No. 658,766. Patented Oct. 2, 1900.

N. DUSSAULT.

HAND LASTING TOOL.

(Application filed Dec. 16, 1899.)

(No Model.) 5 Sheets—Sheet 1.

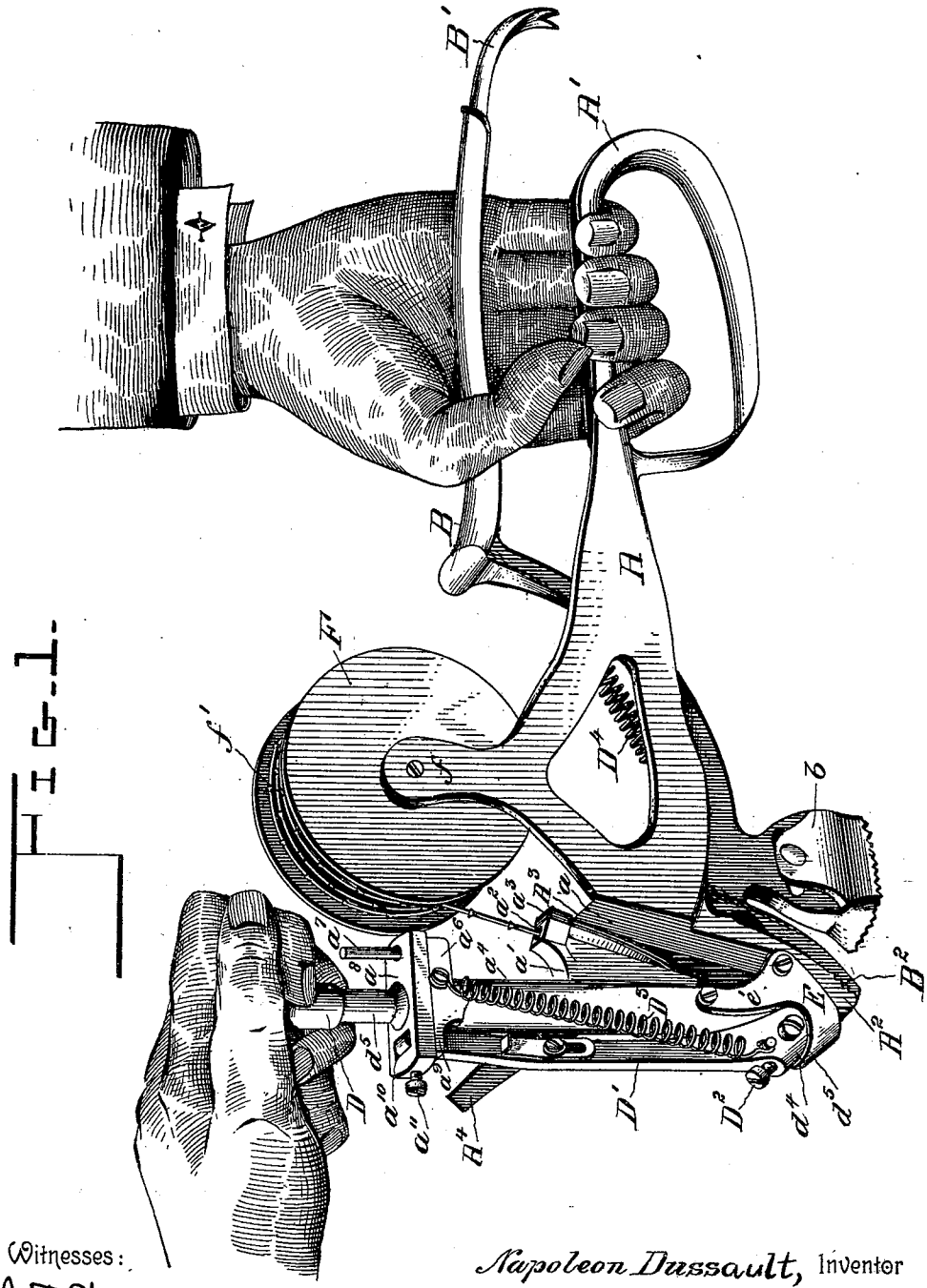


FIG. 1.

