R. N. JOHNSON.

PINCERS.

APPLICATION FILED MAR. 14, 1912.

1,067,033.

Patented July 8, 1913.

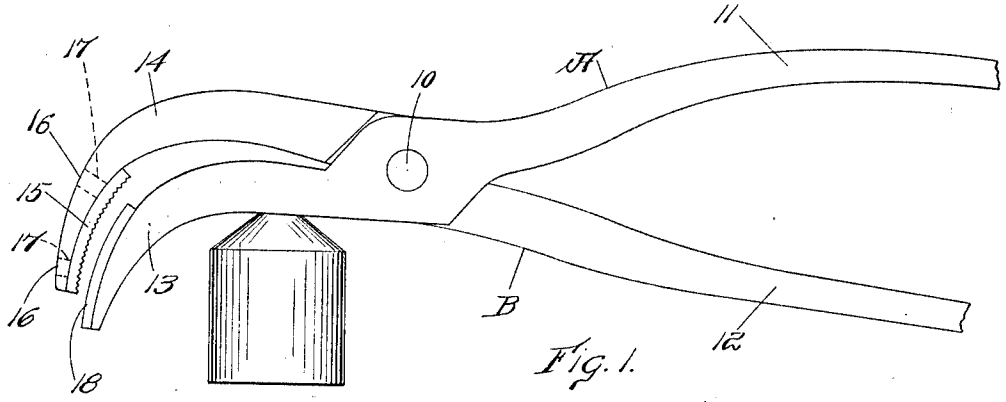


Fig. 1.

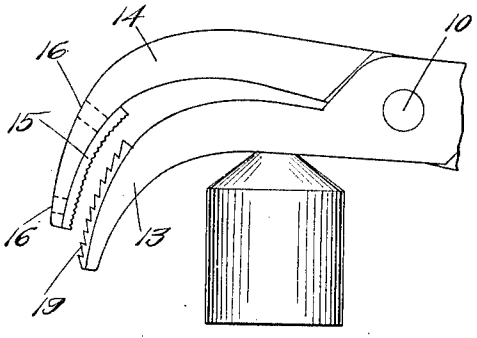


Fig. 2.

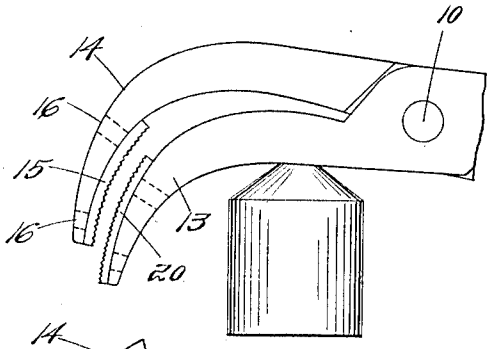


Fig. 3.

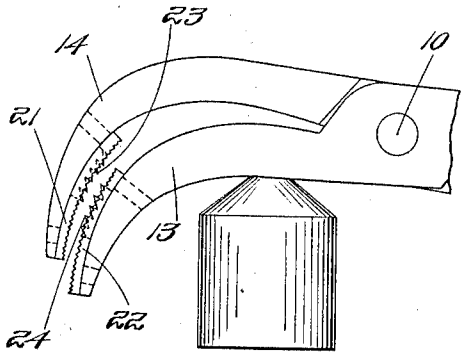


Fig. 4.

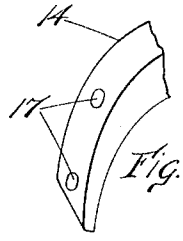


Fig. 7.

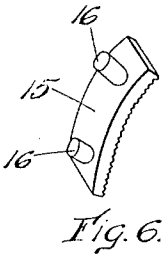


Fig. 6.

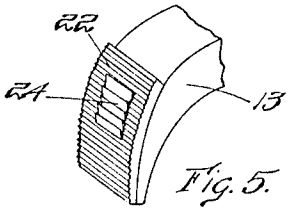


Fig. 5.

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UNITED STATES PATENT OFFICE.

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PINCERS.

1,067,033. Specification of Letters Patent. Patented July 8, 1913.

Application filed March 14, 1912. Serial No. 683,880.

To all whom it may concern:

Be it known that I, ROBERT N. JOHNSON, citizen of the United States, residing at Brockton, county of Plymouth, State of Massachusetts, have invented a certain new and useful Improvement in Pincers, of which the following is a specification, reference being had therein to the accompanying drawings.

Lasting pincers such as are employed in the manufacture of boots and shoes are provided with jaws, the engaging portions of which are usually roughened or serrated in order to enable the jaws to bite effectively upon the leather, that is grasped between the jaws so as to prevent the jaws from slipping upon the leather during the application of force to pull the shank portion of the upper over the bottom of the last. The gripping faces of the jaws have always heretofore so far as I am aware been formed of metal and in order to prevent the jaws from slipping it is necessary that these grasping surfaces should be roughened or serrated or formed with teeth as previously mentioned. The teeth or the serrations rapidly wear away so that the teeth have to be sharpened or the jaws renewed. Sometimes the jaws are formed of separate blocks of steel which are welded to the levers so that they can be renewed but even these are expensive. In any event whether the metal jaws are made separate or integral with the levers the metal teeth frequently injure the leather by cutting or scratching it.

The object of the present invention is to form the gripping portions of the jaws of some material other than metal which will be of a resilient character yet firmly grip the leather without slipping during the operation of the pincers in drawing the leather over the last and yet which will on account of the resiliency not cut into the surface of the leather. The need of such a pincers as I have described is especially felt at the present time because much of the leather used in the manufacture of shoes seems to be harder than it was formerly and therefore more strain is put upon the pincers.

