surgeon.

I claim:—

1. In clavicular apparatus, a base plate, a shoulder supporting crutch, and an adjustable means for engaging the front portion of the crutch to throw the shoulder back.

2. In clavicular apparatus, a base plate, a pivotally mounted shoulder supporting crutch, an adjustable brace connecting the front portion of the crutch to the base plate.

3. In clavicular apparatus, a base plate, a tiltable crutch carried thereby, and means for tilting the crutch to throw the shoulder back.

4. In clavicular apparatus, a body support base arranged to be placed at either side of the body, a crutch carried by the base, and an adjustable means engaging the front portion of the crutch to throw the shoulder back.

5. In clavicular apparatus, a body support base, a swiveled crutch, an adjusting means carried by the crutch and arranged to engage the base at either of two points to effect backward movement of either the right or left shoulder.

6. In clavicular apparatus, a body supported base, a shoulder crutch carried thereby, an arm splint, and a supporting means extending from the base to the arm splint.

7. In clavicular apparatus, a body supported base, a shoulder crutch carried thereby, an arm supporting splint, and an adjustable connection between the splint and the base.

8. In clavicular apparatus, a body supported base, an arm splint arranged to engage the lower portion of the arm and bent to keep the elbow flexed, a hand rest at the end of the splint, and an adjustable connection between the elbow end of the splint and the base.

9. In clavicular apparatus, a base plate, an adjustable shoulder strap extending from the upper portion thereof and having a widened surface arranged to rest on the sound shoulder and clavicle, an abdominal strap extending from the lower portion of the base plate, a shoulder crutch carried by the base, means for adjusting the shoulder crutch, an arm splint having one end secured to the crutch, and an adjustable connection between the outer end of the arm splint and the base plate.

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

RICHARD H. CHEATHAM.

Witnesses:

RICHARD H. GODDARD,  
HIRAM E. HELLS.