

C. T. MITCHELL.  
CLAMP.

APPLICATION FILED NOV. 23, 1907.

907,846.

Patented Dec. 29, 1908.

Fig. 1.

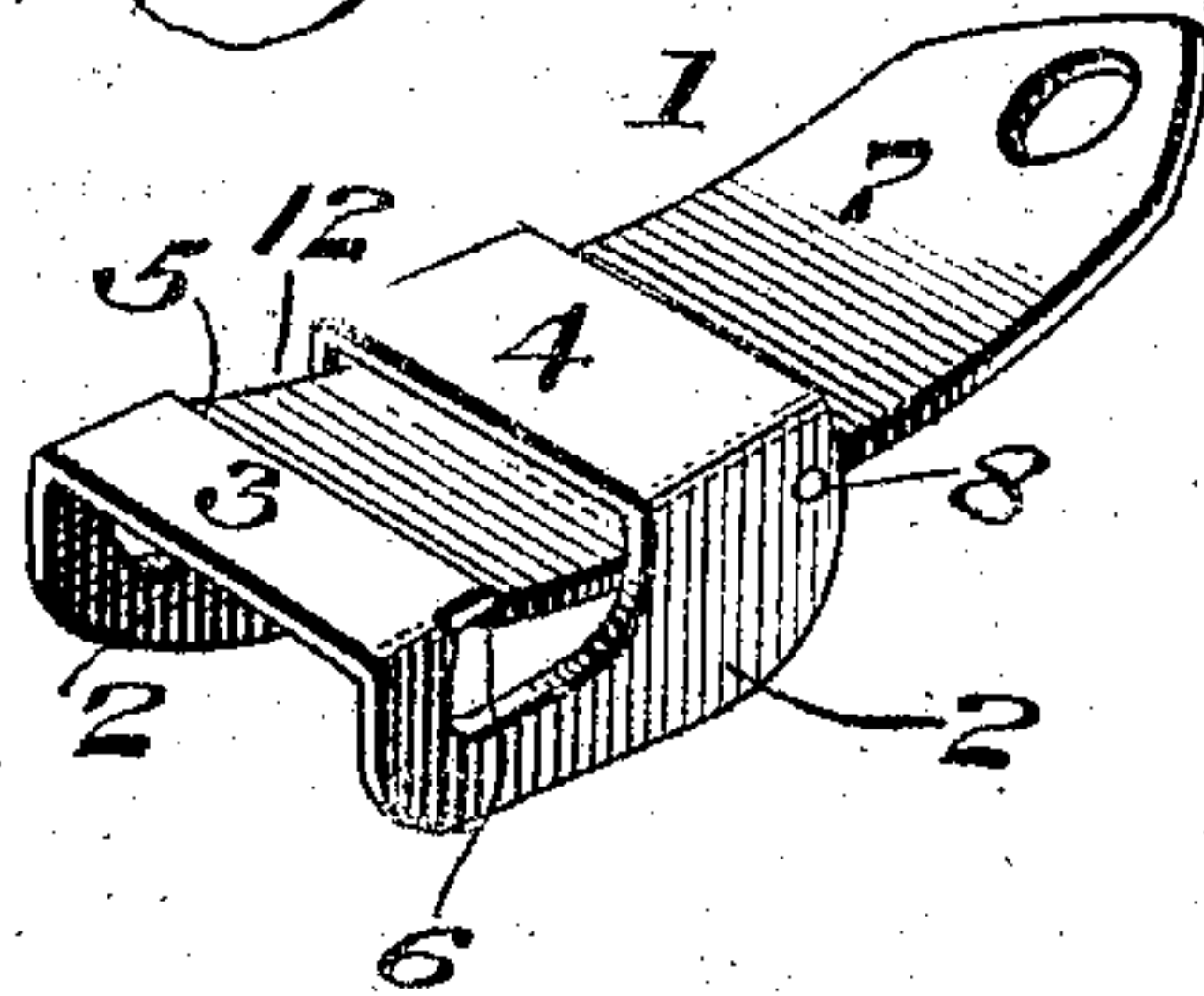


Fig. 2.

