

I. M. BROWN.
NEEDLE HOLDER.

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945,015.

Patented Jan. 4, 1910.

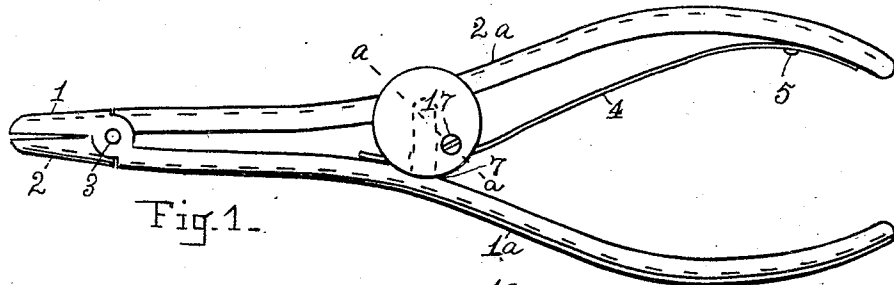


Fig. 1.

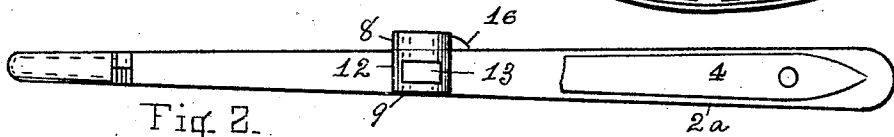


Fig. 2.

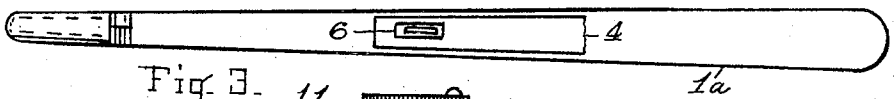


Fig. 3.

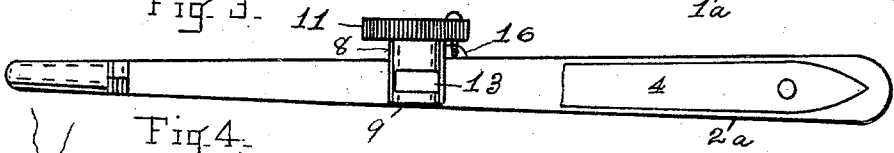


Fig. 4.

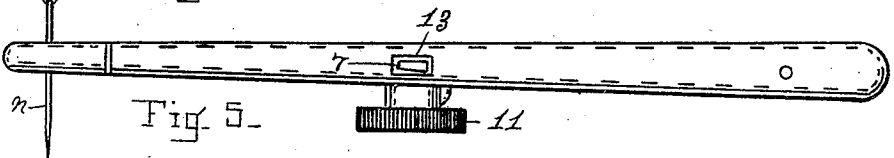


Fig. 5.

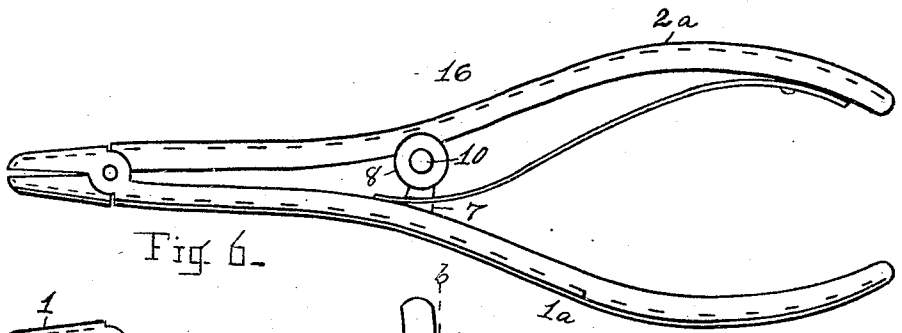


Fig. 6.

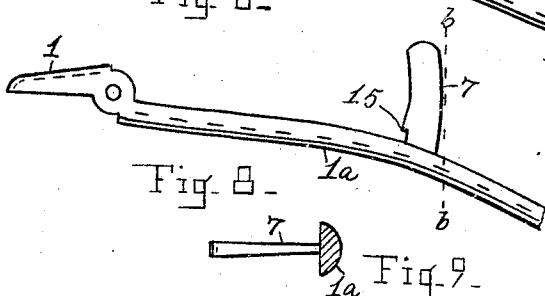


Fig. 8.

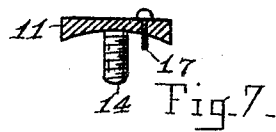


Fig. 7.

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NEEDLE-HOLDER.

945,015.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ISAAC M. BROWN, a citizen of the United States, residing at New London, in the county of Waupaca and State of Wisconsin, have invented a new and useful Needle-Holder, of which the following is a specification.