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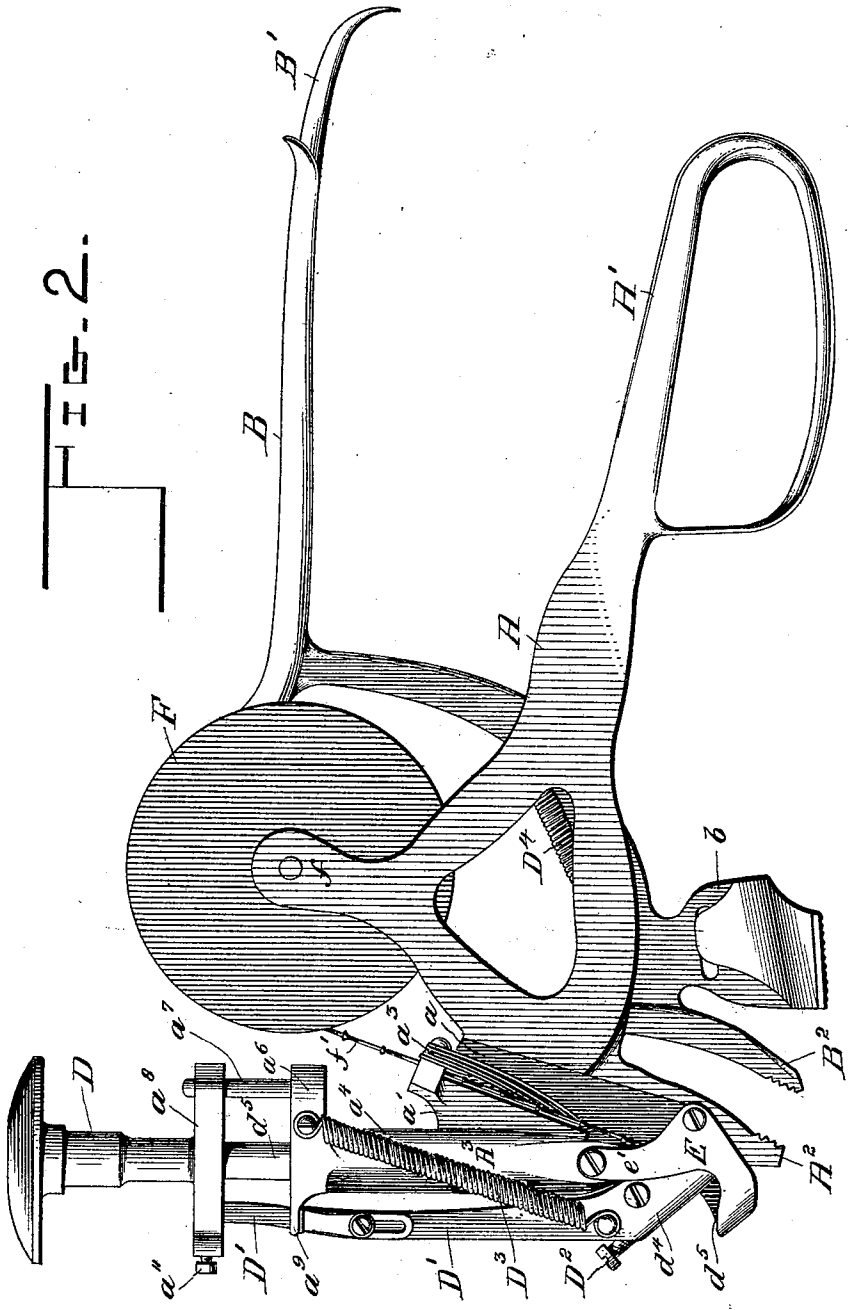
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(No Model.) 5 Sheets—Sheet 2.

FIG. 2.



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(No Model.) 5 Sheets—Sheet 3.