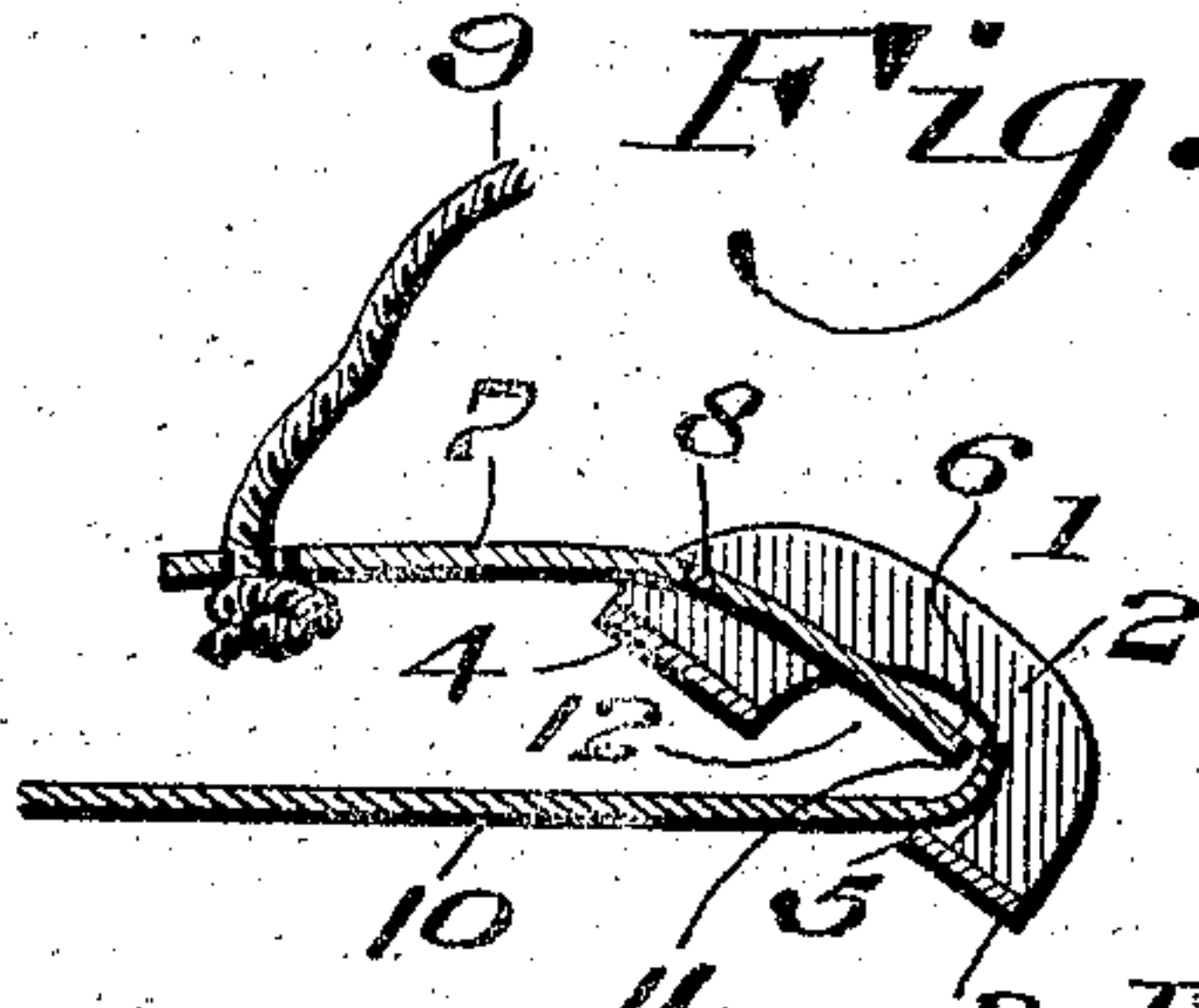


Fig. 3.