The invention will be fully understood from the following description taken in connection with the accompanying drawings, and the novel features will be pointed out and clearly defined in the claims at the close of the specification.

In the drawings,—Figure 1 is a side elevation of a pair of pincers embodying the invention showing the jaws partly open, the upper jaw being provided with a facing of rubber or other resilient material and the lower jaw being formed of metal with a smooth face. Fig. 2 is a side elevation, the handles being broken away, showing a modification of the invention in which the lower jaw is made of metal but formed with teeth, the upper jaw having the rubber facing. Fig. 3 is a side elevation broken away of a modification showing rubber faces for both jaws. Fig. 4 is a side elevation broken away showing another modification in which the rubber facings are formed with slots through which metal teeth project. Fig. 5 is a detail perspective view of the lower jaw shown in Fig. 4 having the slotted rubber facing in combination with metal teeth. Fig. 6 is a perspective detail view of the rubber facing shown in Figs. 1, 2 and 3 and showing the stud projections for connecting it with the lever. Fig. 7 is a detail perspective, partly broken away, of the upper jaw, showing the holes to receive the rubber studs.

Referring now to the drawings and more particularly to Fig. 1, A and B represent the two members respectively of the pincers pivoted together at 10 and having respectively the lever or handle portions 11, 12 and the curved jaw portions 13 and 14. The upper jaw is provided with a detachable gripping face of flexible material, preferably rubber, which in the form shown in Fig. 1 consists of a block 15 of rubber which is formed with studs 16 of rubber integral therewith which fit snugly in the holes 17 in the jaw member 14. On account of the resiliency of the rubber the studs 16 may be made a little larger than the hole, then by forcing them into the holes the expansion of the rubber studs will bind them within the holes sufficiently to retain the rubber blocks securely in place without additional fastening means. If, however, it be preferred a little cement might be used to more securely hold the rubber facing or block to the metal jaw. Preferably the gripping face of the rubber block is serrated or formed with teeth. The lower jaw member

13 may be provided with a facing of metal welded or otherwise secured thereto which in the form shown in Fig. 1 is smooth faced. On account of the resilient character of the serrations in the rubber facing thereby increasing the friction, there will for ordinary uses be sufficient grip on the material when the two jaws are closed onto the leather in operation if the metal jaw 18 is smooth faced as described. By making the metal jaw smooth faced there is avoided the necessity for sharpening or renewing the metal jaws as frequently as if it were formed with teeth. There is also less danger of cutting the leather. The rubber face is preferably placed on the upper jaw rather than on the lower jaw because the upper jaw is the one which usually comes into engagement with the outer or finished side of the leather in the process of lasting.

If additional check against the possibilty of slipping is required the lower jaw may have a serrated face 19 as shown in Fig. 2 in which the lower face is still of metal.

As a still further guard against any possible tearing or cutting of the leather the gripping faces of both jaws may be formed of rubber as shown in Fig. 3 in which the facing 20 of the lower jaw is of rubber attached to the lower jaw 13 by studs passing through holes in the jaw in the same manner as the rubber facing 15 is secured to the upper jaw member 14. A narrow portion along the edge of the leather which is grasped by the pincers and drawn over the last is usually covered up in the finished shoe and that portion of the upper is grasped farthest back in the throat of the jaws while the forward portion of the jaws reach farther up onto portions of the upper which will be exposed in the finished shoe. For this reason it is not necessary to be quite so particular to guard against roughing or marring that portion of the upper which will be so concealed.

It is found that in working with some kinds of leather a combination of rubber and metal in the grasping face of the jaw is desirable and in that case there may be metal teeth down in the throat of the jaw while the outer end is wholly of rubber. Such a form of construction is shown in Figs. 4 and 5 in which the jaws are each provided with a rubber facing 21, 22, respectively and the metal jaws 13, 14, are provided respectively with teeth 23, 24, which extend over a portion of the surface back in the throat and which pass through a slot in the rubber plates 21, 22, respectively. The slot in the rubber plate 22 is formed of proper shape for the teeth 24 of the metal plate to extend through the slot and the teeth are of sufficient height so as to project slightly beyond the surface of the rubber plate 22. In a similar manner the metal teeth of the upper jaw are fitted in relation to the rubber plate of that jaw. The metal teeth it will be noticed are all toward the rear end of the rubber plate, that is well down in the throat of the jaws while the front part of the gripping face is entirely of rubber so that the portion of the upper which is engaged by the metal teeth is that portion which will be covered in the finished shoe as above described.

It is obvious that in all the various forms of construction either one or both of the gripping faces may be made of rubber and that when the metal gripping face is made of metal it may be either smooth or rough and that the gripping member which contains the rubber plate may have its gripping face made either entirely or partially of rubber and it is intended herein to not limit the invention to the use of rubber gripping jaws, either on one face alone or on both faces or to limit it to the use of a gripping face which is wholly of rubber but so far as I am aware I am the first to provide lasting pincers with a gripping face on either one or both of the jaws formed either wholly or partially of rubber or other resilient material other than metal.

What I claim is:—

1. A lasting tool comprising two pivotally connected members having gripping jaws, at least one of said jaws being provided with a serrated gripping face partly of rubber and partly of metal, the metal portion being serrated and surrounded by the rubber portion which is also serrated.

2. A lasting tool comprising two pivotally connected members having gripping jaws, at least one of said jaws being provided with a serrated gripping face partly of rubber and partly of metal, the metal portion being serrated and surrounded by the rubber portion which is also serrated, the teeth of the metal portion projecting higher than the teeth of the rubber portion.

In testimony whereof I affix my signature, in presence of two witnesses.

ROBERT N. JOHNSON.

Witnesses:

JOHN P. BURNS,

E. J. O'BRIEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."