No. 864,968. PATENTED SEPT. 3, 1907.

E. W. JOHNSON.

MULTIPLE NEEDLE HOLDER FOR ELECTROLYSIS.

APPLICATION FILED JUNE 28, 1907.

2 SHEETS—SHEET 1.

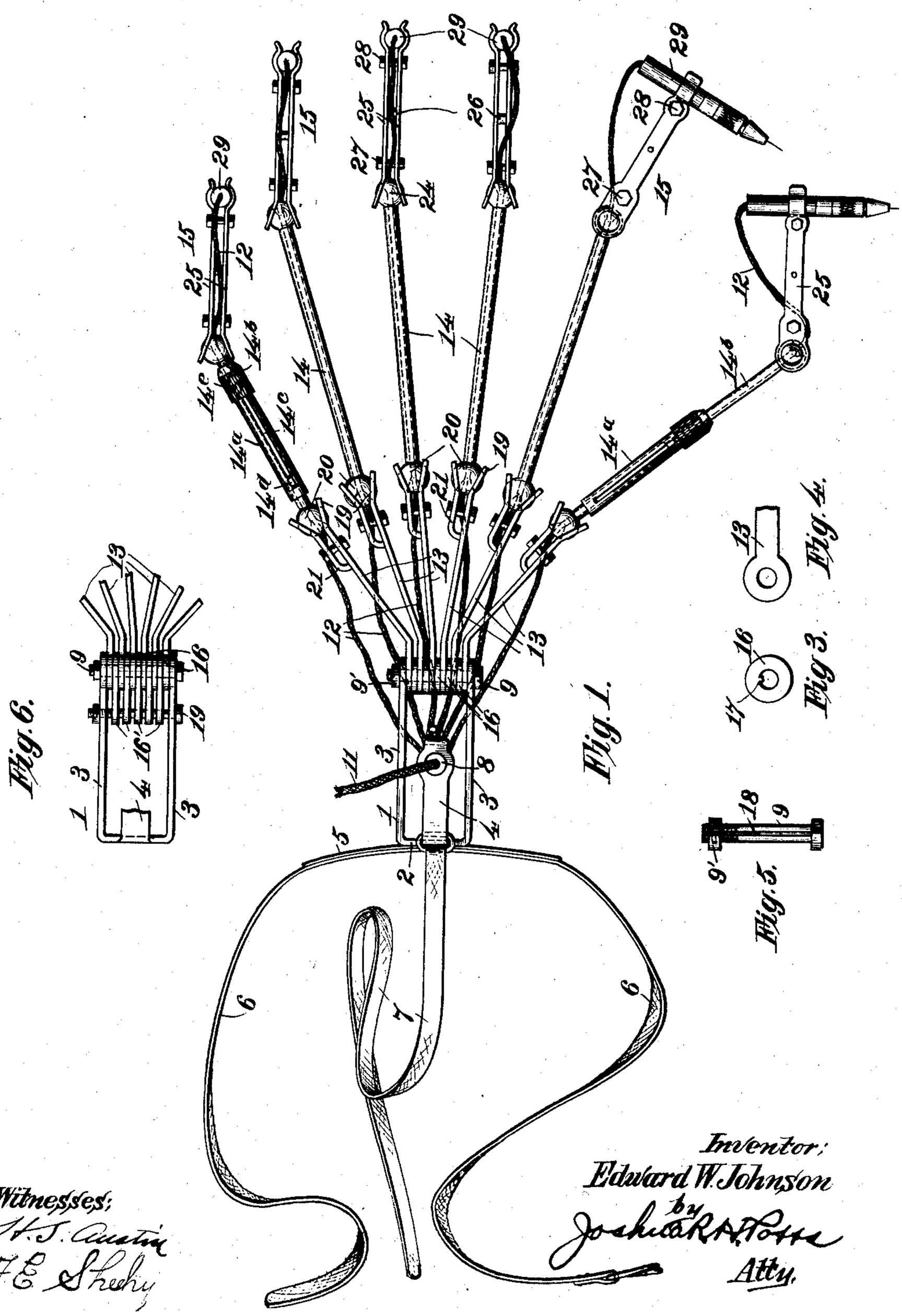

Fig. 1.