My invention relates to a holder in which a needle is to be held for use in surgical work, and the said holder consists of two gripping jaws pivoted together, each having an extension to be grasped in the hand of the user, and the gripping jaws closed and opened by the closing and opening of the hand in a manner similar to the operation of an ordinary pair of nippers. A spring is secured to one of the jaw handles which is arranged to engage with the other jaw handle and normally hold the two handles and jaws spread open. Means are attached to the handles of the jaws for holding the jaws closed when a needle is gripped between them by the movement of the thumb of the hand in which the tool is gripped, in one direction, and for releasing the needle by a reverse movement of said thumb, which operation will be fully explained by reference to the accompanying drawing, in which,—

Figure 1 is a plan showing the tool with its jaws opened about as they would be were a needle held between them. Fig. 2 is a plan of the inside of the upper handle in Fig. 1, and showing the outside of the jaw end. Fig. 3 is a plan of the inside of the lower handle in Fig. 1 and showing the outside of its jaw end. Fig. 4 is a plan of the inside of the upper handle of Fig. 1, and showing the thumb screw in position. Fig. 5 is a plan of the complete tool as in Fig. 1, but turned so as to show a plan view of the upper edge of the handle, it also showing a needle held in its jaws. Fig. 6 is a plan similar to Fig. 1, with the thumb screw removed. Fig. 7 is a vertical section of the thumb screw head, on the lines *a, a*, of Fig. 1. Fig. 8 is a plan of the upper jaw and part of the lower handle member, as in Fig. 1, and showing its finger to be engaged by the thumb screw. Fig. 9 is a transverse section on the line *b, b*, of Fig. 8, showing a detail.

Similar numerals and letters indicate like parts in the several views.

1 and 2 indicate upper and lower jaws respectively, and 1^a and 2^a, their respective

handle members; a needle *n*, being held between the jaws in Fig. 5.

3, is the pivot which connects the two jaws together; 4, a spring secured to the member 2^a, with rivet 5, which spring is provided with a slot 6, through which the finger 7 of the member 1^a, passes, the slot holding the spring in position transversely of the member 1^a, and the spring acting to throw the members 1^a and 2^a, apart. Upon the inside of the member 2^a, ears 8 and 9, extend inward, the ear 8 being the thicker of the two, is circular on one side as shown in Fig. 8, and is provided with a screw hole 10, into which the thumb screw 11, is fitted. The ear 9, extends inward from 2^a, substantially the same distance as the ear 8, and is preferably connected to it by means of webs 12, for the purpose of adding strength to the ear 8 for withstanding the endwise thrust of the thumb screw 11, the finger passing through the slot 6 in the spring, between the ears 8 and 9, and into the slot 13, in the member 2^a. The screw 11, being screwed into the hole 10, against the finger 7, will hold the two jaws in whatever position they may be.

For making the holding of the jaws more certain, and less liable to become separated when in use, the side of the finger with which the screw engages is beveled, as is shown in Figs. 3 and 5, that is,—the plane in which the side of the finger lies which is to be engaged by the end of the thumb screw, is at an angle with the axial line of the thumb screw, more or less than a right angle, and the thumb screw is provided with a rounded end 14, whereby any pulling outward of the finger will act to turn the screw more tightly upon the finger. A tool to be held in the right hand will usually be found the most convenient for use, and a movement of the thumb toward the person for tightening the screw the most natural, in which case the thread of the screw should be a right hand one, and the right hand edge of the finger should be the thicker of the two edges of the finger, but a left hand thread may be used by a right handed person by pushing instead of pulling with the thumb for tightening the screw. The thread and edges of the finger as herein shown, will doubtless better meet the demands of the public, but either is within the scope of this invention. As an additional precaution against the two jaws being opened when they are not wanted to open,

the finger 7, is tapered lengthwise of it on that side of it upon which the set, or thumb screw engages, as is shown in Fig. 9, the outer, or free end being the thicker of the two, whereby any opening of the jaws will cause the finger to be pinched still harder by the thumb screw. For preventing the opening of the jaws too far, or farther than is necessary for the insertion of the needle, a catch 15, is formed on the inner edge of the finger, under which the end of the slot 6, can catch and limit the amount of their opening.

It will be observed that the under side of the thumb screw head is concaved, which concavity is for the purpose of having the ear 8 of sufficient thickness for receiving the screw, and at the same time bring the head of the thumb screw close to the handle 2^a, for convenience in manipulating the screw. In Figs. 4 and 5, the edge of the thumb screw is represented as being milled, which it properly should be for providing the required friction of the thumb therewith. At the junction of the ear 8 and handle 2^a, a stop 16, is arranged, and upon the outside and at the correct point relative to the thread of the thumb screw, in the circumference of its head for allowing the screw to release the finger, a screw 17, is inserted, it extending when screwed down, to a point a little below the top of the stop 16. This screw as thus arranged, serves to hold the head of the thumb screw in position for an instant engagement of the screw with the finger 7, by less than a half turn of the screw, and it also prevents any liability of the thumb screw becoming lost by turning it out too far.

