(Model.)

K. McLENNAN.

GRAFTING TOOL.

No. 285,910. Patented Oct. 2, 1883.

Fig. 1.

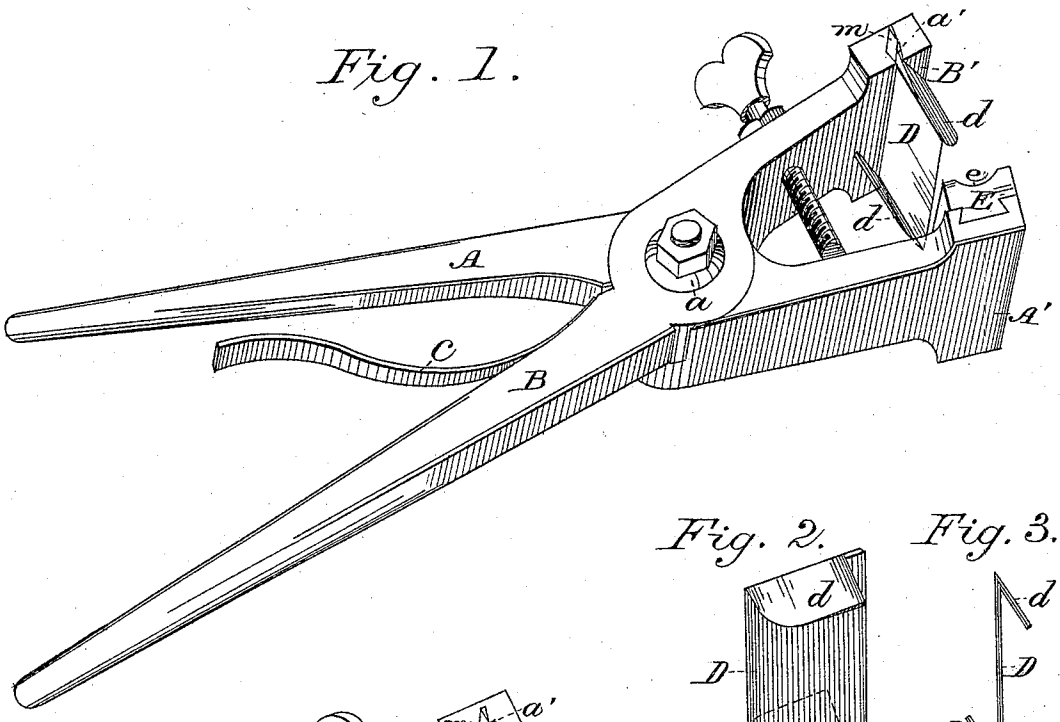


Fig. 2.

Fig. 3.

Fig. 4

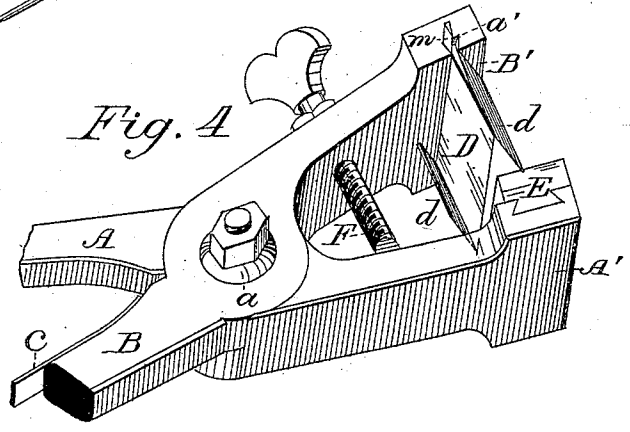


Fig. 6.

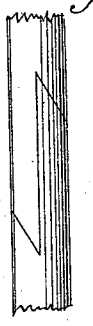
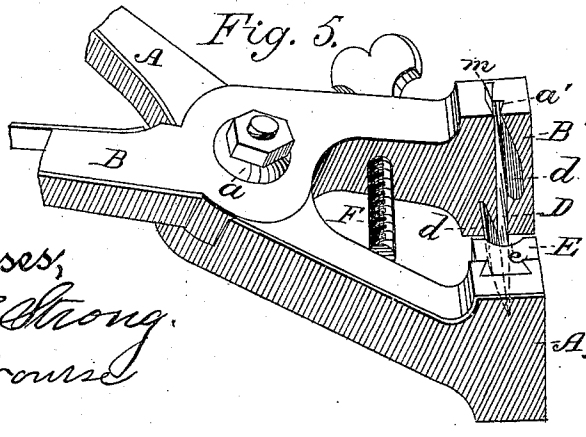


Fig. 7.



Fig. 5.



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UNITED STATES PATENT OFFICE.

KENNETH McLENNAN, OF BERKELEY, CALIFORNIA.

GRAFTING-TOOL.

SPECIFICATION forming part of Letters Patent No. 285,910, dated October 2, 1883.

Application filed May 3, 1883. (Model.)

To all whom it may concern:

Be it known that I, KENNETH McLENNAN, of Berkeley, county of Alameda, State of California, have invented an Improved Grafting-Tool; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in that class of grafting implements or tools in which the cutting-blades are adapted to be actuated by a hand implement; and it consists in a peculiar angular knife fitted into one of the jaws of the implement in an opposing block in the other jaw, against which said knife is adapted to operate, and in a means for adjusting and limiting the movement of the knife against said block, all of which I shall hereinafter fully explain.

