

[54] **SUPPORT FOR HAND, WRIST AND FOREARM SURGERY**

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[58] Field of Search..... 269/322, 324, 325, 269/328

[56] **References Cited**

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[57] **ABSTRACT**

A workbench for use in forearm, wrist, hand and finger surgery. It is formed of a ramp for the positioning of a patient's forearm, the ramp merging into a horizontal platform for the placing of the patient's wrist and hand. Studs project laterally from the edges of the ramp and the platform to serve for fixing elastic bands used in securing the patient's hand and forearm to the bench. The platform has an upwardly open recess into which fits a wooden work plate. This plate serves in the sculpting of bone grafts for use in reconstructive hand surgery. A T-bar support can be attached to the platform in an upright position for the palm-down placement of the fingers to facilitate certain joint surgery procedures.

5 Claims, 3 Drawing Figures

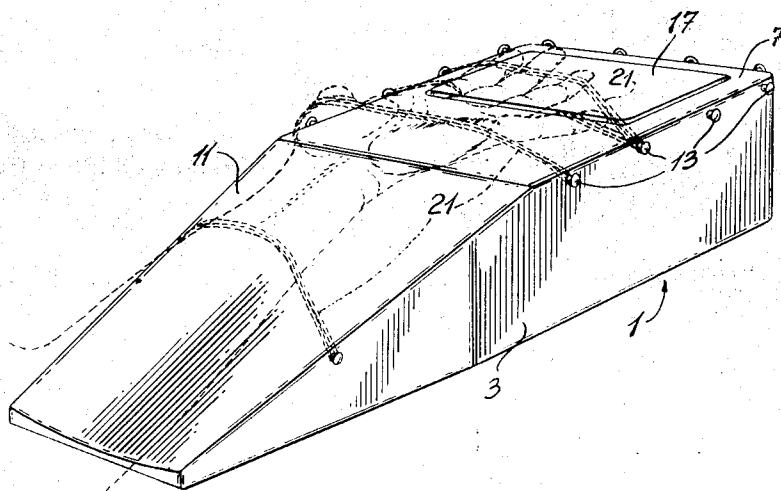


Fig. 1

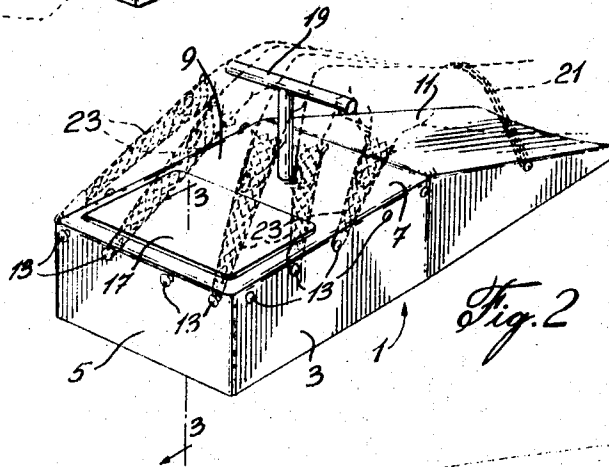
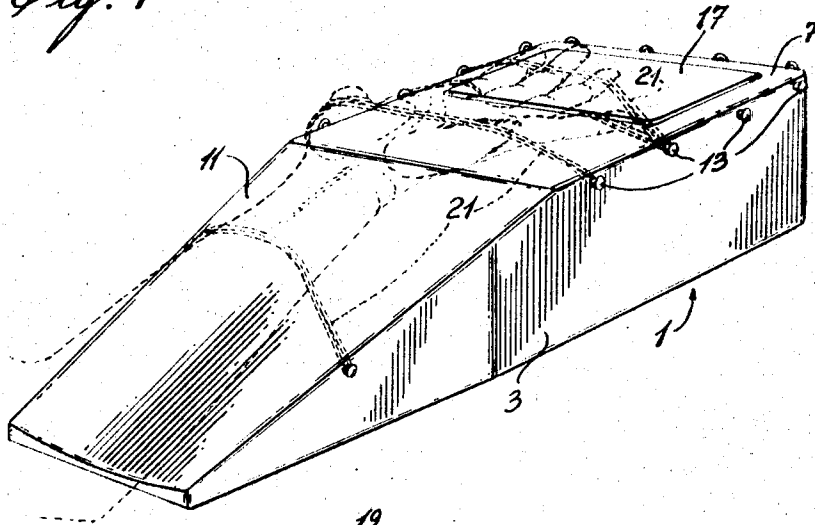


