(No Model.)

E. C. MUSGRAVE.

STAPLE PULLER.

No. 561,337. Patented June 2, 1896.

Fig. 1.

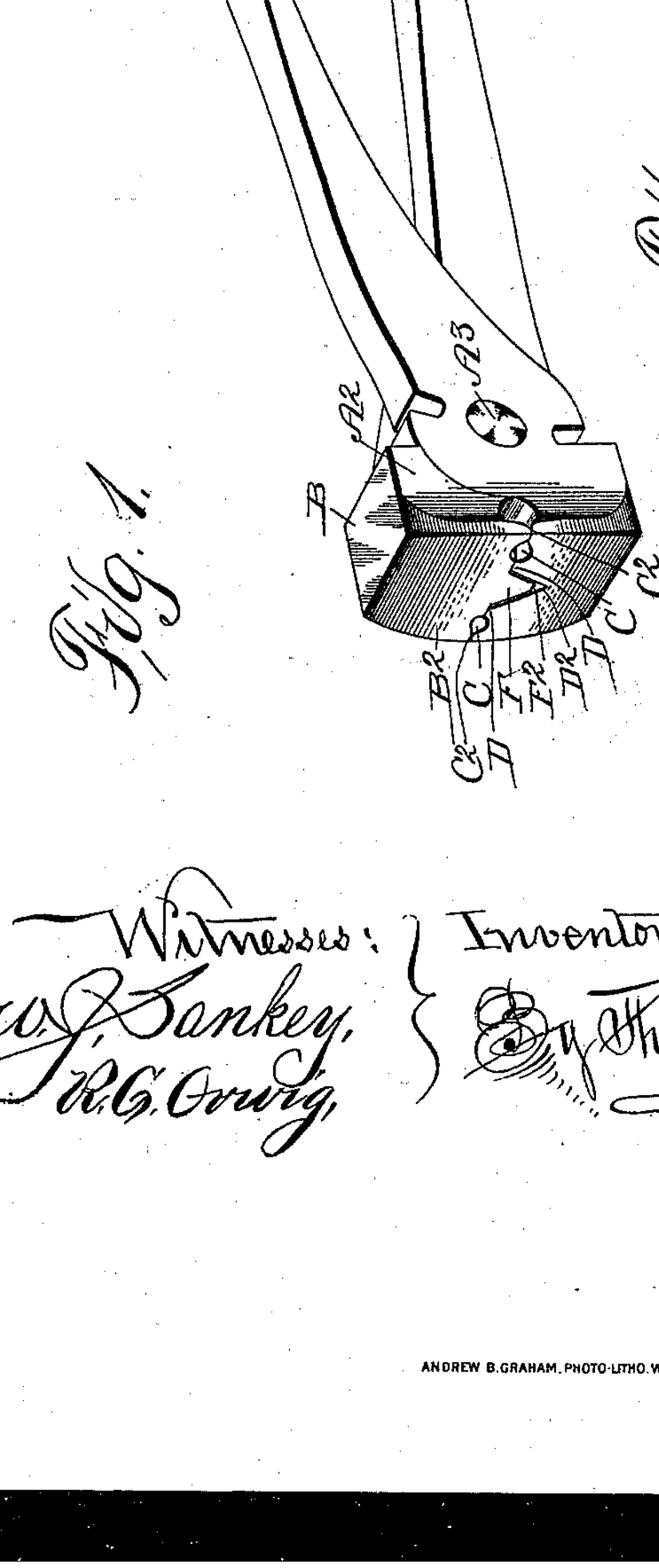


Fig. 2.

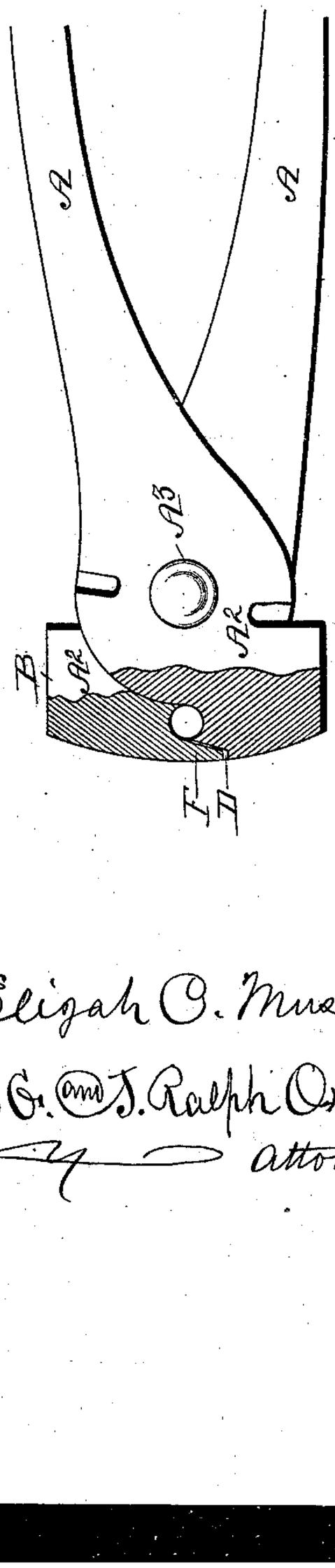
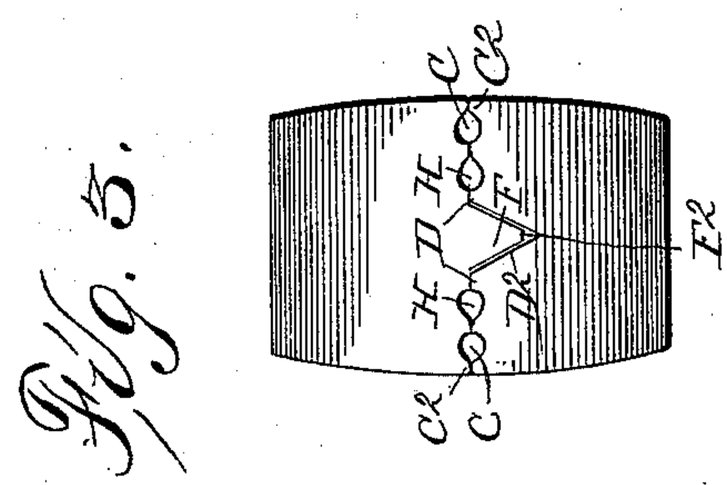


Fig. 3.