Fig. 6.

Fig. 4.

Fig. 3.

Fig. 5.

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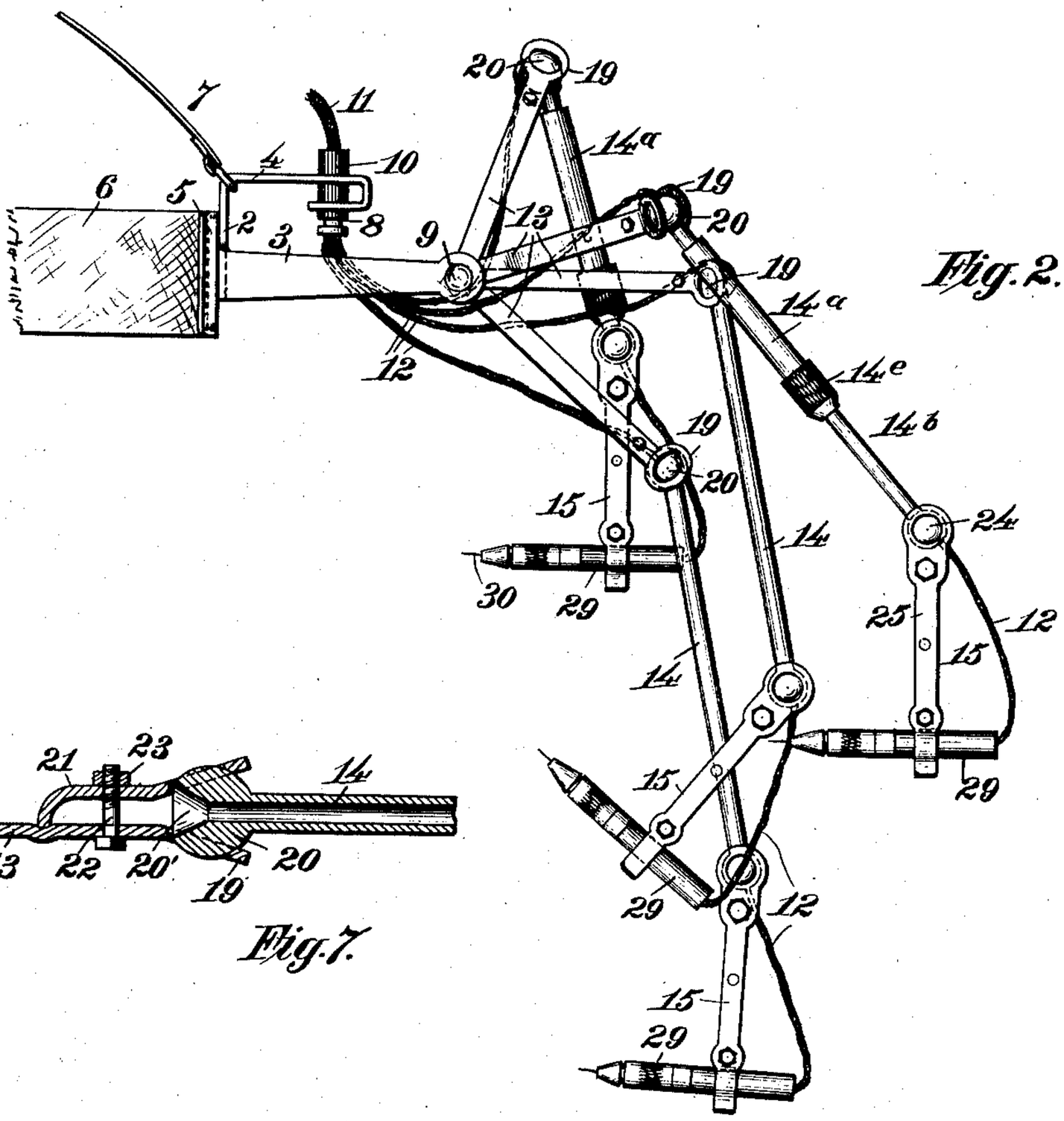

Fig. 2.