Fig. 2

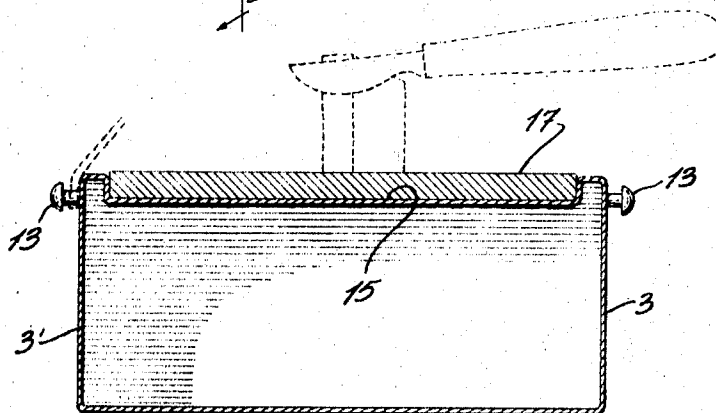


Fig. 3

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SUPPORT FOR HAND, WRIST AND FOREARM SURGERY

The present invention generally relates to a surgical support and more specifically to a workbench for use in forearm, wrist and hand surgery.

In the practice of surgery in the forearm, wrist or hand, it was heretofore necessary to resort to the help of one or more surgical assistants simply to hold steady, in desired position, the member to be operated on. A grilled flat table was later developed for hand surgery having, however, only a size sufficient for placing the hand which was then held by means of rubber bands. Although this table represented an improvement over a simple rolled-up towel or gown it has proven inadequate, as such a support is not steady enough nor can this type of table be adapted to the various positions that the forearm wrist and hand must be placed in for operations in these particular areas.

I have devised a versatile surgical workbench that overcomes the aforementioned shortcomings of the previous type of device in that it affords not only secure support for the forearm, wrist and hand, but more important still, it provides for the possibility of placing the member in the many different positions required for modern reconstructive surgical operations of the hand and with the steadiness necessary for proper immobilization during surgery.

More specifically, the workbench of my invention is formed of a ramp defining an inclined plane for the placing of the forearm of a patient and of a horizontal platform defining a flat plane for the laying of the patient's hand, the said planes merging one into the other. The hand and forearm may be positioned either with the palm up or down. The workbench of my invention includes anchorage points alongside the ramp and the platform for fixing elastic bands intended to secure the forearm and the hand on the ramp and on the platform. Also, part of the platform is preferably depressed to form a recess which opens into the horizontal plane, a wooden work plate being mounted in the recess for use in the sculpting of bones for hand grafts. I find it also useful to use a T-bar type support which is removably fixed to and is upstanding from the platform and which can be used for the support of a patient's hand in raised position, this support having an upper horizontal bar over which rests the area of the hand located between the palm and the fingers. The basal finger joints are thereby held in a flexed position.

A better understanding of the invention will be afforded by the description that follows of a preferred embodiment thereof having reference to the appended drawing therein:

FIG. 1 is a perspective view of a surgery workbench made in accordance with my invention, a hand to be operated being shown in dotted lines and with the palm facing upward;

FIG. 2 is a further perspective view of the workbench of FIG. 1 showing the hand with the palm facing downward and over the T-bar support, and

FIG. 3 is a cross-sectional view taken in a plane extending along line 3—3 of FIG. 2.

As shown, the surgical workbench of this embodiment of my invention comprises a unitary body 1 made of autoclavable metal such as stainless steel. The body 1 has upright supporting sidewalls 3, 3', a front wall 5 and a top wall 7. The latter is formed by a horizontal

portion or platform 9 and an inclined portion or ramp 11 integrally connected to the platform 9, the planes of the platform and of the ramp merging into one another. Body 1 can thus be easily transported by hand and placed on any suitable horizontal working surface.

A series of headed studs 13 are provided along the upper edge of the sidewalls 3, 3' and the end wall 5. These studs could also be replaced by downwardly oriented hooks or any other type of like securing devices.

Part of the platform 9 is depressed to form a recess 15 (FIG. 3) opening into its upper face and a hardwood work plate 17 is inserted into this recess.