Having described my invention and the manner of its operation, what I claim and desire to secure by Letters Patent, is,—

1. In a needle holder having a pair of jaws pivoted together and adapted to hold a needle between them, and having handle members extending from the jaws adapted to be grasped in one hand of the user for closing said jaws, and a spring for opening the jaws secured near one end to the outer end of one of the handle members, its other and unsecured end engaging with the other handle member intermediate its ends, the unsecured end being provided with a slot through the same, a finger extending inward from the last named handle member and arranged to pass through said slot and enter a slot upon the inside of the companion handle member, a catch upon an edge of said finger for the engagement under it of the outer end of the slot in said spring for limiting the amount of opening of said jaws, ears extending inward from two opposite sides of the slot in said companion handle member, a thumb screw threaded through one of said ears, and being adapted to clamp said finger between its end and the companion ear, its head being arranged in position to be turned by the thumb

of the user while grasping said handle members, and its screw end being shaped to engage with the aforesaid finger and hold the jaws closed, when closed by the action of the hand of the user.

2. In a needle holder provided with a pair of jaws pivoted together and adapted to hold a needle between them, and handle members extending from the jaws adapted to be grasped in one hand of the user for closing said jaws, and a spring arranged between the handle members for opening the jaws, a finger having a trapezoidal cross section extending inward from the inside of one of the handle members, and being arranged to enter a rectangular shaped slot upon the inside of the companion handle member, ears extending inward from two opposite sides of said slot, a thumb screw threaded through one of said ears and its head arranged in position to be turned by the thumb of the user while grasping said handle members, and its screw end being shaped to engage with the aforesaid finger and hold the jaws closed, when closed by the hand of the user and the screw is turned in the right direction, the plane of the side of said finger engaged by the end of said thumb screw, longitudinally of said handle members being at an angle with the axial line of said thumb screw, greater or less than a right angle, and the thread upon said thumb screw being a right or left one, as required for the thickest edge of the finger to engage the end of said screw at one side of its axial line and turn the screw by means of the friction between screw and finger as the handle members are thrown apart by the action of the spring between said handle members.

3. In a needle holder provided with a pair of jaws pivoted together and adapted to hold a needle between them, and handle members extending from the jaws adapted to be grasped by one hand of the user for closing the jaws, and a spring arranged for opening the same, a finger extending inward from the inside of one of the handle members and being arranged to enter a rectangular shaped slot upon the inside of the companion handle member, ears extending inward from two opposite sides of said slot, and strengthening webs connecting the ears, one with the other, a thumb screw threaded through one of said ears and its head arranged in position for being turned with the thumb of the user while grasping said handle members, and its screw end being adapted to engage with the aforesaid finger and hold the jaws closed, when closed by the action of the hand, and the thumb screw is turned in the right direction by the movement of the thumb of the user.

4. In a needle holder having a pair of jaws pivoted together and adapted to hold a needle between them, and having handle members extending from said jaws adapted

to be grasped in one hand of the user for closing the jaws, and a spring arranged between the handle members for opening the same, a finger extending inward from the inside of one of the handle members, and being
 5 arranged to enter a slot in the inside of the companion handle member, ears extending inward from two opposite sides of said slot, a thumb screw threaded through one of said
 10 ears, a circular head upon said screw arranged in position to be turned by the thumb of the user while grasping said handle members, and its screw end being arranged to engage the aforesaid finger and hold the jaws
 15 closed, when closed by the action of the hand of the user, a stop arranged on the handle member alongside of the screw threaded ear and extending from said handle member to nearly the distance of the screw entering end
 20 of said ear, and a screw tapped into the head of the thumb screw in a direction parallel with the axial line of the screw and extending through said screw head and to a point below the upper edge of the aforesaid stop
 25 for limiting the circular movement of said screw head.

5. In a needle holder provided with a pair of jaws pivoted together and adapted to hold

a needle between them, and handle members extending from the jaws adapted to be
 30 grasped in one hand of the user for closing said jaws, and a spring arranged between the handle members for opening the jaws, a finger, four sided in cross section, having two
 35 short sides and two longer ones, extending inward from the inside of one of the handle members, and being arranged to enter a rectangular shaped slot upon the inside of the
 40 other handle member, ears extending inward from two opposite sides of said slot, a thumb screw threaded through one of said ears and its head arranged in position to be turned by
 45 the thumb of the user while grasping said handle members, and its screw end being shaped to engage with the aforesaid finger for holding the jaws closed, when closed by
 50 the action of the hand of the user, said finger being of an increasing thickness between its two longer sides between the point of its connection with the handle member and its outer end.

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Witnesses:

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