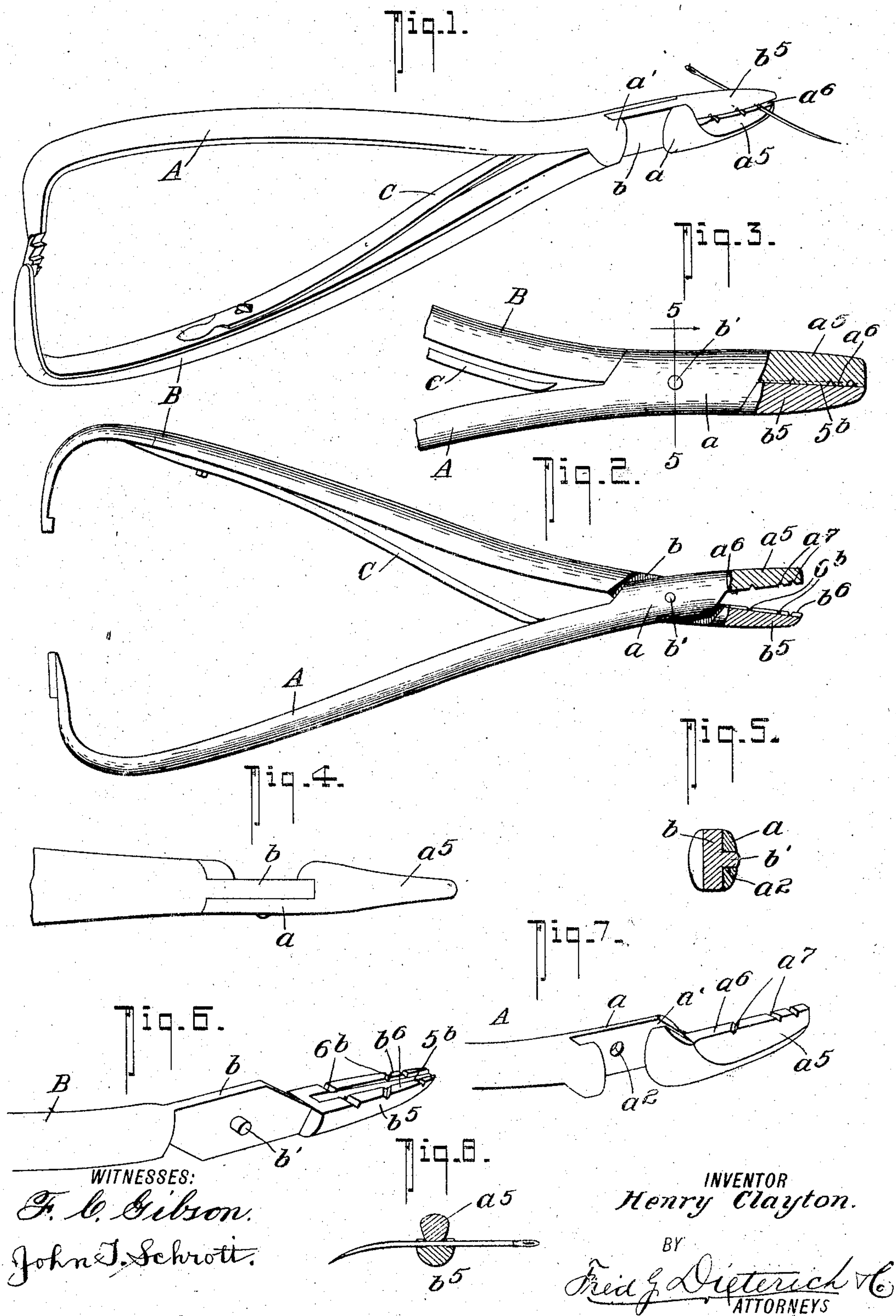


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PATENTED MAY 30, 1905.

H. CLAYTON.
SURGEON'S NEEDLE HOLDER.
APPLICATION FILED OCT. 11, 1904.



UNITED STATES PATENT OFFICE.

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SURGEON'S NEEDLE-HOLDER

SPECIFICATION forming part of Letter: Patent No. 791,322, dated May 30, 1905.

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To all whom it may concern:

Be it known that I, HENRY CLAYTON, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Surgeons' Needle-Holders, of which the following is a specification.

This invention, which relates to means for holding needles for use by surgeons in stitching wounds, &c., more particularly seeks to provide improvements in that type of needle-holders adapted for holding straight or curved needles at different transverse angles with respect to the holder and by which the needle can be effectively held with but a minimum danger of breaking the same and in such manner that the surgeon can conveniently and dexterously use the implement. Needle-holders of the type referred to heretofore provided, so far as I know, have not met all of the desired requirements and have been open to a number of objections, since by reason of the manner in which the needles are usually gripped undue pressure on the handles and the opposing gripper-jaws frequently breaks the needles or weakens them at the points where gripped, so that during the operation of stitching or sewing up a wound they break off at the point where the jaws close upon the needle.

In its generic nature my invention comprehends an improved coöperative arrangement of the gripping-surfaces of the two opposing jaws whereby a firm and solid opposing gripping-surface for engaging the needle is provided at points between the opposite or extreme outer edges of the jaws and in which the said extreme or outer edges of the jaws are provided with arbitrarily-arranged notches or seats for receiving the needle and holding it at right or other angles with respect to the jaws in a manner that allows for a slight elasticity or spring of the needle-body at points where the needle seats within the notches and whereby the danger of the needle breaking off or shifting its gripped position is reduced to the minimum.