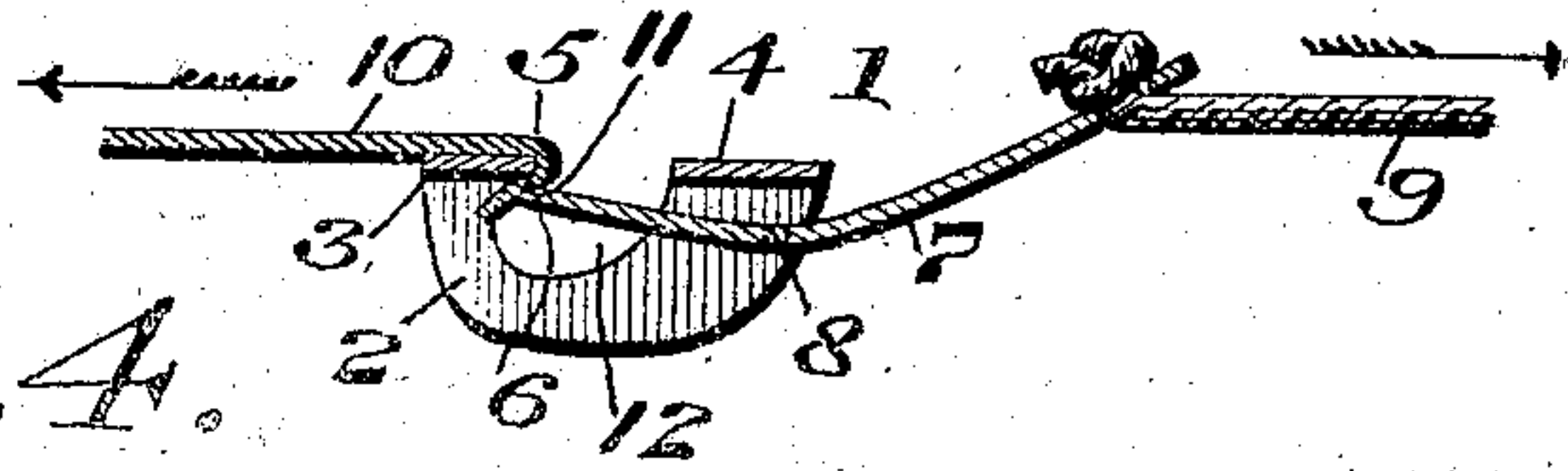


Fig. 4.

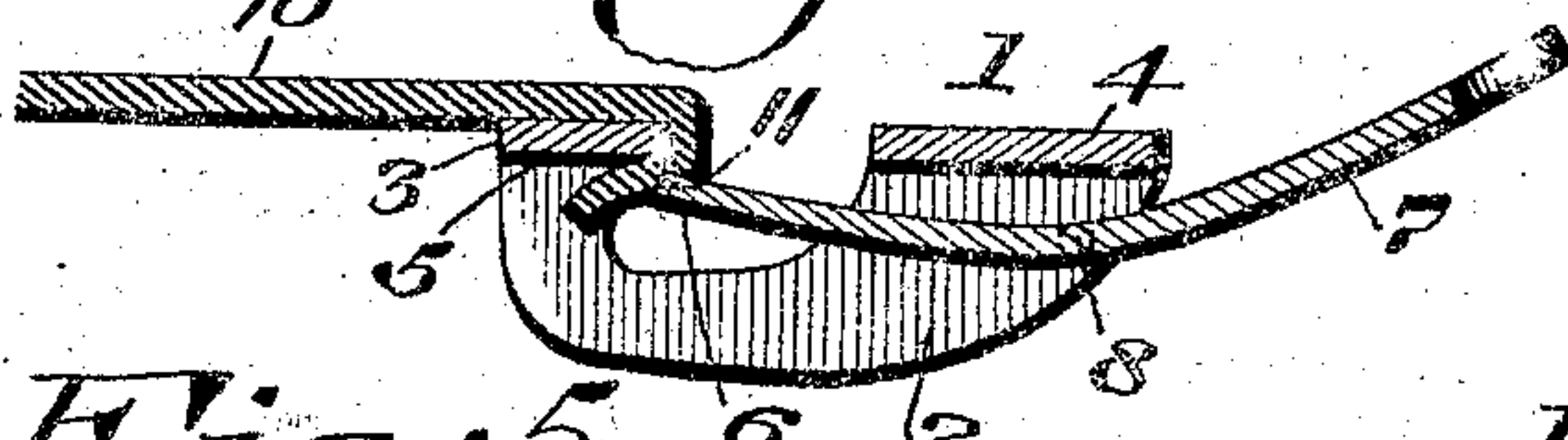


Fig. 5.

