Dec. 23, 1924. 1,520,149

D. SHOCKEY

DEVICE FOR CUTTING SURGICAL BANDAGES

Filed Oct. 12, 1923 3 Sheets-Sheet 1

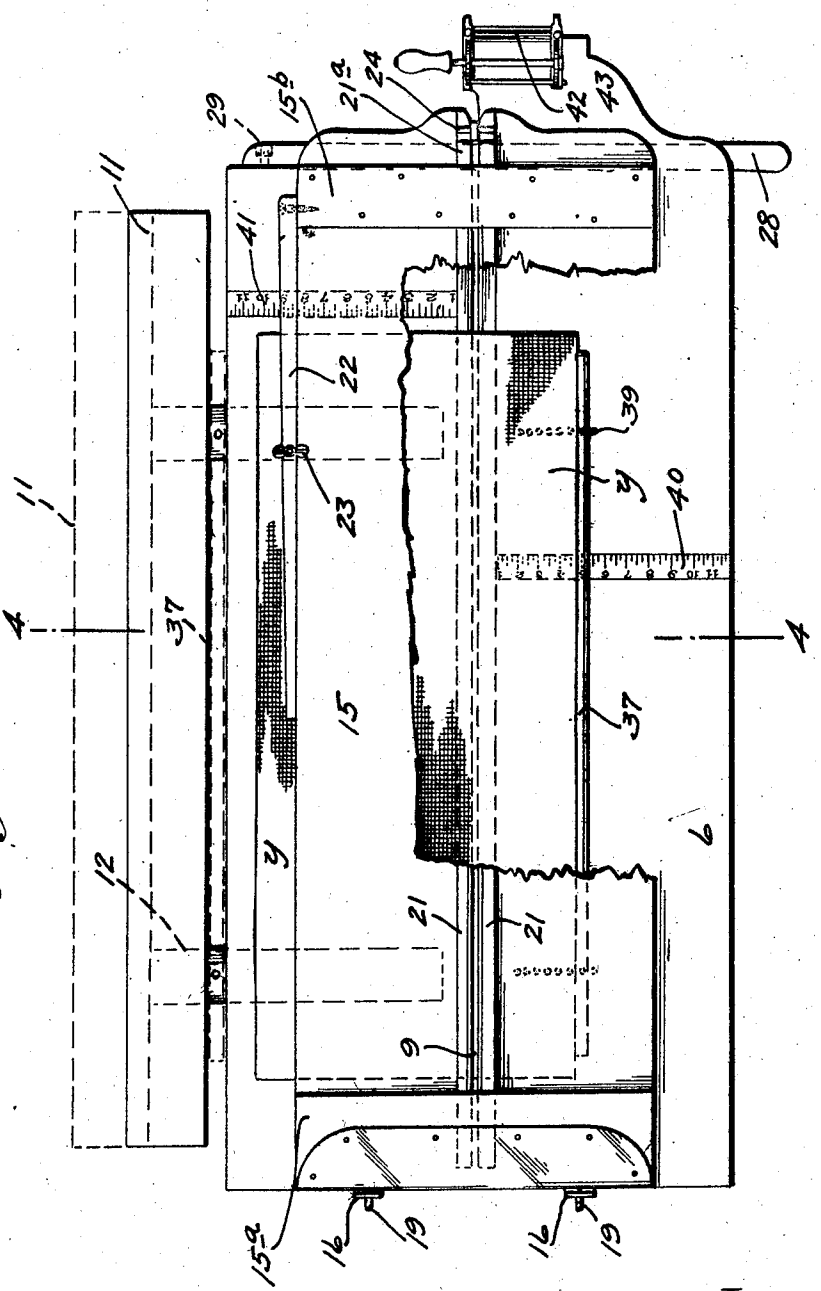


Fig. 1