In its more subordinate features my invention consists in peculiar details of construction of the opposing jaws or gripper members, all of which will be hereinafter fully described,

and pointed out in the appended claims and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved needle-holder. Fig. 2 is a side elevation thereof, parts being in longitudinal section, the jaws being open. Fig. 3 is a longitudinal section, on a slightly-enlarged scale, of the jaw ends of the holder closed with a needle gripped therebetween. Fig. 4 is a plan view of the parts shown in Fig. 3. Fig. 5 is a transverse section taken on the lines 5 5 of Fig. 3. Fig. 6 is a detail view of the lower or longitudinally-recessed gripper-jaw. Fig. 7 is an inverted perspective view of the other jaw. Fig. 8 is a cross-section of the jaw ends with a curved needle therebetween.

Referring to the details of structure, A and B designate the coöperating handles which are of the conventional shape, one of which has a flat detachable spring C secured thereto in any well-known manner. The two handles A and B are pivotally joined and are preferably connected in such manner that they can be readily taken apart, so that they can be conveniently cleaned, and for such purposes the head portion *a* of the handle A has a slotted socket *a'* and a stud-aperture *a''* to detachably receive the flat head *b* of the handle B and the stud *b'*, which is an integral part of the head *b*, the several parts just described being also of a well-known construction and form *per se* no part of my invention, which specifically lies in the peculiar formation of the opposing jaws *a⁵ b⁵*, formed on the outer ends of the handles A and B. One of the jaws, preferably the one, *b⁵*, shown in the drawings, tapers from the back to the nose end, whereby to provide differential bearing-surfaces, wide at the rear and narrow at the front, for different sizes of needles. The gripping-face of the jaw *b⁵* is in the nature of a longitudinal depression or groove, whereby to provide longitudinal flanges *b⁶* at the opposite edges of the gripping-surfaces *5^b*. The side flanges *b⁶* have a series of arbitrarily-arranged and transversely-disposed notches or seats *6^b*, and the several notches or seats *6^b* at the opposite edges of the gripping-surfaces of the jaw *b⁵* are so disposed relatively to each other that they

provide, as it were, transverse seats at right angles or diagonally to the longitudinal axis of the gripping-jaw b^5 , as shown. The gripping-surface a^6 of the jaw a^5 is also made tapering toward the nose end thereof, and it is beveled at the sides, as clearly shown in Fig. 8, whereby to provide a gripping-face having a surface identical to the gripping-surface of the opposing jaw, so that in closing the jaw a^5 will come against the jaw b^5 between the flanges b^6 . The gripping-face of the jaw a^5 has arbitrarily arranged and transversely-disposed seats a^7 , which have such relation to the seats in the flanges b^6 of the opposing jaw that they form continuations of the said flange-seats. By reason of providing the side flanges with seats or notches, leaving the gripping-surfaces of the jaw b^5 smooth, and forming the seats in the upper gripping-surface only and having the said surface of such shape that when the jaw a^5 is closed it fits between the flanges b^6 , as shown, admits of readily gripping the different sizes of needles and for holding them at different angles with respect to the gripper-jaws without danger of breaking the needles at the gripping-point, particularly at the side extremities of the gripping-surfaces since those portions of the needle adjacent the side extremities of the gripping-surfaces are guided in the notches or seats in the flanges b^6 of the jaw b^5 , which limit excessive lateral strain on the said projecting portions of the needle, while permitting a lateral spring of the needle ends, it restricts the extent of such movement of the needle ends, and thus reduces the danger of breaking the needle to the minimum. To further reduce the danger of excessive clamping strain on the needle ends at the points where they extend from the opposing gripping-surface of the jaws $a^5 b^5$, the notches in the flange b^6 may be, and preferably are, slightly projected below the plane of the gripping-surfaces of the jaw b^5 , so that the needle will not be forced down tightly in the bottom of the seats or notches in the flanges b^6 , the main function of which is to provide against excessive bending

of the needle laterally at the points where the same projects from the opposite edges of the gripping-surfaces of the jaws.

My invention differentiates, so far as I know, from needle-holders heretofore provided in the peculiar cooperative arrangement of the two opposing gripping-jaws and particularly the manner in which one of the jaws is provided with a means for guiding the needle and for holding it against excessive lateral strain.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a needle-holder, the combination of a jaw having flanges at the opposite edges that extend the full length thereof, the said flanges having seats or notches which extend in a plane below the gripping-faces of the jaw, and an opposing jaw whose gripping-face is shaped to engage the other jaw at points between the flanges thereof only.

2. A needle-holder, which comprises in combination, a jaw having a smooth gripping-surface that extends longitudinally thereof, an upwardly-projecting flange at each side of the smooth gripping-surface, said flanges having needle-receiving notches, an opposing jaw having a gripping-surface shaped to oppose the smooth gripping-surface of the other jaw only and having transverse recesses that register with the needle-recesses in the flanges of the other jaw when the two jaws are closed substantially as shown and described.

3. In a needle-holder, the combination of a solid-faced gripping-jaw having notched flanges along its opposite edges the notches of which project below the solid face of the jaw, the said flanges extending the full length of the jaw, and an opposing jaw having serrated edges adapted to engage the solid face of its opposing jaw only.

HENRY CLAYTON.

Witnesses:

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