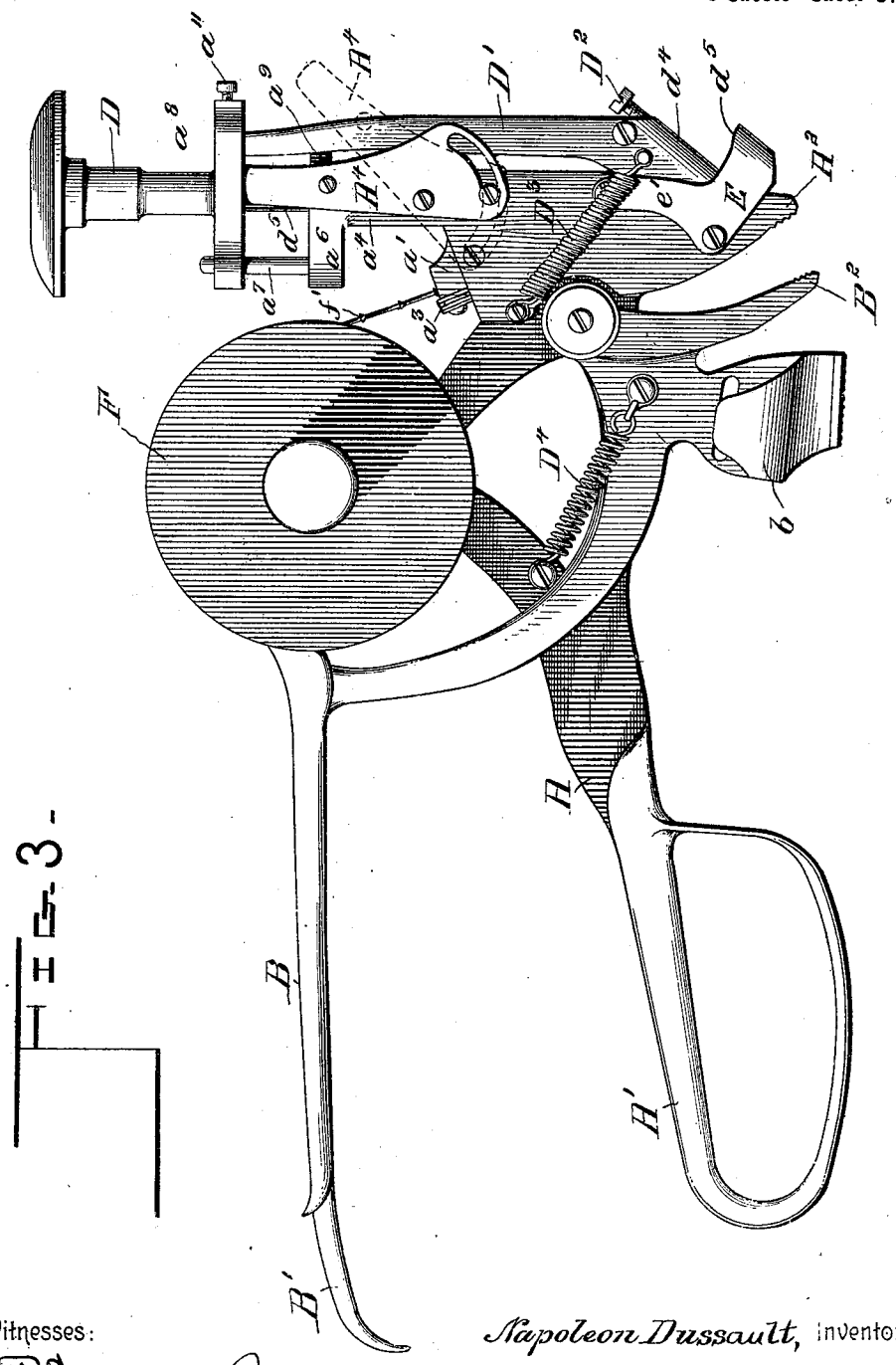


FIG. 3.

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FIG. 5.

