No. 797,576. PATENTED AUG. 22, 1905.

G. HAVELL.

NAIL CLIPPER.

APPLICATION FILED OCT. 3, 1904.

Fig. 1.

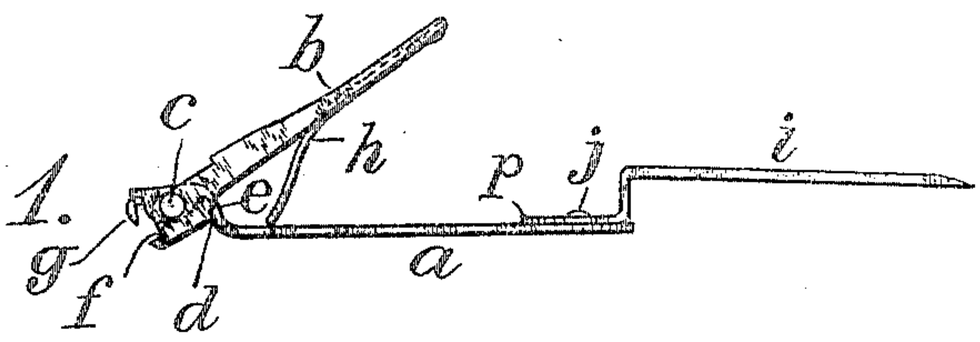


Fig. 2.

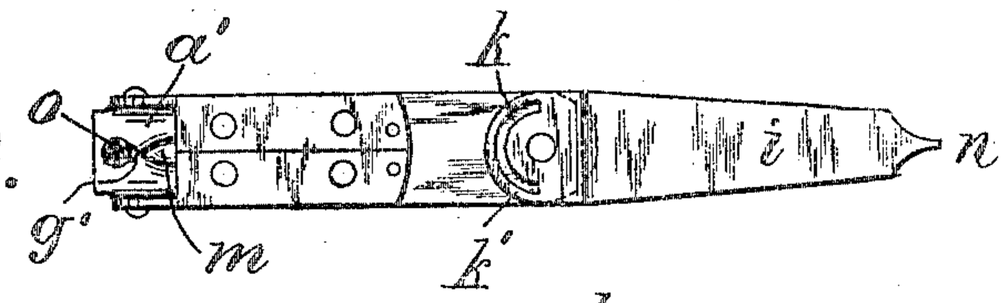


Fig. 3.

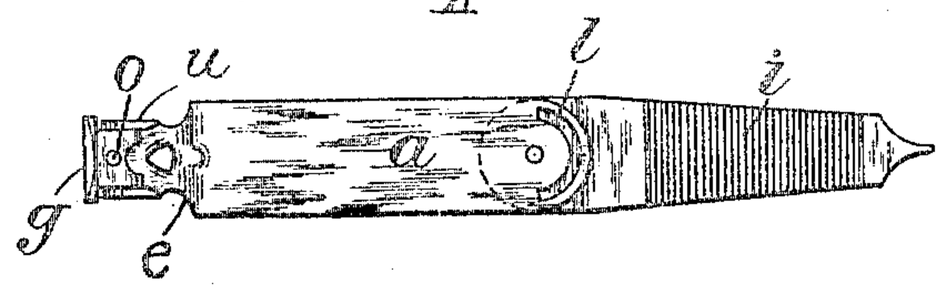


Fig. 4.

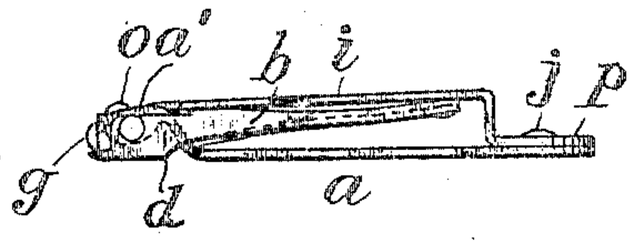


Fig. 5.

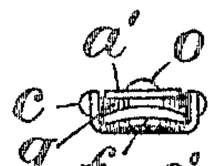


Fig. 9.

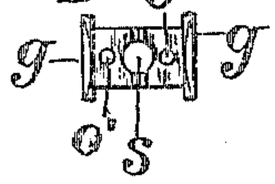


Fig. 6.

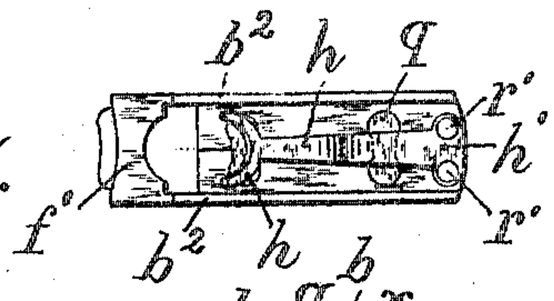


Fig. 10.