Fig. 7.

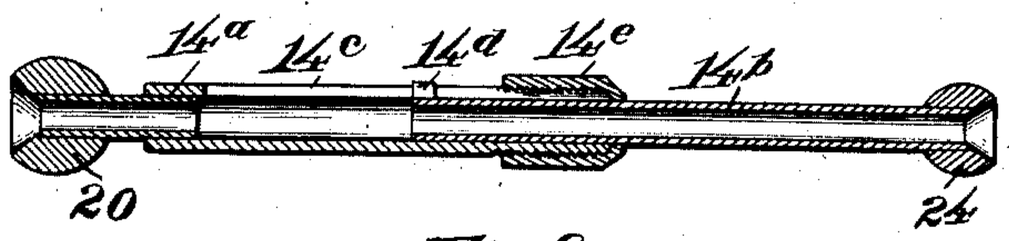

Fig. 8.

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UNITED STATES PATENT OFFICE.

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MULTIPLE-NEEDLE HOLDER FOR ELECTROLYSIS.

No. 864,968. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed June 28, 1907. Serial No. 381,340.

To all whom it may concern:

Be it known that I, EDWARD W. JOHNSON, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Multiple-Needle Holders for Electrolysis, of which the following is a specification.

My invention relates to surgical devices and has special reference to supports for surgical instruments used for electrolysis.

More particularly my invention relates to improvements in devices for holding surgical needles, such as are used in removing superfluous hair by electrolysis.

Heretofore, it has been the general custom to use but one needle at a time in removing superfluous hair from the face or body of the patient, thereby necessitating a protracted treatment. However, a plurality of needles have been used simultaneously, for the purpose of reducing the time necessary to remove a number of hairs, but in either case, whether one or more needles are used, the needle holders are arranged at the ends of flexible electric wires, and are permitted to hang, after the needle is inserted in the skin or flesh of the patient, causing much unnecessary pain, which at times is excruciating. Further, if the patient moves or winces with the pain, the needles are frequently dislodged and must be reinserted. Moreover, the needles cannot be maintained in the most efficacious position without holding the same with the hand.

The objects of my invention are to provide a device which will hold a plurality of needles at the same time, to the end that a number of hairs or blemishes may be treated simultaneously; to provide a needle holder whereby the needle will be positively held in any desired position for any length of time and that without dangling from or pulling at the skin or flesh of the patient.

A further object is to provide a needle holder as mentioned, which will so hold the needle as to prevent dislodgment by any movement of the patient.

With these objects in view my invention comprises generally a base or support, adapted to be attached to the person of the patient, a plurality of jointed arms attached to said support, and a plurality of needle holders arranged upon said arms.

My invention further consists in various novel constructions and arrangements of parts all as will be fully described hereinafter and particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a plan view of a device embodying my invention in its present preferred form, the arms being illustrated as extended, and two of them turned to better illustrate the needle holders, and the operation of the outer universal joint, Fig. 2 is a side elevation of the device, illustrating four needles held in different positions, Figs. 3, 4 and 5 are details of the connection of the arms with the support. Fig. 6 is a plan view of a modified form of joint, Fig. 7 is a detail section, illustrating one of the joints of the arms, and Fig. 8 is a detail sectional view of one section of an extensible or telescoping arm.

Although in the drawings and in the following specification, I have shown and described a specific embodiment of my invention, I wish it understood that I am not limited to the precise construction disclosed therein, as the device may be varied considerably without departing from the scope or spirit of my invention.