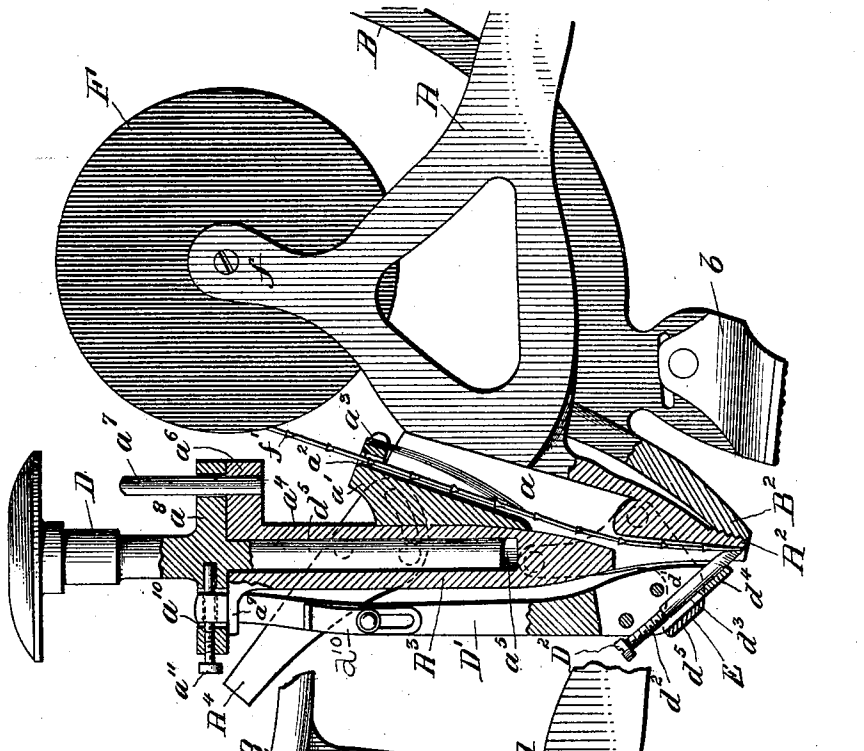
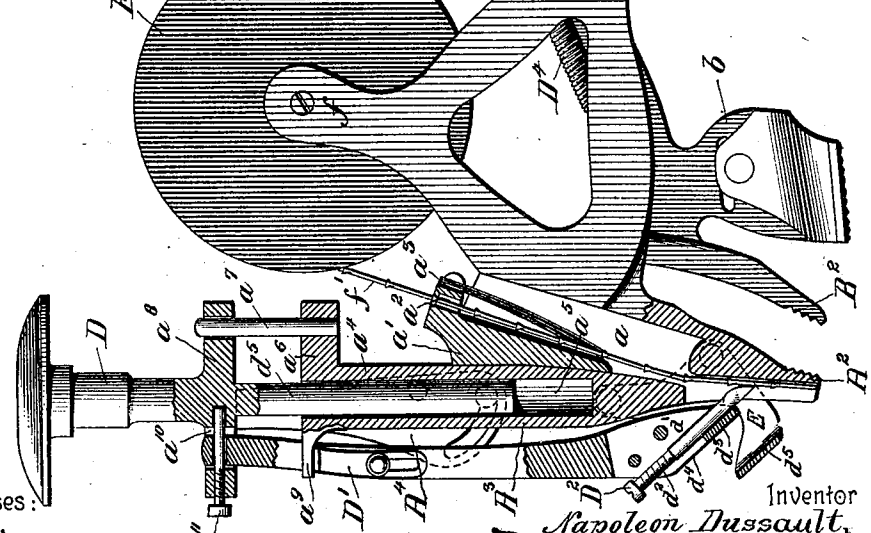


FIG. 4.