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UNITED STATES PATENT OFFICE.

ELIJAH C. MUSGRAVE, OF DES MOINES, IOWA.

STAPLE-PULLER.

SPECIFICATION forming part of Letters Patent No. 561,337, dated June 2, 1896.

Application filed February 8, 1896. Serial No. 578,623. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH C. MUSGRAVE, a citizen of the United States of America, residing at Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Staple-Puller, of which the following is a specification.

The objects of this invention are to provide a strong and durable tool designed for pulling staples when embedded in wood any ordinary distance, and especially designed for readily and quickly engaging and pulling such staples as are not entirely driven into the wood and yet require great force to withdraw, to thereby promote quickness and ease in removing fence-wires, &c.

A further object is to provide a tool by which a staple projecting from a post may be quickly grasped and extracted by a straight pull without danger of the staple slipping from the tool, and to provide a tool of this class that will adapt itself to staples of any gage wire or any ordinary size, and also to provide a tool that will firmly engage a straight fence-wire.

My invention consists in certain details of construction in the shape of the jaws whereby the objects contemplated are attained, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows the complete tool in perspective; Fig. 2, a longitudinal section of the jaws, and Fig. 3 a front end view of a modified form of the jaws.

The tool is composed of two members of similar contour, each comprising a handle A and a jaw A^2 and the two parts pivoted together at A^3. The upper and lower surfaces of the head—that is, the surfaces in alinement with the two handles—are flattened at B to adapt the device for use as a hammer, and the end surface B^2, connecting the two flat surfaces, is convex and quite broad.

The essential novelty of the invention consists in the formation of the adjacent edges of the jaws. Beginning at the outer corners in each jaw there is formed an approximately semicircular notch C, far enough from the corner to leave a point C^2, that may enter a staple and when the jaws are brought together force a wire held by the staple to one side, as required, to permit the points to come together and thus firmly grasp the staple, which may then be pulled by using the opposite edge of the end as a fulcrum and the handles as a lever. On the space between these notches I have provided points D, that are similar in shape to the points C^2 and come together when the jaws are closed. Between these points D on the lower jaw is a triangular depression D^2, which approaches the points D near enough to reduce said points so that they will readily enter a small staple. The opposite jaw is provided with a mating triangular projection F, which is of the same shape as the depression, but of such a size that the edges will not touch when the jaws are closed. The extreme end of the projection is slightly concaved at F^2, so that when a wire is grasped thereby it will not be cut.

In practical use, when it is desired to draw a staple that is deeply embedded in the wood, it is of course necessary to take the time required to place the points C^2 so that when brought together they will enter between the staple and a wire held thereby in the ordinary way. Quite frequently, however, the staple projects slightly from the wood, and in such instances the operator need not stop to accurately place the points, but simply opens the jaws and makes a rapid movement to bring the jaws together over these staples. As a result, the jaws must assume one of the following positions relative to the staples, no matter how large or small the staple may be. Most probably one side of the staple will enter one of the notches C and the other part enter somewhere between the projection F and its mating depression. In this instance the staple may be pulled by using the handles as a lever and the opposite edge of the head as a fulcrum, or else by a direct pull of the handles, the advantages gained being that the points D will have passed through the staple, and it is therefore not necessary to exert any great amount of force in holding the handles together, and the staple is very firmly retained. This result is made sure by having the projection smaller than the depression, so that the side of the staple is made to overlap the points D, and the tendency of any pressure of the jaws together is thus made to force said points D farther into the

staple. Furthermore, the staple may be grasped by having the projection F enter it and its two sides lie in the opposite sides of the depression D^2, or if unusually large one side of the staple may enter either of the notches C or the depression D^2 and the other side lie on the exterior of the jaws. In either of these instances, however, the result is the same—that is, there will be a projection extended through the staple so that a firm hold is had as is also the advantage of the wedge-shaped projection in retaining the staple in the jaws and permitting the operator to employ all of his strength in pulling the staple, not in grasping it.

In the modified form shown in Fig. 3 the jaws are made wider and an additional pair of notches (indicated by the reference-letter H) placed between the notches C and the depression D^2. This is of advantage in the saving of time by giving the operator more room in which to grasp the staple by a quick movement and a greater fulcrum by which to pull it. The functions of these additional notches are substantially the same as those of the other notches, except as just stated.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States therefor, is—

1. A staple-puller, comprising two members pivoted together and each having a broad or wide jaw, and one of said jaws being provided with a wedge-shaped central depression and a wedge-shaped corresponding projection on the other designed to admit one side of a staple between said projection and depression and said jaws having coinciding notches in their meeting edges on opposite sides of the said projection and depression, to receive the remaining side of the staple held between the said projection and depression.

2. A staple-puller, comprising two members pivoted together and each having a broad or wide jaw, one of said jaws having a central wedge-shaped projection with a concaved end, and also two notches on opposite sides of the said projection, and the other jaw having a central wedge-shaped depression somewhat larger than the projection and notches to coincide with the notches in the other jaw, substantially as and for the purposes stated.

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