Fig. 7.

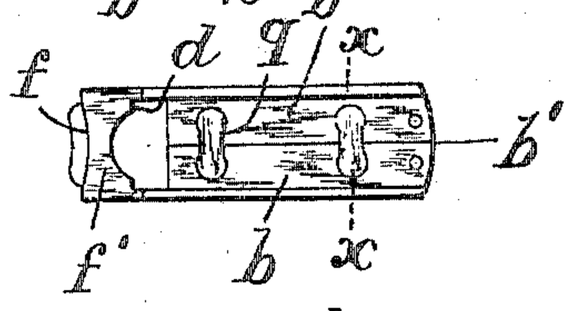


Fig. 11.

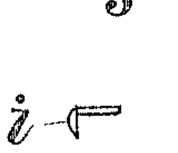


Fig. 8.

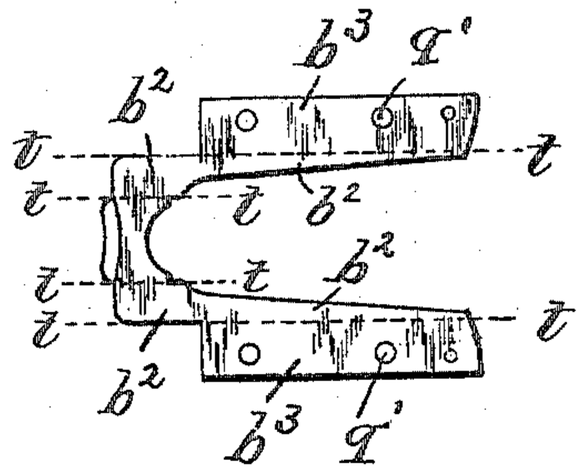
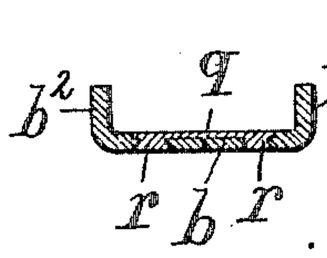


Fig. 12.



Attest:
L. Lee.
Arthur F. Beaton.

Inventor.
George Havell, per
Thomas S. Crane, atty.

UNITED STATES PATENT OFFICE.

GEORGE HAVELL, OF NEWARK, NEW JERSEY, ASSIGNOR TO LOUIS C. LANGIE, OF ROCHESTER, NEW YORK.

NAIL-CLIPPER.

No. 797,576. Specification of Letters Patent. Patented Aug. 22, 1905.

Application filed October 3, 1904. Serial No. 226,956.

To all whom it may concern:

Be it known that I, GEORGE HAVELL, a citizen of the United States, whose residence and post-office address is 30 Mount Prospect avenue, Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Nail-Clippers, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The present invention relates to various constructive features of the nail-clipper by which the manufacture of the parts may be facilitated and the operation of the nail-clipper improved in various respects.

The novel features will be understood from the following description and particularly pointed out in the claims.

In the drawings, Figure 1 is a side view of the clipper open in readiness for use. Fig. 2 is a plan of the same parts viewed from the upper side. Fig. 3 is a plan of the bed and file viewed from the lower side. Fig. 4 is an edge view of the clipper closed to put in the pocket. Fig. 5 shows the front end of the clipper with the jaws open sufficiently to cut. Fig. 6 shows the under side of the movable lever displaying the spring and the rivet tie-plates. Fig. 7 shows an under view of the same without the spring. Fig. 8 is a plan of the blank for making the same lever. Fig. 9 is a plan and Fig. 10 an edge view of two of the cutters as they are originally formed in one piece for convenience of manufacture. Fig. 11 is an edge view of one of the cutters broken from the other in readiness for application to the lever, as indicated in Fig. 3. Fig. 12 is a cross-section taken on line $x\,x$ in Fig. 7 and greatly enlarged to show the flush tie-plate q, with its rivets r.

The bed-plate a is formed flat with an offset e near the front end and a flat seat a', having ears u (see Fig. 3) to receive a rivet c, by which the thumb-lever b is pivoted thereto. The thumb-lever is provided below and beyond the rivet with a cutting-seat f, arched upwardly, as shown in Fig. 5, and a detachable cutter g is secured upon the under side of the seat a' by a screw o inserted in the slot g' (shown in Fig. 2) beneath the head of the screw. The slot permits the adjustment of the cutter, which is formed with a flat foot fitted closely between the ears u, as shown in Fig. 3. The close fitting of this foot between the lugs u is essential to hold the cutting edge firm and steady upon its lever member and to prevent lateral movement or twisting of the cutter with reference to the screw or fastening o. The bed a and the thumb-lever b form two lever members, one of which carries a cutting member consisting of the seat f and the other of which has the longitudinal surface upon which the foot of the cutter i is adjustably and separably fastened. The foot is provided with a screw-threaded hole o', as shown in Fig. 9, where two of the cutters are represented formed of one piece to facilitate manufacture. The cutters thus made are finished and hardened, and their separation is facilitated by a hole s at the middle of the piece and a notch s' across the middle of the foot-piece, by which the two cutters are readily broken apart after they are hardened and ground.