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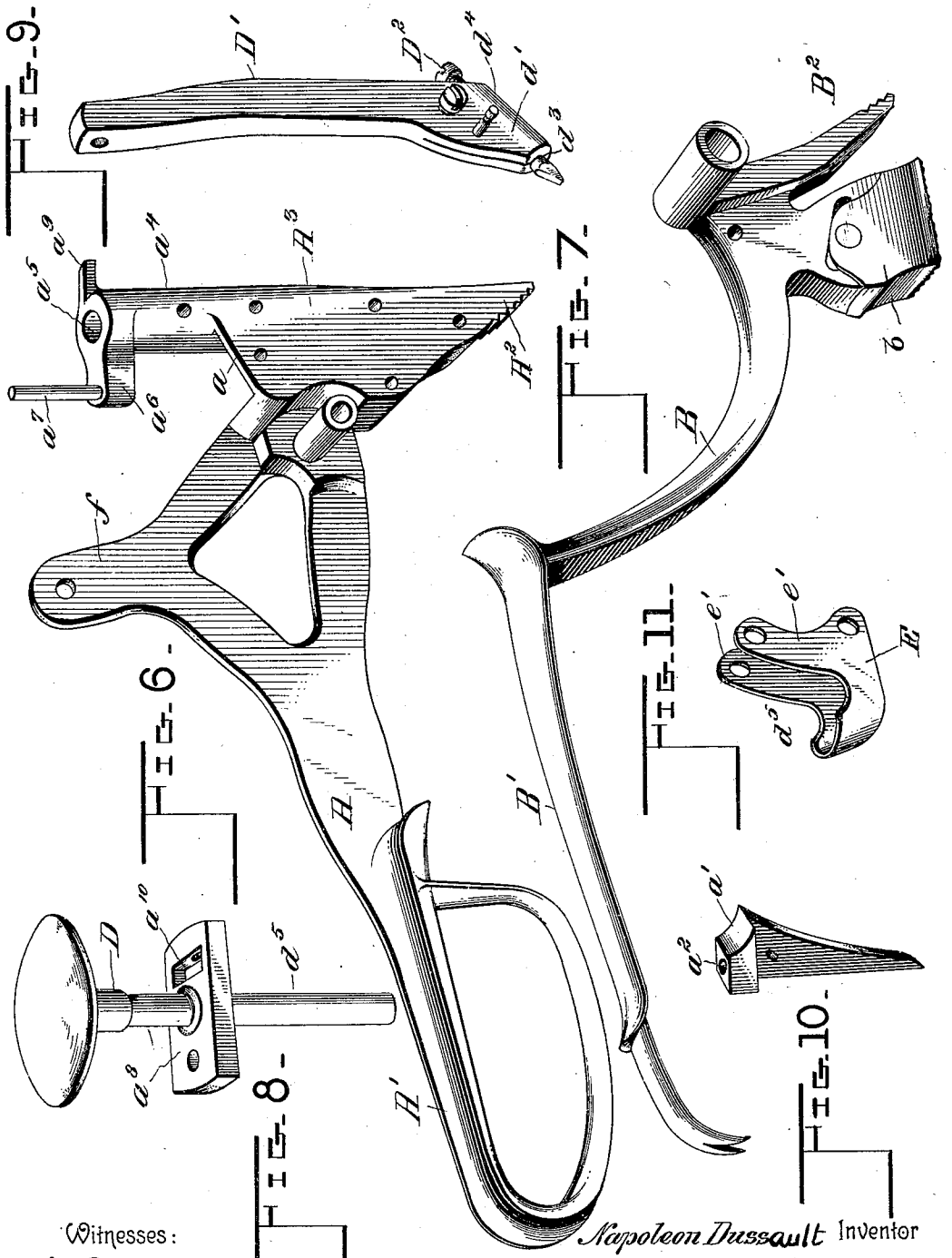
No. 658,766. Patented Oct. 2, 1900.

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UNITED STATES PATENT OFFICE.

NAPOLEON DUSSAULT, OF MONTREAL, CANADA, ASSIGNOR TO JOSEPH ADAM, OF SAME PLACE.

HAND LASTING-TOOL.

SPECIFICATION forming part of Letters Patent No. 658,766, dated October 2, 1900.

Application filed December 16, 1899. Serial No. 740,547. (No model.)

To all whom it may concern:

Be it known that I, NAPOLEON DUSSAULT, a subject of Her Majesty the Queen of Great Britain, residing in the city and district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Hand Lasting-Tools; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to hand lasting-tools; and its object is to provide a tool of this character which is simple in construction, of few parts, effective in operation, and which may be manufactured at a moderate cost.

To these ends the invention consists in a hand lasting-tool constructed substantially as hereinafter illustrated and described and defined in the appended claims.