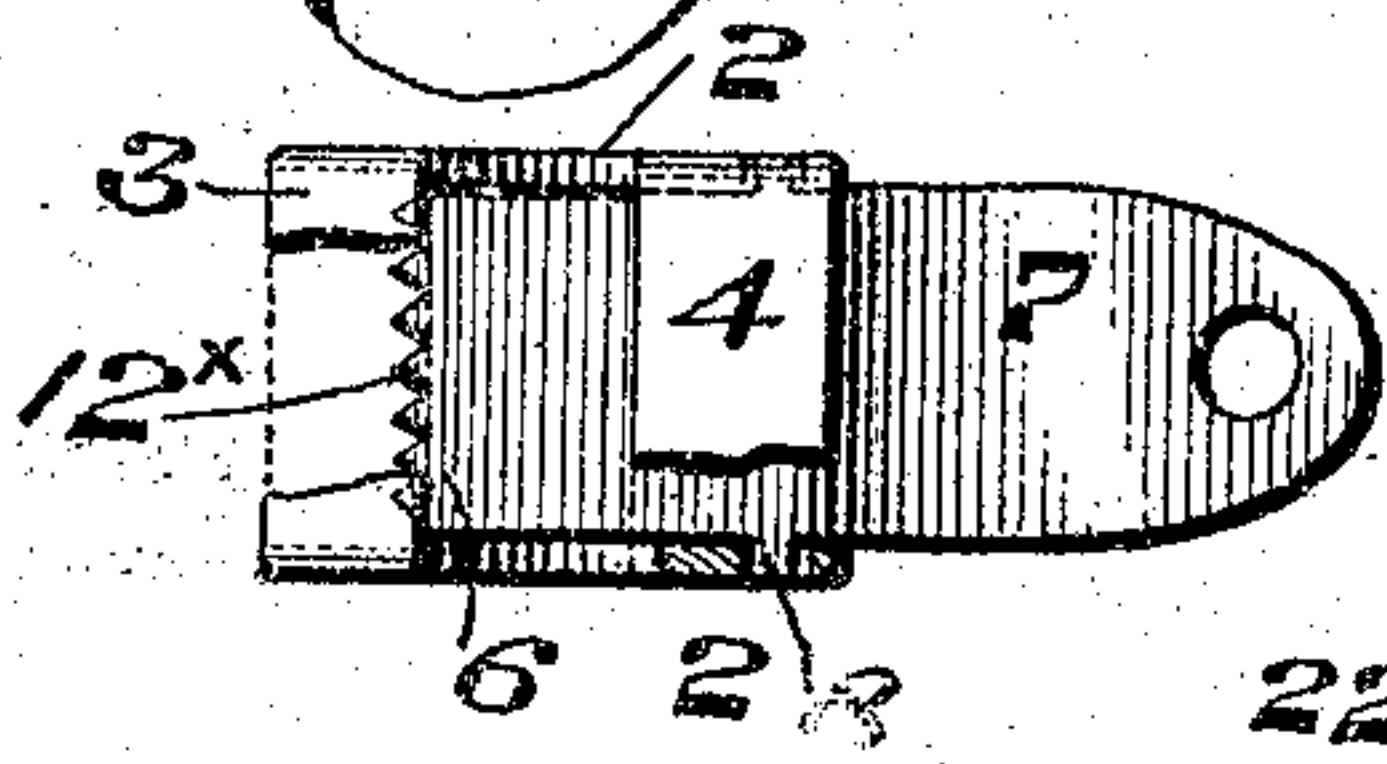


Fig. 6.

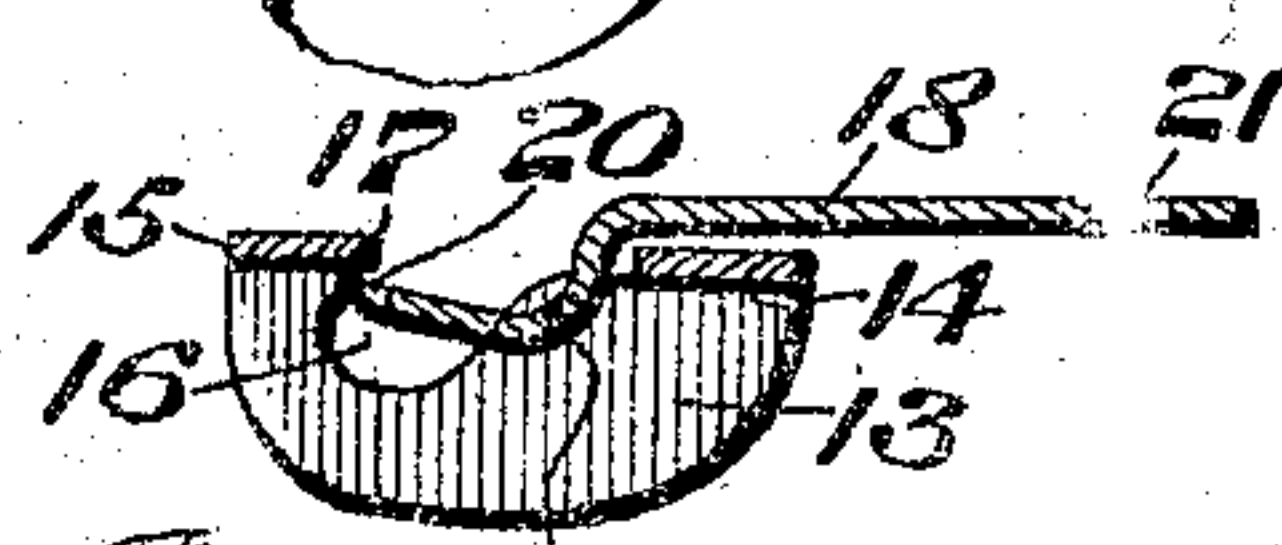


Fig. 7.