Only one cutter is used in the clipper, such cutter pressing against the cutting-seat f when the lever is pressed downward, as shown in Fig. 4. Fig. 5 shows the cutter elevated above the seat to introduce the finger-nail, as in Fig. 1. A locking-arm i is joined by an offset foot p to the rear end of the bed a by a rivet j, the foot being slotted near its edge to form an elastic joint, so as to hold the locking-arm firmly when adjusted in the open position (shown in Figs. 1, 2, and 3) or in the closed position. (Shown in Fig. 4.) The foot p is formed with a curved slot k, and the flange k', which is jointed to the foot at its opposite ends, is before the foot is riveted upon the bed bent slightly downward, so as to press elastically upon the bed and form a friction-joint, which holds the file firmly wherever it is set. In Fig. 3 the rear end of the bed is shown formed with a similar curved slot l, the flange outside of which may be bent toward the foot p for the same purpose. The wear or loosening of the rivet does not with such construction operate at all to loosen the joint. The locking-arm is pivoted to one of the members (the bed-plate a) and has a bearing against the outer side of the other member, (the thumb-lever b.) The joint between the locking-arm and the member to which it is attached has two friction-surfaces, of which one is a spring-flange formed of a slot near the edge of one of the friction-surfaces and

adapted to bear against the other friction-surface.

The lever *b* is made, as shown in Fig. 7, with a cross-plate *f'* at its forward end upon which the cutting-seat *f* is formed, and to shape such lever from one piece of sheet metal the blank shown in Fig. 8 is used, with wings b^3 at its opposite sides, which when bent upon the lines *t t* give the body of the lever a hollow box form, which is shown inverted in Fig. 12, with side flanges b^2. The upper side of the lever, to which the fingers are applied when using the clipper, is formed of the flanges upon the outer sides of the wings b^3, such flanges being lettered *b* in Fig. 7, with their extreme edges in contact along the middle line of the lever. To hold such edges closely together, tie-plates *q* are applied to the under side of the lever across the joint and studs *r* upon the ends of the tie-plate are projected through rivet-holes *q'* in the lever. (See Figs. 8 and 12.) When the studs are fitted in the holes, the tie-plates are forced strongly against the metal of the lever, embedding them in its substance, as shown in Fig. 12, the studs being at the same time headed to form flush rivets, as shown in the same figure. The spring *h* for raising the lever is formed with a cross-bar *h'* upon its foot, which is extended across the rear end of the joint in the center of the lever and secured to the flanges at opposite sides of such joint by rivets *r'*. The spring extends from the rear end of the lever quite close to the offset *e* upon the bed and is formed with a forked end, as shown in Fig. 6, to press upon the bed at two points, and the cross-plate *f'* upon the lever *b* is formed, as shown in Fig. 7, with shoulders *d* to contact with the edges of the offset *e* upon the bed to check the lever at a proper point when pressed open by the spring.

The bed and the lever above mentioned constitute two pivoted operating members that are actuated laterally toward and from each other at each operation of the device.

The small wire springs often used in jointed nail-clippers lose their strength and resilience; but the sheet-metal spring shown herein, which is forked at its free end to get a broad bearing upon the bed, is of such length that it operates with great elasticity and is not liable to become weaker by use. The foot *h'* of the spring being formed as a cross-bar is also widened, as well as the forked end.

The rear end of the seat *a'* is formed with a central dent or depression *m*, (shown in Fig. 2,) adapted to receive a point *n*, formed for a nail-cleaner upon the end of the locking-arm or extension-lever, and such point serves to lock the arm or lever in its closed position. (Shown in Fig. 4.) The offset of the arm or lever, by which its foot *p* is attached, is made of suitable height to embrace the lever *b* beneath the arm or lever when the lever is closed, and the file thus operates to hold the lever closed in opposition to the spring *h* when the device is not in use.

All parts of the device are readily made by stamping from sheet metal and are designed to wear well and retain their efficiency.