Referring to the drawings, in which similar letters of reference indicate similar parts, Figure 1 is a view in perspective of a hand lasting-tool constructed in accordance with this invention. Fig. 2 is an elevation thereof, the parts being in the position assumed prior to driving the nail. Fig. 3 is a view similar to Fig. 2, showing the opposite side of the tool. Fig. 4 is a view similar to Fig. 2, parts being shown in section to show the construction. Fig. 5 is a view, partially in section, showing the position assumed by the parts when the nails are driven and cut. Figs. 6 and 7 are views in perspective of the operating lever-handles. Figs. 8, 9, 10, and 11 are views in perspective of details of construction.

Hand lasting-tools as heretofore constructed have generally been very complicated, comprising many parts and entailing great expense in their manufacture. In the type shown in the patent to Frechette, No. 594,241, on which this invention is an improvement, not only are the objections above noted apparent, but there exists the further objection that in the event of the nail being broken or of failure to be properly fed to the plunger it is necessary to take the tool apart in order to bring the nails down into their operative position, thus necessitating a serious loss of time and involving considerable trouble and inconvenience. In the tool about to be described all of these defects and objections are obviated and a hand lasting-tool provided which in the event of the failure of the nails to be properly fed to the plunger or of breakage of the same does not need to be taken apart, thus saving time and trouble, in addition to the advantages of simplicity of construction and operation and reduced cost of manufacture.

In the drawings, A and B represent two levers suitably pivoted together and provided with handles A′ and B′ and jaws A^2 and B^2. The lever B has a lug b on its under side, having a roughened face. The lever A is provided at the outer end with a frame A^3, in which is formed an opening a, extending therethrough from top to bottom. In the upper portion of the frame A^3 is fixed a plug a', which has its sides inclined from top to bottom and is provided in its upper portion with a passage a^2 for the nails, as clearly shown in Figs. 4 and 5. The passage a^2 communicates with the opening a, and a suitable leaf-spring a^3 is secured to the upper portion of the plug a' and bears at its lower portion against the inclined side of said plug.

The construction and operation of the parts above described are substantially the same as those disclosed in a companion application, Serial No. 739,881, in which is shown a modified construction of the nail-driver.

The outer portion of the frame A^3 is provided with an upwardly-extending lug a^4, in which is formed a vertical socket a^5 for the reception of the guide-rod d^5, forming a portion of the plunger D. The upper portion of the lug a^4 is provided with a rearwardly-extending arm a^6, in which is fixed an upwardly-projecting guide-rod a^7, which engages an opening in an offset a^8, formed upon the plunger D. Upon the opposite side of the upper portion of the lug a^4 extends a bifurcated arm a^9. Upon the side of the plunger opposite the offset a^8 is formed an extension having an opening a^{10}, which is preferably provided with straight sides and in which is loosely mounted the feed-rod carrier D′, the screw-rod a'' forming the supporting connec-

tion for said carrier, said screw-rod being removably secured in said extension to enable the parts being readily taken apart.

The carrier D′ extends downwardly and is guided in the bifurcated arm a^9 against lateral movement. The lower end of the carrier is split, forming a spring-clamp d', which is provided with a suitable binding-screw. A threaded perforation d^2 is formed in the lower portion of the carrier D′ and communicates with open-sided channels d^3, formed upon the adjacent faces of the clamp d'. A feed-rod or nail-driver D^2 is threaded in the perforation d^2 and is seated in the grooves d^3, the lower end of said feed-rod projecting beyond the edge of the carrier D′ and extending into the opening a of the frame A^3. The extremity of the feed-rod D^2 is suitably sharpened for cutting off the nails.

The body portion of the carrier D′ below the feed-rod D^2 is downwardly inclined, forming an inclined bearing-surface d^4, which is adapted to engage in its downward movement with a corresponding inclined bearing-surface d^5, formed on the lower portion of the guiding-bracket E. The bracket E is constructed with the spaced sides e', which embrace the sides of the frame A^5, and are rigidly secured thereto by suitable screws threaded into the sides of the frame and the upper portion of the jaw A^2. The lower portion of the guide-bracket E extends downwardly to within a short distance from the extremity of the jaw A^2, but far enough therefrom to permit the end of the carrier and the feed-rod to pass to the limit of their stroke.