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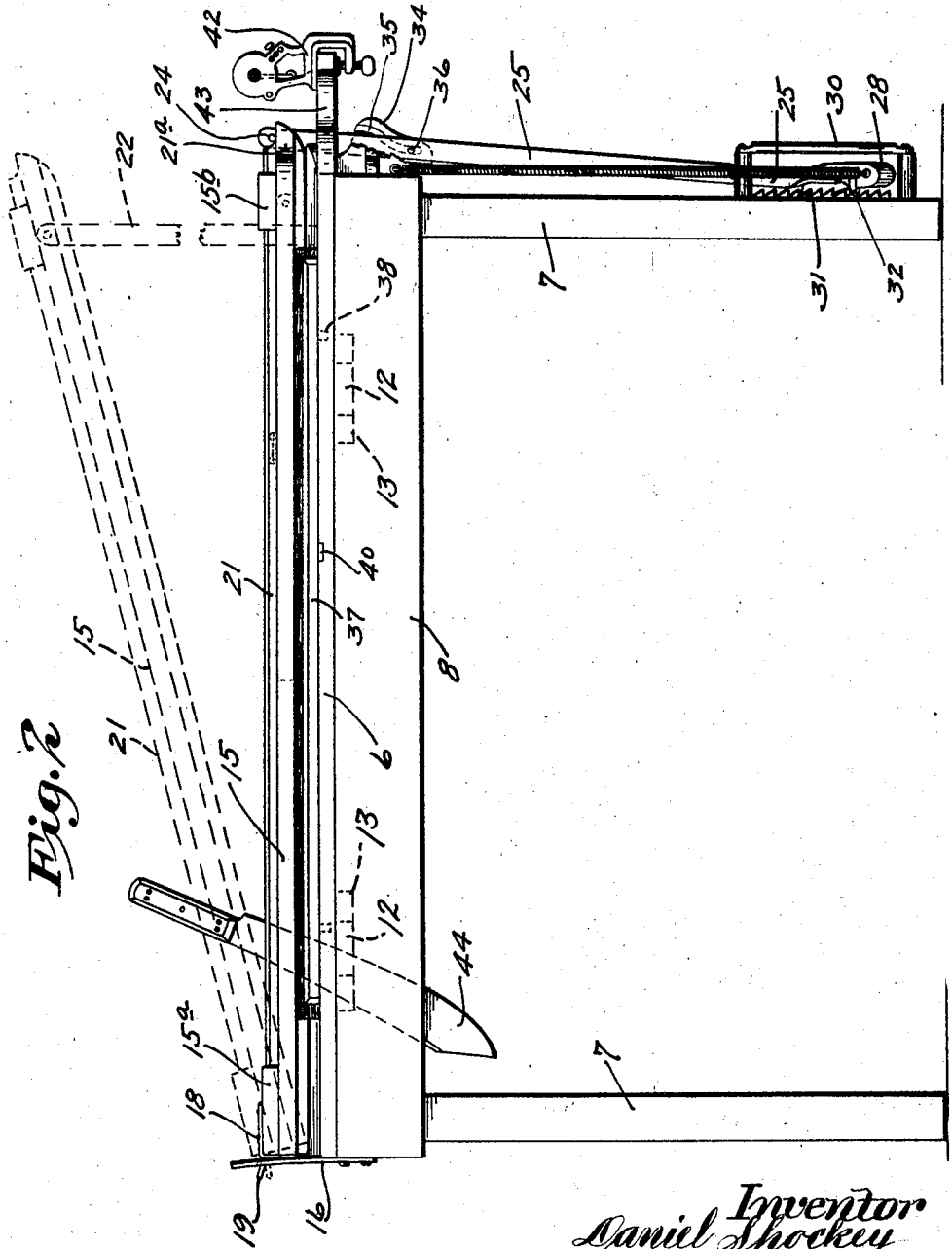


Fig. 2

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DEVICE FOR CUTTING SURGICAL BANDAGES