For certain uses, as hereinafter specified, there is provided a T-shaped hand support 19 removably fixed to and upstanding from the platform 9 as by having the lower end of its stem threaded and screwed in to a tapped hole through the said platform 9. By providing a tapped hole extending completely through the platform 9, it is then possible to thread the support underneath the platform, in the enclosure formed by walls 3, 3' and 5, whereby to store the support 19 when not in use.

Finally, the ramp or inclined portion 11 of the top wall 7 is preferably concave when viewed in transverse cross-section whereby to more anatomically receive the patient's forearm.

In the use of the device shown in FIG. 1, the hand of the patient is laid flat over the platform 9 with the palm upward and the forearm resting on the ramp 11; the wrist laying at the junction between the ramp and the platform. Elastic bands 21, preferably rubber bands, are used to secure the member to the bench by twisting or winding them around the laterally projecting headed studs 13 after having been laid over the member. Elastic bands are used to secure both the hand and the forearm and also to distract and position the fingers. The position shown in FIG. 1 is particularly used for surgery of the inner face of the fingers, the palm, the inner face of the wrist and of the forearm. Further to providing a steady and natural resting position for the hand and forearm, the wrist is also fully exposed and the wrist tendons and carpal bones can thereby be approached readily either in the palm up or palm down position. The angle between the platform and the inclined plane produces an extension of the wrist and thus facilitates exposure to the structures.

When surgery is to be done on finger articulations, as in cases of arthritis, or in commissure surgery such as grafts in cases of burns, or in the case of surgery to correct congenital malformation in children, I have found the use of the T-shaped hand support 19 extremely useful. As shown, the hand is then in raised position with the fingers flexed at their basal joints and outstretched. The fingers are, in this case, secured in that position by conventional finger traps 23 fixed at their free ends to the studs 13.

The wooden plate 17 provided in the forward position of the support 19 is used as a cutting surface in the sculpting of bones for grafts, as illustrated in dotted lines in FIG. 3. The wooden plate 17 prevents the scalpel from becoming dulled, as would occur if used against a metal surface. As will be gathered from the above description, the workbench of my invention, useful in reconstructive hand surgery, is a portable support made of high grade stainless steel which has been designed to fit easily into an autoclave for sterilization,

particularly the "flash" type of autoclave as used in operating rooms.

I have thus provided a very convenient workbench useful in the practice of hand surgery to correct maiming resulting from accidents, surgery in the case of hand injuries and burns, diseases, tumours, arthritis, contractures and congenital malformations. While modern reconstructive hand surgery dates from the second world war its scope is constantly being enlarged as improvements are made in techniques and instrumentation. Many advances have been made on equipment recently but there still remain several neglected areas. A versatile, steady support for the fingers, hand, wrist and forearm has heretofore been lacking from the reconstructive surgeons' armamentarium.

I claim:

1. Workbench for use in forearm, wrist and hand surgery, said bench being formed of a ramp defining an inclined plane for the placing of the forearm of a patient and of a horizontal platform defining a flat plane for the positioning of the patient's hand, the said planes merging one into the other at the point where the wrist is intended to lie, said workbench including means alongside said ramp and platform for fixing bands intended to secure said forearm and hand on said ramp and platform and to position the fingers and thumb, and wherein said platform is partially depressed to form a recess which opens into said horizontal plane and a wooden work plate is mounted in said recess for use in the sculpting of bones for hand grafts.

2. Workbench as claimed in claim 1, including a hand support removably fixed to and upstanding from said platform for the support of a patient's hand in raised position, said support having an upper horizontal bar over which the area of the hand between the palm and fingers thereof rests.

3. Workbench as claimed in claim 2, wherein said ramp is concave in transverse direction.

4. Workbench for use in forearm, wrist and hand surgery, said bench comprising a metal body having side and front upright supporting walls, a top wall joining said side and front walls, said top wall having a horizontal portion and having an inclined portion merging into said horizontal portion; said bench further comprising means along said side and end walls adjacent to said top wall for fixing elastic bands intended to secure a patient's forearm and hand on said table and to position the fingers and thumb, and wherein said platform is depressed in part to form a recess which opens into the face of said top wall and a wooden work plate is mounted in said recess for use in the sculpting of bones for hand bone grafts.

5. Workbench as claimed in claim 4, including a hand support removably fixed to and upstanding from said platform for the support of a patient's hand in raised position with fingers flexed, said support having an upper horizontal bar over which the area of the hand between the palm and fingers thereof rests.

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