A suitable spring D^3 is secured at its lower end to the carrier D′ and at its upper end to the lug a^4, as shown in Fig. 2, which tends to retract the plunger when released and also holds the feed-rod in proper position within the opening a of the frame A^3. If desired, a spring D^3 may be provided upon each side of the frame, in which case one of the springs D^3 may be mounted as shown in Fig. 3. A suitable spring D^4 may be employed to open the jaws A^2 B^2. d^{10} designates a stop adjustably carried by said carrier D′, said stop serving to limit the retracting movement of the carrier.

The lever A is provided at a suitable point on its upper side with a lug f, to which is rotatably secured a reel F. The lasting-nails f' are formed continuous with each other and are wound upon the reel F.

In operating the improved lasting-tool above described the lasting-nails are passed through the perforation in the plug a' and down between the inclined sides thereof and the leaf-spring a^3, whereby the nails are held in their operative position ready to be fed to the work. The nails are then passed down through the openings a of the frame A^3, between the point of the feed-rod D^2 and the inner face of the jaw A^2, said face forming an anvil toward which the nail-driver is carried, as clearly shown in Figs. 4 and 5. The parts are now in the position shown in Fig. 4 and the tool is ready for operation. The lever-handles A′ and B′ are grasped with one hand and the jaws A^2 and B^2 closed upon the work. The plunger D is then forced downwardly, carrying with it the carrier and the feed-rod, the sharp point of which engages the nail just back of the head and forces the same into the work. When the plunger reaches the guide-bracket F, the inclined face of the plunger engages the inclined face of said bracket and the feed-rod is forced inwardly toward the frame A^3 and against the nail with increasing force until at the end of the stroke the cutting-point of the feed-rod severs the lasting-nail, which has been driven up to its head in the work, the parts assuming the position shown in Fig. 5. Upon releasing the plunger the carrier is returned to the position shown in Fig. 4 by means of the spring or springs D^3, the point of the feed-rod sliding back above the head of the next nail to be driven. A suitable stop-plate A^4 is pivoted to the frame A^3 and adapted to engage a lug on the plunger to lock the parts in their raised position when desired.

As will be seen by referring to the drawings, the plunger has a true reciprocating movement within the frame A^3, by means of which there can be no binding of the parts; but the carrier D′, which is operated by the movement of the plunger, has no such true movement, it being capable of being oscillated on its pivot, as heretofore described, and while said carrier is connected to said plunger, yet it is connected thereto and extends from a point away from the longitudinal center of said plunger. This construction enables me to provide a feed-bar or nail-driver which has its longitudinal center extending substantially in a direction corresponding to the line of movement assumed during the severing operation. In other words, the pressure placed on the nail-driver during its severing operation is exerted in the direction of its longitudinal center in a manner similar to the action of a chisel, thus eliminating to a great extent the liability of the cutter becoming broken, which would be the case where the cutting movement is at substantially right angles to the longitudinal center of the cutter. I am therefore able to make use of an extremely small and light cutter and am also able to make such cutter adjustable and removable within its carrier without the loss of strength. It also enables the use of a cutter which can be readily sharpened.

Another feature of my construction consists in the use of the stop d^{10}. It being apparent that the feed-bar will be held yieldingly against the nail-strip by the springs D^3, it will be seen that any movement of the plunger will cause the feed-bar to move along the nail-strip until contacting with a nail-

head, and further movement will feed the nail-strip forward and drive the nail. As it may be necessary to use nails of different lengths, it would be possible if the movement of the plunger were absolutely fixed that in the case of small nails there would be a tendency of the feed-bar feeding two nails instead of one. This tendency is eliminated by the use of the adjustable stop, which limits the upward movement of the plunger, and therefore prevents the feed-bar passing to a point above the second nail-head or the nail-strip, but does not restrict in any manner the feed and severing movement of the feed-bar, the latter movement always terminating at the same point.