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Fig. 3

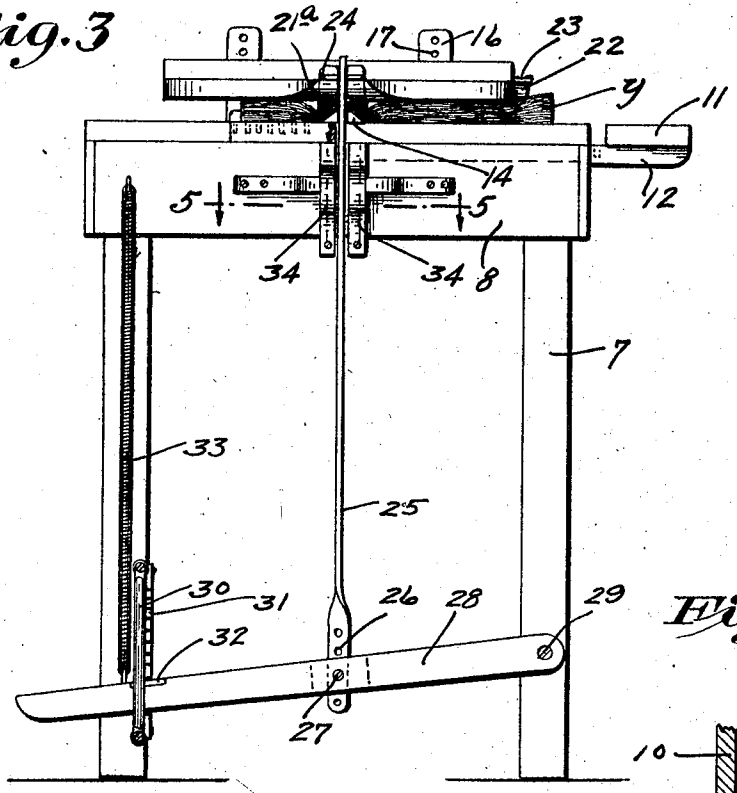


Fig. 5

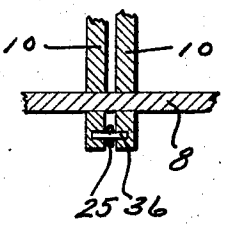
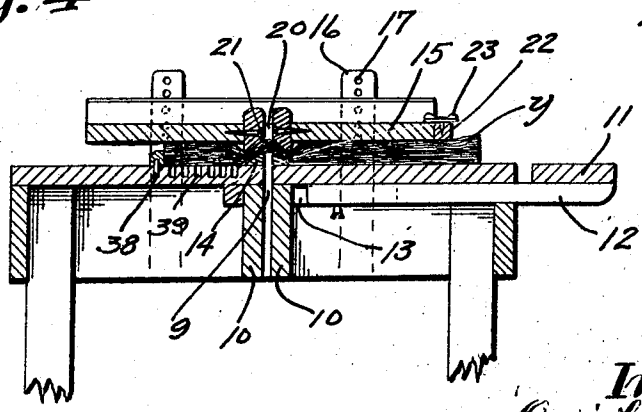


Fig. 4



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UNITED STATES PATENT OFFICE.

DANIEL SHOCKEY, OF NORTH ST. PAUL, MINNESOTA.

DEVICE FOR CUTTING SURGICAL BANDAGES.

Application filed October 12, 1923. Serial No. 668,087.

To all whom it may concern:

Be it known that I, DANIEL SHOCKEY, a citizen of the United States, residing at North St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Devices for Cutting Surgical Bandages; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention provides an improved device including a table, a clamping board and co-operating devices especially adapted for rapid, accurate and economical cutting of surgical gauze into strips suitable for use as surgical bandages; and, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

A device of the above character is especially adapted for use in hospitals and elsewhere where a large amount of surgical bandages are required, and where the bandages, from time to time, will be cut in varying desired widths from wide sheets of surgical gauze. The device obviates the necessity of all running or power-driven devices and provides means whereby, by the use of a hand-operated knife, the bandages may be cut in any desired width from gauze laid in multiplies to a very considerable thickness and whereby the operations may be performed easily, rapidly and accurately.

In the accompanying drawings, which illustrate a commercial form of the device, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a plan view of the device, with some parts broken away;

Fig. 2 is a side elevation of the same;

Fig. 3 is a front end elevation of the device;

Fig. 4 is a transverse vertical section taken on the line 4—4 of Fig. 1; and

Fig. 5 is a fragmentary horizontal section taken on the line 5—5 of Fig. 3.

For supporting the gauze, I provide a table 6 shown as supported by legs 7 and having a depending marginal rail 8. At its longitudinal center, this table is provided with a narrow knife passage 9 that extends nearly from end to end thereof, and below this passage 9 the table is provided with longitudinal central rails 10 that are spaced apart the width of the knife passage 9 so that they form a downward extension of said knife passage. To adapt the table to support wide sheets of surgical gauze, it is preferably provided with an extension leaf 11 having horizontal supporting bars 12 that work slidably through guide channels 13 in one side and under the body of the table top.

On its top, adjacent to the knife passage 9, the table is provided with rigidly secured clamping strips 14. The strips 14 are preferably approximately V-shaped in cross section. These strips or raised ridges 14 are spaced the distance of the knife passage 9 so that they form an upward extension of said guide channels, but their main function is to produce a stretching and clamping action hereinafter to be more particularly noted.