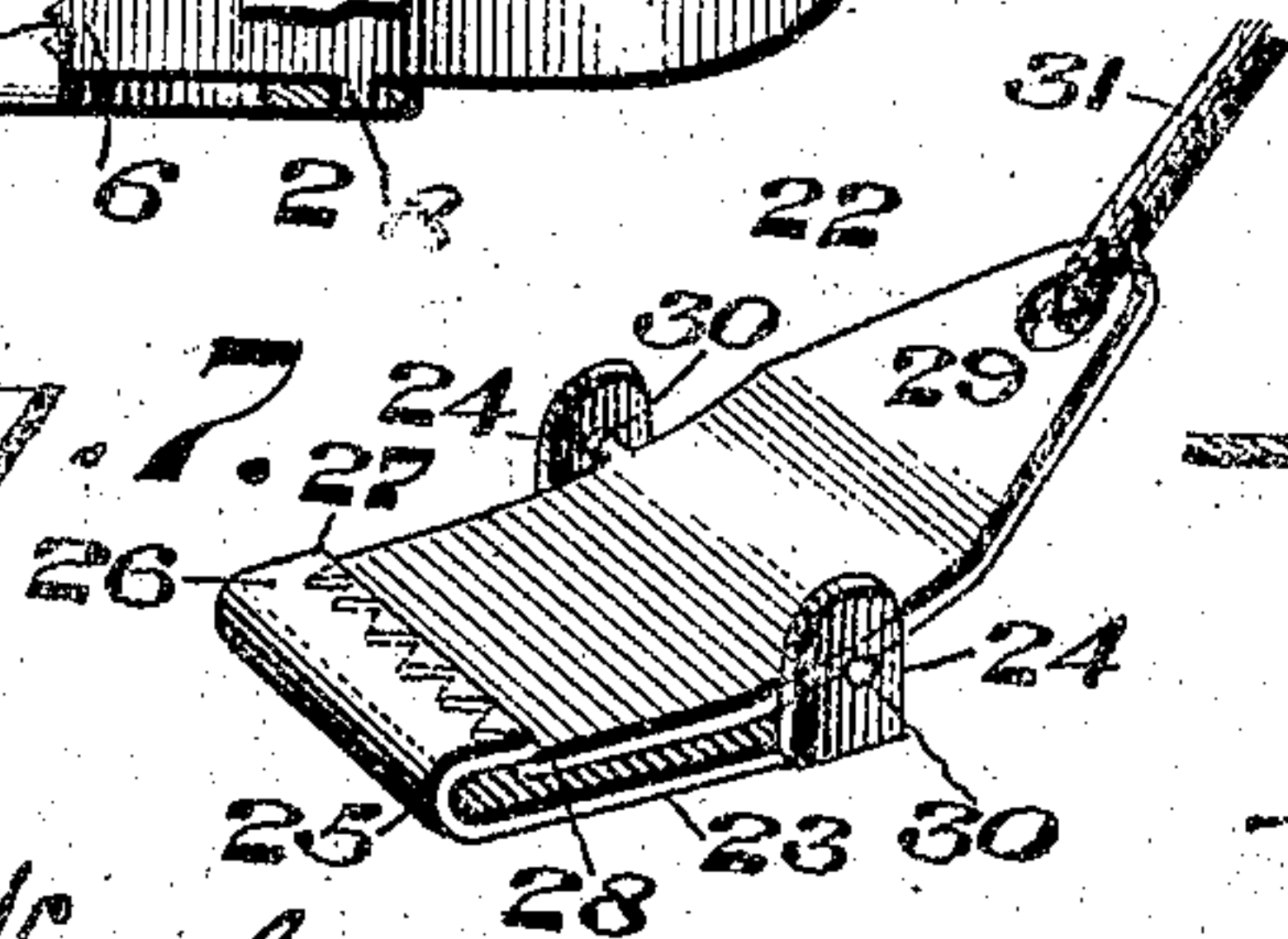
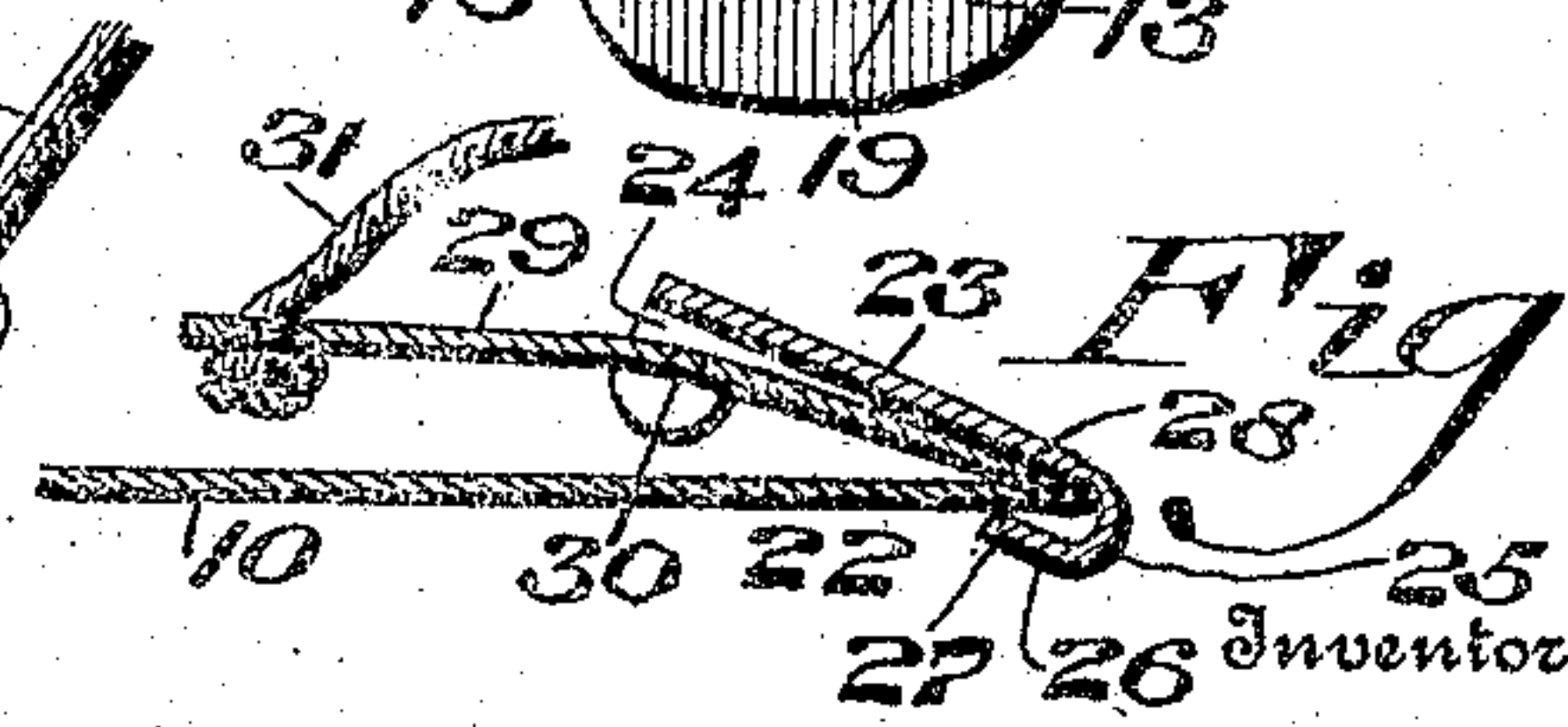