It will be seen from the construction above described that if a nail breaks off above the feed-rod it is only necessary to again raise the plunger to its full height, whereupon the feed-rod will engage and drive down the next nail, or if a defective nail is engaged it is only necessary to operate the plunger and cut until a perfect nail is reached. Hence it will be seen it is never necessary to remove the parts of the tool to insure the proper feeding of the nails or remove broken or bent nails.

While I have herein shown a preferred form of carrying my invention into effect, yet I do not desire to limit myself to such preferred details of construction, but claim the right to use any and all modifications thereof which will serve to carry into effect the objects to be attained by this invention in so far as such modifications and changes may fall within the spirit and scope of my said invention.

I claim—

1. A hand lasting-tool comprising two pivotally-connected levers having gripping-jaws; a frame connected to one of said levers, said frame having a socket; a plunger mounted in said socket; a cutting feed-rod and nail-driver mounted on said plunger, the connection of said feed-rod and said plunger being at a point above the lower end of said plunger and away from the longitudinal center thereof; and means for positively forcing said feed-rod toward the frame to drive the nail and sever it after being driven.

2. A hand lasting-tool comprising two pivotally-mounted levers having gripping-jaws; a frame connected to one of said levers, said frame having a socket; a plunger mounted in said socket; a lateral extension formed on said plunger above the lower end thereof a cutting feed-rod and nail-driver connected to said extension and means for positively forcing said feed-rod toward the frame to drive the nail and sever it after being driven.

3. A hand lasting-tool comprising two pivotally-connected levers having gripping-jaws; a frame connected to one of said levers, said frame having a socket; a plunger mounted in said socket; a lateral extension formed on said plunger, said extension having an opening; a cutting-feed-rod carrier mounted within said opening and having a loose connection with said extension to allow of a limited oscillating movement, said carrier supporting a cutting feed-rod; and means for positively forcing said carrier and its feed-rod toward the frame to drive the nail and sever it after being driven.

4. A hand lasting-tool comprising two pivotally-connected levers having gripping-jaws; a frame connected to one of said levers, said frame having a socket; a plunger mounted in said socket; a lateral extension formed on said plunger, said extension having an opening; a cutting-feed-rod carrier mounted within said opening and having a loose connection with said extension to allow of a limited oscillating movement, said carrier supporting a cutting feed-rod; and a guide, located in the path of movement of said carrier, for directing the movement of said feed-rod toward said frame, whereby the nail will be driven and severed.

5. A hand lasting-tool comprising two pivotally-connected levers having gripping-jaws; a frame connected to one of said levers, said frame having a socket; a plunger mounted in said socket; a lateral extension formed on said plunger, said extension having an opening; a cutting-feed-rod carrier mounted within said opening and having a loose connection with said extension to allow of a limited oscillating movement; a feed-rod and nail-driver carried by said carrier, said feed-rod having its longitudinal center extending in substantial alinement with the direction of movement of the carrier during the severing operation; and a guide located in the path of movement of said feed-rod for directing the movement of said feed-rod toward said frame, whereby the nail will be driven and severed.

6. In a hand lasting-tool the combination with levers having gripping-jaws; and a frame carried thereby; of a plunger mounted to have a vertical movement; a feed-rod carrier loosely connected to said plunger at a point away from the longitudinal center of said plunger; a feed-rod carried by said carrier, said feed-rod having its longitudinal center extending in substantial alinement with the direction of movement of the carrier during the severing operation; and means for positively forcing said feed-rod toward the frame to drive the nail and sever it after being driven.

7. In a hand lasting-tool, an oscillating frame or carrier; a cutting feed-rod and nail-driver removably and adjustably carried by said carrier, said feed-rod having its longitudinal center extending in substantial alinement with the direction of movement of the carrier during the severing operation; and an anvil toward which said driver is forced during said severing operation.

8. In a hand lasting-tool, an oscillating frame or carrier; means for moving the lower

end of said carrier toward and from an anvil formed on said tool; and a cutting feed-rod and nail-driver removably and adjustably carried by said carrier, said feed-rod having its longitudinal center extending in a direction at an angle to the longitudinal center of the carrier.

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

NAPOLEON DUSSAULT.

Witnesses:
WILLIAM B. ROBERTS,
FRED. L. GAGNON.