In the drawings, the character *y* indicates the wide sheets of surgical gauze which, as is customary, are laid in multi-plies to considerable thickness ranging usually from one to two inches, said plies being formed by a continuous sheet manifolded back and forth to produce the pile.

For clamping the pile of gauze *y* while being cut, I provide a so-called clamping board 15 preferably made of wood, but capable of being made of any suitable material. At its rear end, this board is hinged to the rear end of the table with freedom for vertical adjustments to adapt itself to the thickness of the pile of gauze *y*. As shown, this adjustable hinge is rigidly secured to the rear end of the table by a pair of upstanding straps 16 having vertically spaced perforations 17 and by providing the rear end of the clamping board 15 with a reinforcing metal angle strap 18 having slightly bent pins 19 that are detachably insertable into the perforations 17. The clamping board 15 is provided with a longitudinal knife passage 20 that is aligned with the knife passage 9 of the table top. This passage 20, as shown, is formed between a pair of parallel clamping bars 21 that are rigidly secured to the clamping board, and extend both above and below the same. The lower edges of the clamping bars 21 are bevelled so that they are parallel to the bevel faces of the clamping strips 14 on the

table top. The knife passage 20 extends nearly but not quite from end to end of the clamping board, and said clamping board, at its front and rear ends, respectively, is provided with transverse straps 15ª and 15ᵇ that rigidly connect the two sides or sections of said board. For holding the clamping board in the raised position shown by dotted lines in Fig. 2, while the gauze is being positioned on the table, said clamping board is provided at one side near its front end with a pivoted supporting leg 22 which, as shown, is provided with a turnbutton 23 by means of which it may be supported flush with one side of the clamping bars, when not in use.

At the front end of the clamping board 15, the clamping bars 21 are extended to form gripping lugs 21ª that are adapted to be engaged by a gripping head 24 formed by a pin secured to the upper end of a clamping bar 25. This clamping bar 25, at its lower end, is shown as provided with vertically spaced perforations 26 adapting it to be adjustably connected by a pivot pin 27 to the intermediate portion of a foot lever 28, which latter is pivoted to one of the table legs at 29. The free end of the lever 28 works with freedom for limited lateral movements within a vertically extended keeper bracket 30 that is rigidly secured to one of the table legs and is provided with ratchet teeth 31 adapted to be engaged by a ratchet plate or dog 32 fixed on the lever 28. The lever 28 is put under strain to move upward by a coiled spring 33 attached thereto and anchored at its upper end to the table. The upper portion of the clamping bar 25, at a point below the table top, works between the laterally spaced flanges of a guide bracket 34 that is provided with curved cam grooves 35 engaged by a pin 36 carried by said bar 25. The purpose of these cam grooves will be noted in the description of the operation.

For gauging the width of the strips to be cut from the pile of sheets *y* I provide an adjustable gauge strip 37 shown as provided with depending pins 38 that are engageable with parallel transverse rows of perforations 39 in the table top. Also, the table top is preferably provided within scales 40 and 41, graduated inches and fractions thereof.

The strips cut from the sheets are adapted to be wound directly onto a winding device of well known construction, indicated as an entirety by the numeral 42 and clamped to the horizontally projecting shelf 43 secured to the front end of the table or formed as an extension of one of the top sections thereof. The numeral 44 indicates a large knife such as a commercial carving knife, and it is adapted to run freely in the aligned knife-cutting channels in the table top and clamping board.

Operation.

When strips are to be cut from the pile of gauze sheets, the pile is placed on the table across the knife passage 9 and against the gauge strip 37, which latter, of course, will be set for the proper or desired width of strip. Then the clamping board is turned down on top of the pile of gauze, then the operator steps on the free end of the lever 28 and forces clamping bar 25 down, and as the clamping bar is forced downward, the cam grooves 35 acting on the cam pin 36 forces the upper end of bar 25 rearward so that its head-forming pin 24 engages on the top of the projecting ends 21ª. Hence, downward pressure on the lever 28 will very tightly clamp the board on top of the pile of gauze. Under this clamping action, the bevelled upper surfaces of the clamping strips 14 and the bevelled under surfaces of the clamping bars 21 buckle the engaged portion of the pile of gauze in the act of compressing the same to almost solid form and slightly stretch the same so that the clamped gauze may be cut with the knife 44 almost as if the same were a solid mass. During practice it has been found that the ordinary flimsy gauze may, with the knife, be cut with very smooth edges, and moreover, the knife may be inserted and drawn through the gauze rapidly and with a surprising ease.