Fig. 8.



Witnesses  
P. F. Nagle  
L. H. Cowville.

Cleifton J. Mitchell.  
By  
Friedersheim & Graubauers  
Attorneys



# UNITED STATES PATENT OFFICE.

CLIFTON T. MITCHELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE GIRARD MANUFACTURING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF NEW JERSEY.

## CLAMP.

No. 907,846.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed November 23, 1907. Serial No. 403,485.

*To all whom it may concern:*

Be it known that I, CLIFTON T. MITCHELL, a citizen of the United States, residing in the city and county of Philadelphia, Pennsylvania, have invented a new and useful Clamp, of which the following is a specification.

My invention relates to a novel construction of a clamp or fastener and is adapted for stretching skins, hides, fabrics or other materials taut or for holding or suspending various materials or articles.

The invention further consists of novel features whereby when the device is used for stretching skins the entire operative mechanism is below the surface of the skins or hides so that in the operation of enameling or otherwise treating the skins, the workmen can work to the extreme edge of the skin without loss of time, as the clamp is of such construction as to offer no obstruction to free manipulation of every portion of the surface of the leather during the finishing treatment.

While I have shown and described my novel invention as being useful and applicable in leather factories for stretching hides, it is apparent that it may also be used for stretching fabrics or various materials or suspending articles and is itself simple in construction and may be cheaply manufactured and sold at a comparatively low cost, and is very durable when used for stretching leather so that my invention obviates the necessity of making holes in the same, as is required when the old finishing toggle or fastener is used. It will be further apparent that by my present invention I have simplified the construction heretofore employed, since my device consists of but two members which can be easily struck up from sheet metal and the arrangement of the parts is such that the upper line or edge of the movable jaw is adapted to move in a substantially vertical line towards the under surface of the upper or fixed jaw, whereby the material to be clamped is held between the angle or edge at the upper portion of the lower jaw and against the under surface of the upper or stationary jaw, the construction of said movable jaw being such that the pull of the fastening device is exerted directly thereon without passing through an eye or other portion of the body which carries or upon which the stationary jaw is formed.

For the purpose of illustrating my inven-

tion I have shown the preferred embodiments of clamps which I, in practice, employ, as these embodiments best illustrate the principle of my invention, although it is obvious that the principal instrumentalities of which my invention consists can be variously arranged and organized and in the accompanying drawings I have shown certain embodiments thereof which I have found in practice to give satisfactory and reliable results, although it is to be understood that my invention is not limited to this specific arrangement and organization of these instrumentalities.