The object of my invention is to prepare the scions and stocks of young trees or vines for grafting by means of a peculiar counterpart cut in each, whereby the two may be fitted together with an advantageous union by close and perfect joint. Union of the stock and scion has been heretofore accomplished by a joint made by tools similar in operation to the one hereinafter described, but with knives of such shape as not to be able to make a cut in each providing for so advantageous and perfect a connection as that which I am enabled to form with my knife.

Figure 1 is a perspective view of my grafting-tool. Fig. 2 is a view of the knife D having the edges of its ends curved as in Fig. 1. Fig. 3 is an edge elevation of the knife D. Fig. 4 is a view showing the knife D with cutting-edge of ends *d* straight, and block E with plane surface. Fig. 5 is a view showing the jaws A′ and B′ placed at an angle. Fig. 6 is a view of a portion of a stock, showing the form of cut made. Fig. 7 is a view showing the lower grafting-cut.

A B are the handles, pivoted together at *a*, and having jaws A′ B′, respectively.

C is a spring between the handles, in usual form, to accomplish the automatic separation of the jaws after the pressure is released.

In the jaw B′ is formed a slot, *a′*, in which the knife D is secured by a key, *m*. In the other jaw is fitted, by dovetailing or mortise and tenon, the opposing block E. This is preferably made of some hard wood. The knife D is made of a steel plate, having its ends *d* bent in opposite directions, but parallel with each other, and forming the same angle with the body of the plate. This angle should preferably be an acute one rather than a right or obtuse angle, in order to make the longest possible cut in the shortest space, that the impinging surfaces of the stock and scion may be the greatest. The base of the knife is thick enough to provide for strength, and its cutting-edge is ground down to the required sharpness.

In Fig. 1 the opposing block E has a concave groove, *e*, in its face, and in order to conform the knife thereto I curve the edges of the ends *d*, as shown both in Figs. 1 and 2; but in Fig. 4 the block E has a plane surface and the ends *d* of the knife are straight.

The implement is particularly designed for outside use, being portable and adapted to readily take hold of the stock.

In using the tool the stock or the scion, as the case may be, is fitted upon the block E in such position that the main edge of the knife shall strike along the longitudinal center of the wood. The cut made is a counterpart at each end, and is shown in Figs. 6 and 7. It will be seen that the acute angle of the end cuts gives a great impinging surface, while the whole cut is confined to the length of the body of the knife. The scions are of course previously prepared and carried by the operator. The stocks are cut as he goes along, and the scions are fitted thereto.

It will be observed that the joint or union is close and perfect, being a dovetailing into one another, affording the greatest amount of impinging surface, both of bark and wood, and each part furnishing support to the other.

With an experienced operator who can readily judge of sizes, the stocks may be rapidly selected upon which to fit a certain size of scion, whereby the most perfect union may be formed.

The grooved-face block and the knife with the curved ends are particularly adapted for young trees and for straight stocks of all kinds, as these will lie within the groove of the block. When this block can be used, the tool is much handier, as the operator can more readily fit it to the stock, and the grooved bed forms a

guide for the stock and holds it more firmly against the pressure of the knife; but for crooked stocks the block with the plane surface is the best, as the improvement may be adjusted to any position in order to get the stock to lie across it. For greater convenience in using the tool, the jaws may be cast at any angle with the handles, as shown in Fig. 5, whereby these latter may incline upwardly, giving the knife an opportunity to operate on the stock as close to the ground as may be necessary without having to place the hand directly on the ground.

By removing the key *m*, the knife may be taken out from the jaw and another of different size may be inserted. The block E may likewise be removed for the substitution of another.

In order to limit the movement of the knife against the block, for the purpose of preserving said block and keeping the edge upon the knife, I have a set-screw, F, passing through one of the jaws and impinging against the other. This is to be set up just far enough to permit the knife to touch the block.

It may be well to explain that this implement is intended for use in preparing nursery stock alone, and not for grafting in large limbs of old trees.

I am aware that grafting implements having an action similar to shears have been provided with knives or blades for making the tongue, saddle, whip, and splice graft; but I am not aware that any knife has been constructed to make the cut I have illustrated, and for which I claim advantages not possessed by the others. I do not therefore claim, broadly, such an implement provided with cutting-knives to form the graft, but simply my own shape of knife and the novel details of construction I have herein set forth.

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

1. In a grafting implement or tool, a knife or cutter having its ends turned in opposite directions, and forming with the body of the knife the same angle, substantially as herein described.

2. In a grafting implement or tool, a knife or cutter having its ends turned in opposite directions, lying parallel with each other, and forming, with the body of the knife, acute angles, whereby a greater impinging surface within the length of the cut may be obtained, substantially as herein described.

3. In a grafting implement or tool, the knife or cutter D, having its ends *d* turned in opposite directions, lying parallel with each other and forming acute angles with the body of the knife, in combination with the opposing block E, substantially as herein described.

4. In a grafting implement or tool, the knife or cutter D, having its ends turned in opposite directions, lying parallel with each other, and forming acute angles with the body of the knife, said ends having a convex cutting-edge, in combination with the opposing block E, having a concave groove, *e*, corresponding to the convex edges of the ends *d* of the knife, substantially as and for the purpose herein described.

5. In a grafting implement or tool, the combination of the pivoted handles A B, having jaws A′ B′, with the knife or cutter D in one jaw, said knife having its ends *d* turned in opposite directions, forming with the body of the knife acute angles, and lying parallel with each other, and the opposing block E in the other jaw, substantially as herein described.

In witness whereof I hereunto set my hand.

KENNETH McLENNAN.

Witnesses:
C. S. MERRILL,
WM. F. BOOTH.