When the lever 28 is depressed and locked down by the ratchet teeth 31, the clamping board will, of course, be firmly held in its clamping position. To release the clamping board it is only necessary to kick or push the free end of lever 28 laterally outward so as to release it from the ratchet teeth 31 and thereupon spring 33 will quickly throw said lever and bar 25 into their normal uppermost positions. Under upward movement, the cam grooves 35 will throw the free upper end of bar 25 outward and position its pin 24 outward of the path of movement of the projecting lugs 21ª and thus permit the clamping board to be freely raised into the dotted line position and there temporarily held by the leg 22. Before the clamping action above described is performed, the clamping board will, of course, be properly adjusted at its hinge connection on the table top. The adjustability of said hinge connection is such that very thick piles of gauze may be properly clamped and cut with the knife by a single operation. Of course this device is capable of other uses than that above described, but it has been especially designed and is particularly adapted for the purpose indicated.

What I claim is:

1. In a device of the kind described, a table having a long knife-guiding channel, a presser board movably mounted above said table and having a knife-guiding channel

aligned with the knife-guiding channel of said table, and means for pressing said presser board toward said table to clamp the material to be cut between the same and the table, said table and clamping board adjacent their knife-guiding channels having beveled clamping surfaces arranged to kink the material to be cut in the clamping action.

2. In a device of the kind described, a table having a long knife-guiding channel, a presser board movably mounted above said table and having a knife-guiding channel aligned with the knife-guiding channel of said table, and means for pressing said presser board toward said table to clamp the material to be cut between the same and the table, said table and clamping board adjacent their knife-guiding channels and on each side thereof having clamping surfaces that are beveled in reverse directions and arranged to kink and stretch the material to be cut in the clamping action.

3. In a device of the kind described, a table having a long knife-guiding channel, a presser board movably mounted above said table and having a knife-guiding channel aligned with the knife-guiding channel of said table, means for pressing said presser board toward said table to clamp the material to be cut between the same and the table, said table having a horizontally adjustable leaf connected thereto by parallel sliding bars, and a gauge strip having depending pins, said table and sliding bars having seats to receive the pins of said gauge strip.

4. In a device of the kind described, a table having a long knife-guiding channel, a presser board movably mounted above said table and having a knife-guiding channel aligned with the knife-guiding channel of said table, and means for pressing said presser board toward said table to clamp the material to be cut between the same and the table, said table having beveled clamping strips adjacent its knife-guiding channel and said clamping board adjacent its knife-guiding channel having inset clamping bars, the lower portions of which are beveled so that they cooperate with the beveled clamping strips on said table to kink the material to be cut in the clamping action.

5. The structure defined in claim 4 in which the clamping strips on said clamping board extend above the top thereof and in which said table adjacent its knife-guiding channel is provided with laterally spaced depending bars that extend the knife-guiding channel downward and assist in holding the knife in the vertical plane of said channel.

6. In a device of the kind described, a table having a long knife-guiding channel, a presser board movably mounted above said table and having a knife-guiding channel aligned with the knife-guiding channel of said table, means for pressing said presser board toward said table to clamp the material to be cut between the same and the table, and a strip-winding device applied at one end of the table at one side of said knife-guiding channels.

7. In a device of the kind described, the combination with a table having a long knife-guiding channel, and a clamping board hingedly connected at one end to one end of said table and having a long knife-guiding channel in the vertical plane of the knife-guiding channel of said table and provided at its free end with a projecting grip lug, a depressible clamping bar mounted at the front end of the table and having a gripping head engageable with the grip lug on the free end of said clamping board, and a cam device on said table operative on said clamping bar to move the head thereof onto said gripping lug when said clamping bar is lowered and to move said head out of the path of movement of said grip lug when said clamping bar is raised.

8. The structure defined in claim 7 in further combination with an upwardly spring-pressed lever connected to said clamping bar, and means for locking said lever in different depressed positions.

In testimony whereof I affix my signature.

DANIEL SHOCKEY.