Figure 1 represents a perspective view of a novel construction of a clamp embodying my invention. Fig. 2 represents a sectional view of the clamp inverted from the position seen in Fig. 1, showing the position of the parts assembled in the act of gripping the leather or other material to be stretched. Fig. 3 represents a sectional view of the clamp showing the jaws in closed position in the act of gripping the material to be stretched. Fig. 4 represents an enlarged view of the device seen in Fig. 3, showing specially the manner in which the edge of the movable lower jaw moves towards or against the under side of the upper jaw in the act of gripping the material to be stretched. Fig. 5 represents a plan view of the device seen in Fig. 1, showing the movable jaw as being provided with serrations or teeth. Fig. 6 represents a sectional view of another embodiment of my invention. Fig. 7 represents a perspective view of another embodiment of my invention. Fig. 8 represents a sectional view of Fig. 7, showing the manner of inserting the leather or other material to be stretched, in the sides between the jaws of the clamp.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings: 1 designates my novel clamp, consisting of the body, having the sides 2, which are joined by the transverse, preferably integral, top members 3 and 4, said member 3 having its rear portion 5 projecting or extended inwardly for a short distance, so as to form a stationary jaw whose lower portion is adapted to co-act with the upper portion or edge 11 of the movable jaw 6, which forms the inner terminal of the lever or arm 7, which is pivoted at 8 in the sides 2 above referred to, it being



noticed that the point of pivotal connection is preferably in a line or plane below the point of contact of the jaws 5 and 6, whereby the leather 10 is stretched to the desired extent. I desire to also call attention to the contour of the arm or lever 7, since the same is preferably curved or has the contour of an obtuse angle, whereby the line of contact between the co-acting jaws 5 and 6 is above the pivotal point 8, as is also the preferred point of attachment of the end of the connection 9.

I desire to call especial attention to the manner in which the edge 11 of the jaw 6 advances towards the under wall of the stationary jaw 5 and the material to be stretched, as will be understood from the enlarged view seen in Fig. 4, when a pull is imparted upon the connection 9, it being understood that the sides 2 are recessed as indicated at 12 so as to enable the edge of the material to be stretched to be readily inserted into position between the jaws 5 and 6.

The operation is as follows: The clamp is preferably first inverted into substantially the position seen in Fig. 2 by the operator merely taking hold of the outer extremity of the lever 7, whereupon the forward top piece 3 and its adjuncts at once drop into the position seen in Fig. 2 and the jaws 5 and 6 are opened. The edge of the leather or other material to be stretched is inserted into the recesses 12, so that it passes under the jaw 5, so when a pull is imparted to the connection 9, the edge 11 of the jaw 6 moves toward the under side of the jaw 5, so that said edge 11 is forcibly indented into the material 10, as indicated in Fig. 4 at 11, and a further pull on the connections 9 will cause the material to be held with still greater force against the under side of said jaw 5, and the greater the force or pull which is applied to the connection 9, the tighter will be the grip or "bite" of the jaws 5 and 6, as will be understood from Figs. 3 and 4.

In the construction seen in Fig. 5, the clamp is constructed substantially the same in all respects, as before described with respect to Figs. 1 to 4 inclusive, with the exception that in this embodiment I provide the terminal of the jaw 6 with the serrations or teeth 12<sup>x</sup> which may be employed or dispensed with according to requirements.

It will be apparent that in all of the devices seen in Figs. 1 to 5 inclusive, the movable jaw 6 is confined and guided to the necessary extent between the sides 2 and since the device consists of only two pieces of sheet metal, it can be very cheaply manufactured in large quantities.

I desire to emphasize the structural features, whereby my present device as seen in Figs. 5 to 7 is differentiated from other devices by reason of the upper sharp edge 11 of the jaw 6 being so located or correlated with

the under side of the jaw 5 that said edge 11 has an upward movement towards the material to be clamped and towards said jaw 5 in substantially a vertical line, as will be understood from Fig. 4, so that when the clamp is inverted from the position seen in Fig. 2 to the positions seen in Figs. 3 and 4 by the pull on the connection 9, the leather or other material 10 will be gripped between the jaws 5 and 6 with greater tightness than in any other device with which I am familiar and the pull upon the connection 9 is utilized to a maximum extent both to grip and to stretch the material 10.

In the construction seen in Fig. 6 the sides 13 are constructed substantially as seen in Fig. 1 and provided with the transverse top pieces 14 and 15 which correspond to the parts 3 and 4 seen in Figs. 1 to 5 inclusive. I also provide the sides with the recesses 16 which correspond to the recesses 12 as described and the stationary jaw 17 in said Fig. 6 also corresponds substantially to the stationary jaw 5 already referred to. The principal difference in said Fig. 6 is in the construction and manner of pivoting the movable arm or lever 18, which has its pivotal point 19 located in advance of the cross piece 14, said lever 18 terminating in the movable jaw 20, whose construction will be apparent from Fig. 6, said jaw being serrated as shown in Fig. 5, if desired, or being employed without serrations, according to requirements. The manner of gripping and stretching the material will be clearly understood from the description already given in respect to Figs. 2 and 4 and I deem it unnecessary to describe the same in further detail, it however, being understood that a suitable connection is to be inserted in the eye 21 which in operation and function corresponds to the connection 9 already described.