From the above description it will be seen that the invention embraces a locking-arm *i*, which is also an extension and in one position holds the member *b* of the clipper in close relation to the other member *a*, but when not holding the two members in the close relation it acts as an extension of one of them. Further, the spring-joint is employed between the locking-arm and one of said members, consisting of a flange or bearing-surface having a slot near its edge, and, further, that the cutter *g* is attached to the longitudinal surface upon one of the operating or lever members, whereby an adjustment of the cutter is obtainable with reference to the cutting-seat of the other member and that the cutting edge is opposed to said cutting-seat and is set at an angle to the body or foot of said cutter. By means of the screw *o* the cutter is thus fastened both adjustably and separably to the clipper member.

What is claimed herein is—

1. In a nail-clipper the combination of a bed *a* having a seat *a'*, with lugs *u* on each side of the seat, and the adjustable cutter *g* secured on the seat between the lugs, with the lever member *b* crossing the first member and having the flanges b^2 pivoted to the lugs *u*, and provided with a cutter member for coöperating with the adjustable cutter.

2. In a nail-clipper, the combination of a bed *a* having a seat *a'* thereon with lugs *u* on each side of the seat, and a slot *g'* in the seat, the adjustable cutter *g* having a foot fitted closely between the lugs *u*, and secured adjustably to the seat by a screw *o* passing through said slot, with the lever member *b* provided with the cutter member *f*, and side flanges pivoted to the lugs *u*.

3. The nail-clipper having flat bed *a* with offset *e*, seat *a'* having lugs *u* and the cutter *g* secured adjustably thereon, in combination with the lever *b* having cross-plate *f'* provided with cutting-seat *f*, and having the plate *b* with side flanges b^2 pivoted to the lugs, and the spring *h* attached near the outer end of the lever and its free end extended nearly to the offset, substantially as shown and described.

4. In a nail-clipper, the combination of a bed *a*, having a seat *a'* thereon with lugs *u* on each side of the seat, and the cutter *g* secured on said seat, the lever member pivoted to the lugs and provided with a cutting-seat, and the extension-lever *i* having an offset foot *p* with the slot *k* therein forming an elastic pressure-flange *k'*, and pivoted to the bed *a* and forming a friction-joint therewith.

5. In a nail-clipper, the combination of a bed *a* having a seat *a'*, and lugs *u* on each side of

the seat, and the cutter *g* secured on the seat, the lever member pivoted to the lugs, and provided with the cutting-seat, and the extension-lever *i* having an offset foot *p* pivoted upon the bed, the said bed having a slot adjacent to its edge to form an elastic flange, and for pressing against the extension-lever to form a friction-joint.

6. In a nail-clipper, the combination of the lever formed with a cutting member at one end, pivoted flanges connected to said lever member, and plates continuous with the said flanges having their edges bent into contact to form one arm of the lever, means for fastening said plates together, and a second lever pivoted to said flange and having a cutting member to coöperate with the first.

7. In a nail-clipper, the combination of the lever member having a cutting member at one end, pivoted flanges connected to said cutting member, plates continuous with said flanges having their edges bent into contact to form one arm of the lever, and tie-plates extending across the joint between the plates, and having their ends attached to the respective plates, and a second lever pivoted to said flanges and having a cutting member to coöperate with the first-mentioned cutting member.

8. In a nail-clipper, the combination, with the bed *a*, the cutter *g* secured upon its front end, of the lever *b* jointed upon the bed and provided with cutting-seat, and the spring *h* having cross-bar *h'* attached by rivets to the rear end of the lever, and its forward end forked, whereby a broad bearing-surface is formed at both ends of the lever, as and for the purpose set forth.

9. In a nail-clipper, the combination, with the bed *a* and the cutter *g* secured upon its front end, of the lever *b* jointed upon the bed and provided with cutting-seat, and formed in one piece of sheet metal with longitudinal joint at the middle, and the spring *h* having cross-bar *h'* extended across the joint of the lever near the rear end of the same and riveted thereon, and the free end of the spring pressing against said bed, as and for the purpose set forth.

10. A nail-clipper having two movable members and a fastener pivoted to one of said members, and having a bearing against the same, the joint having two friction-surfaces, of which one is a spring-flange slotted near its edge and bearing against the other.

11. A nail-clipper having two pivoted operating members actuated laterally toward and from each other, a cutting-seat on one, a longitudinal surface on the other, and a cutter fastened against said surface and having a cutting edge set at an angle to the body thereof and adapted at each operation to strike against said seat.

12. A nail-clipper having two pivoted operating members actuated laterally toward and from each other, a cutting-seat on one, a longitudinal surface on the other, and a cutter having an edge striking against said seat at each operation and having a foot fitted adjustably to said longitudinal surface.

13. A nail-clipper having two pivoted operating members actuated laterally toward and from each other, a cutting-seat on one, a longitudinal surface on the other, and a cutter having an edge striking against said seat at each operation and having a foot fitted adjustably and separably to the longitudinal surface.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE HAVELL.

Witnesses:
J. D. CLARK,
ARTHUR F. HEATON.