Referring to the drawings, 1 indicates the base or support of the device. This is preferably stamped out of sheet metal, and then is bent into the form shown in the drawings. As shown it comprises a plate portion, 2, a pair of forwardly extending arms, 3—3 and an upper vertical arm, 4. The plate, 2 is riveted or otherwise secured to a thin steel plate, 5, by which the device is secured to a strap, 6; and the strap, 6 constitutes means for attaching the device to the person of the patient. When the same is secured to the head an adjustable strap, 7 is used to aid in supporting the same by passing over the top of the head and fastening to the strap, 6 at the back. The arm, 4 is provided with a socket for an electric plug, 8, and the ends of the arms, 3 are connected by a bolt, 9, which constitutes the pivot for the needle supporting arms. The plug, 8 is provided with an insulating jacket, 10, to prevent charging the frame or arms of the device. 11 indicates the main line wire and 12 the separate insulated wires leading from the plug to the several needles.

The arms are each formed of a plurality of sections connected by universal joints and are preferably pivotally connected to the support, 1, although they may be rigidly connected thereto. Also the joints in the arms may be knuckle and swivel joints but I prefer universal joints for obvious reasons. As shown in the drawings each arm comprises three sections, a first section, 13, a second or middle section, 14 and an end or clamping section, 15. The first sections are formed of sheet metal stamped and bent into the form shown and are pivoted upon the bolt, 9. The ends of the arms are spaced apart by washers, 16, and the nut 9′ is tightened until the arms, though easily moved by the operator, will remain in any position, they are placed. To prevent the movement of several arms when one is moved, due to frictional contact of the arms, 13 and washers, 16, the washers are equipped with means to prevent their rotation with the arms. To this end I provide each washer with a key, 17, and groove the bolt, 9, as at 18 to receive them.

In Fig. 6, I have illustrated a modified form of washer. As shown therein the washers are formed

with an extension, 16′ and a bolt, 19, passing through said extensions and the arms, 3 hold the washers against rotation. This form possesses some advantage over the first described form, inasmuch as, if the bolt, 19 is tightened sufficiently, the arms, 3, will exert enough spring tension to automatically take up the wear of the arms, 13 and washers, 16.

Upon the outer end of each section, 13, is formed a ring, 19, which constitutes one side of a socket to receive and hold a ball, 20, arranged upon the inner end of the central or second section of the arm. The other side is formed of a member, 21, secured to the section, 13, and clamped upon the ball by a bolt, 22. The bolt, 22 passes freely through the section, 13, and is threaded into the part, 21. The joint is tightened by the bolt, 22 and a lock nut, 23 holds it securely against loosening. The middle section, 14 of each arm comprises a tubular member equipped with a ball at each end, of which the ball, 20, forming a part of the joint just described is one, and 24 the other. The outer or last section of each arm comprises a pair of plates, 25, 25 spaced apart by a stud, 26, and held together by bolts, 27 and 28. The inner ends of the plates 25 are formed to constitute a socket similar to the socket 19—21, and the bolt, 27 serves to regulate the tightness of the joint. The ring portions of the sockets are flared sufficiently to permit ample bend of the joints. The outer ends of the plates, 25, are bent to form a socket for a needle holder, 29, carrying a needle, 30, and the bolt, 28, clamps the holder securely therein.

The wires, 12 pass from the plug, 8, into the reamed end, 20′ of the ball, 20, through the tubular section 14 and from the ball 24 to the needle holder, 29.

In order that a large area may be covered with one setting of the device, one or more of the arms may be made extensible. In the drawings, I have illustrated two of such arms, but wish it understood that all of the arms may be formed in this manner if desired. As shown, I have made the middle section telescopic. In Fig. 8, I have illustrated such a section in detail. This comprises the tubular portions, 14^a and 14^b, the former carrying the ball, 20, and the latter the ball, 24. These telescope one within the other and a slot, 14^c and a lug 14^d prevent relative rotation of the parts. A nipple, 14^e screwed upon the end of the portion 14^a prevents the members from separating.