In the construction seen in Figs. 7 and 8 I have shown another embodiment of my invention wherein 22 designates a clamp, the same consisting of the base portion 23 having the ears or lugs 24 at one extremity while the opposite extremity 25 has the backwardly deflected portion 26 which terminates in the stationary jaw 27, juxtaposed to which is the movable jaw 28 which forms the terminal of the lever 29, which is pivoted at 30 in the ears 24, a suitable fastening 31 being secured to the free end of the lever 29, which latter is preferably curved or given the shape of an obtuse angle, as will be understood from said Figs. 7 and 8, whereby the pull upon the connection 31 will cause the leather 10 to be more tightly gripped and stretched according as the force or pull on cord 31, increases. The manner of applying the clamp seen in Figs. 7 and 8 to the leather will be understood from Fig. 8, the operator inverting the clamp and holding the lever 29 in one hand whereupon the base or body 23 will drop by



gravity until it strikes the jaw 28. The leather 10 is then inserted in position between the jaws 28 and 27 and a pull being exerted upon the connection 31 the clamp will naturally assume the position seen in Fig. 7 and the leather or other material to be stretched will be gripped between the jaws with great firmness and tightness, as will be apparent to those skilled in the art. In the construction seen in Figs. 7 and 8 it will be apparent that the material to be stretched is held between the juxtaposed portions of the stationary and movable jaws in substantially the manner seen in Fig. 4, whereby the material 10 can be stretched to the fullest extent and the tighter the pull on the connection the more tightly will the material be gripped between the jaws and stretched.

It will be apparent to those skilled in the art that various changes in the form, proportion, and the minor details of construction within the scope of the invention may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

I desire to call special attention to the feature in my invention which is in practice of great importance and that is that the clamp, as will be understood from Figs. 2 and 8, can be operated in one hand of the user, since it is only necessary for the operator to grasp the lever 7 or 29 in one hand and to insert the leather 10 in position, as indicated in said Figs. 2 and 8, whereupon by turning the lever and the clamp to the right into the position seen in Figs. 4 and 7, respectively, the leather will be firmly gripped without requiring further attention on the part of the operator. I desire also to call attention to the fact that in my present invention the pull or force of the connection 9 or 31 is exerted directly upon the lever 7 or 29 or its equivalent so that there is no necessity for passing said connection through an eye or through a portion of the stationary jaw or its adjuncts, as has heretofore been done in devices of this character with which I am familiar.

It will be apparent that in my invention I provide two relatively movable jaws, one of which is provided with a top member adapted to permit the insertion and gripping of flat material, and having side members in which the other of said jaws is pivoted.

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

1. A clamp consisting of a stationary jaw having downwardly turned sides, cut away at the top and sides to allow a portion of the top to form a rearwardly projecting gripping edge, and a movable jaw pivoted to the sides of the fixed jaw near the top thereof and to the rear of the rearward projection thereof causing the gripping edges of the jaws to approach substantially within a plane perpendicular to the plane of the top of the fixed jaw and beneath said top.

2. A clamp consisting of a stationary jaw having a top member provided with a rearwardly projecting portion and having its sides cut away below the top, to permit the insertion and gripping of flat material, a movable jaw pivoted to said stationary jaw, the pivot being located slightly below the plane of the stationary top member and to one side of the jaw thereof, so that the top of the movable jaw approaches the underside of the fixed jaw approximately perpendicularly to said plane, whereby the material is gripped between the juxtaposed angular portions of said jaws.

3. A clamp consisting of a stationary jaw having a top member provided with a rearwardly projecting portion and having its sides cut away below the top to permit the insertion and gripping of flat material, a lever of substantially the shape of an obtuse angle having its extremity serving as a movable jaw and pivoted to said stationary jaw, the edge of the movable jaw in its closing movement meeting the edge of the stationary jaw, and pivoted, so as to approach perpendicularly to the plane of said stationary jaw, the pivot of said movable jaw located at a point slightly below the bight of the jaws, and out of alignment with a plane vertical to said stationary jaw, and the outer terminals of the movable jaw being extended beyond the clamp body and adapted to have the tension device attached directly thereto, whereby said tension device exerts its pull on said clamp through said movable jaw.

CLIFTON T. MITCHELL.

Witnesses:

E. HAYWARD FAIRBANKS,  
C. D. McVAY.