The operation of the device is as follows—The device is secured to that portion of the patient which is to be operated upon and the electrical connection made. The operator then grasps one of the needle holders and inserts the needle in the desired place and at the proper angle. The joints in the arms being of sufficient stiffness, the needle is held in the position placed without further attention of the operator and without annoyance to the patient. The next needle is operated in a like manner and so on until all are in operation. By the time the last is inserted, the first is usually ready to be removed and inserted in another place. Hence no time is lost and the length of treatment necessary is reduced considerably. Further, as the device is attached to that portion of the person which is being operated upon, if the person moves, the device moves also, therefore, the needles are not dislodged accidentally, nor do they pull or drag at the skin or flesh of the patient.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, a suitable support in combination with a plurality of needle holders and means for positively holding said needle holders in any position, substantially as described.

2. In a device of the class described, a suitable support in combination with a plurality of needle holders and means adjustably connecting said needle holders to said support, whereby said holders may be held in any position, substantially as described.

3. In a device of the class described, a suitable support, in combination with a plurality of arms connected to said support and a needle holder rigidly fixed to the end of each said arm, substantially as described.

4. In a device of the class described, a suitable support in combination with a plurality of adjustable arms connected to said support and a needle holder rigidly fixed to the end of each said arm, substantially as described.

5. In a device of the class described a suitable support in combination with a plurality of arms pivotally connected to said support and a needle holder rigidly fixed to the end of each said arm, substantially as described.

6. In a device of the class described, a suitable support in combination with a plurality of jointed arms connected to said support and a needle holder rigidly fixed to the end of each said arm, substantially as described.

7. In a device of the class described, a suitable support in combination with a plurality of arms connected to said support and each formed of a plurality of sections, and a needle holder rigidly fixed to the end of each said arm, substantially as described.

8. In a device of the class described, a suitable support in combination with a plurality of arms connected to said support and each formed of a plurality of sections connected by universal joints, and a needle holder rigidly fixed to the end of each said arm, substantially as described.

9. In a device of the class described, a suitable support, and means for attaching the same to the person of the patient, in combination with a plurality of needle holders and means for positively holding said needle holders in any position, substantially as described.

10. In a device of the class described, a suitable support and means for attaching the same to the person of the patient, in combination with a plurality of arms connected to said support and a needle holder rigidly fixed to the end of each said arm, substantially as described.

11. In a device of the class described, a suitable support adapted to be attached to the person of the patient, in combination with a plurality of adjustable arms pivotally connected to said support and a needle holder rigidly fixed to the end of each said arm, substantially as described.

12. In a device of the class described, a suitable support in combination with a needle holder, and means for positively holding said needle holder in any position, substantially as described.

13. In a device of the class described, a suitable support in combination with an extensible arm connected thereto and a needle holder fixed to the end of said arm, substantially as described.

14. In a device of the class described, a suitable support in combination with a jointed, extensible arm, pivotally connected thereto and a needle holder fixed to the end of said arm, substantially as described.

15. In a device of the class described, a suitable support in combination with a universally jointed, extensible arm pivotally connected thereto and a needle holder fixed to the end of said arm, substantially as described.

16. In a device of the class described, a suitable support in combination with a plurality of electrically connected needle holders and means for positively holding said needle holders in any position, substantially as described.

17. In a device of the class described, a suitable support having a socket for an electric plug, a plug in said socket, a jointed arm, connected to said support, a needle holder rigidly fixed at the end of said arm and insulated therefrom, and an electric connection between said plug and said needle holder, substantially as described.

18. In a device of the class described, a suitable support, in combination with a plurality of arms pivotally connected thereto and means for automatically taking up the wear of said arms, substantially as described.

19. In a device of the class described, a suitable support comprising a pair of arms, a bolt connecting said arms, a plurality of needle carrying arms pivotally mounted on said bolt, washers arranged upon said bolt between the ends of said arms, and means for preventing rotation of said washers, substantially as described.

20. In a device of the class described, a suitable support in combination with an arm pivotally connected thereto, and a needle holder arranged at the end of said arm, said arm comprising a flat section pivoted to said support, a central tubular portion jointed thereto and an outer clamp portion jointed to said central portion, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD W. JOHNSON.

Witnesses:
F. E. SHEEHY,
HELEN F. LILLES.