S. Fahrney,

Boring Hubs.

No. 7,185. Patented Mar. 19, 1850.

Fig. 1.

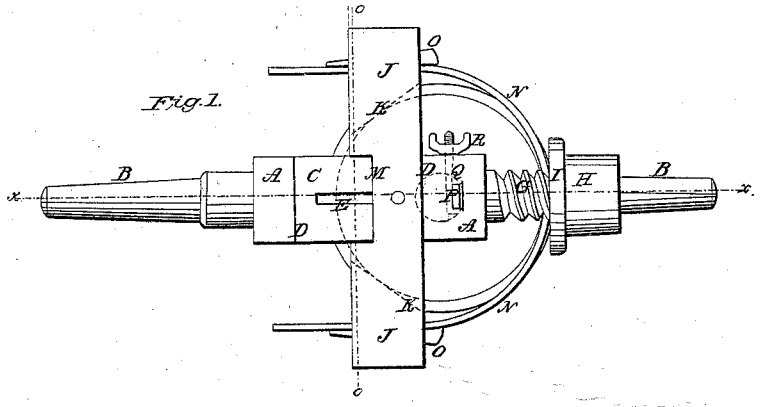


Fig. 2.

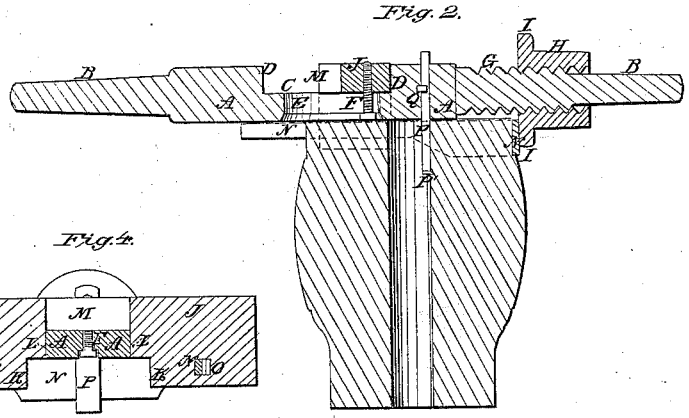


Fig. 4.

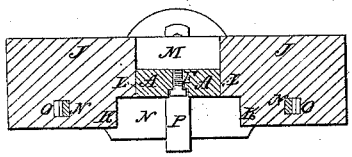
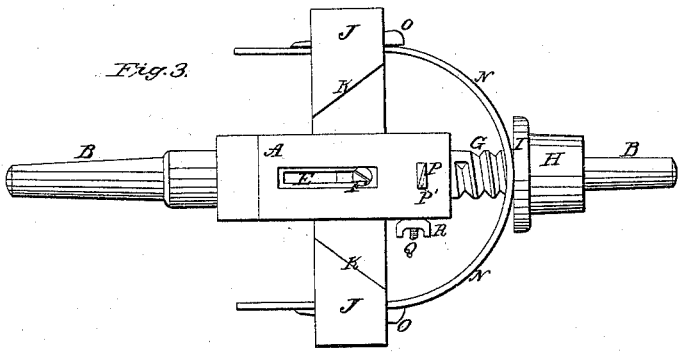


Fig. 3.



UNITED STATES PATENT OFFICE.

SAMUEL FAHRNEY, OF NEAR BOONSBORO, MARYLAND, ASSIGNOR TO ANDREW FAHRNEY AND JOSIAS FAHRNEY.

TOOL FOR PREPARING HUBS FOR BOXES.

Specification of Letters Patent No. 7,185, dated March 19, 1850.

To all whom it may concern:

Be it known that I, SAMUEL FAHRNEY, of near Boonsboro, in the county of Washington and State of Maryland, have invented a new and useful improvement for excavating or cutting out hubs for the reception of boxes and linch-pins, of which I denominate the "Wheelwrights Implement," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

The nature of the invention consists in the construction of an implement, or tool, to be applied to the end of hubs of carriage and other wheels, for excavating and cutting out the same, by hand; for the reception of the ordinary wheel boxes and also the circular recess in which the linch pin revolves.

Figure 1, represents a plan or top view of the implement, as applied to the hub. Fig. 2 is a longitudinal section through the same at the dotted line *x x* of Fig. 1. Fig. 3, is a view of the implement inverted. Fig. 4, is a transverse section at the line *o*, *o*, of Fig. 1.

Similar letters in the several figures refer to corresponding parts.

The implement or tool consists of a recessed slotted bar A, from which the cutter projects at right angles; provided at either end, with handles B, B, and having its central portion recessed at C, on its upper side, about two thirds its length, in which a recessed transverse bar is made to fit, said recess C forming two shoulders D, D, which limit the movement of the bar A. In the center of the recess C and longitudinally there is a slot E, through which projects the shank of a screw bolt F, into the transverse bar, for connecting the recessed bar A, therewith, and allowing it to move beneath the transverse bar, as the cutter excavates the hub. The bottom of the slot E, is made wider as represented in Fig. 4 to admit the head of the screw bolt E, and allow the bar A to rotate flush upon the hub. On the right end of this bar A there is formed a spiral thread G, into which a corresponding female thread, formed in a flanged regulating nut H, matches. H is the regulating nut, made in the form of a cylinder, and provided with a circular flange I which by turning the nut H to the right, bears against the bow shaped band, and thus the cutter is kept in contact with the hub, as the bar A is rotated, and the diameter of the excavation increases. J is the transverse bar, recessed on its under side a sufficient depth, to form oblique shoulders K, K, which flare outward toward the flanged nut H, and against which the ends of the hub are clamped loosely in order to center the implement thereon, by means of a bow shaped band. This transverse bar J is also recessed on its underside at L, to admit the recessed portion of the bar A, to fit and move therein; and which prevents their separation while rotating. It is also recessed at M on its left side corresponding in width with the bar A, to allow of a greater movement of the bar A, between the shoulders D, D, in cutting excavations larger than ordinary sized boxes.

N is the bow shaped band, projecting horizontally from the transverse bar J, in the form of a semi circle between which and the oblique shoulders K, K, the end of the hub is embraced and centered; and against the outside of which bow the flange I of the regulating nut H, is made to bear, in setting or adjusting the cutter for a fresh cut as the excavation increases at every rotation of the implement. This bow shaped band N, is reduced at its ends Fig. 2, which are secured in mortises made in, and near either end of the transverse bar J, by wedges O, O, which allow said band to be adjusted to suit the large and small ends of the hub.

P is the cutter, made of a plate of steel, and secured vertically through an opening in the bar A and clamped by means of a clamp bar Q, represented by dotted lines in Fig. 1, and a nut R, by which the cutter may be adjusted to suit different lengths of excavation required to be made in each end of the hub. To the lower end of this cutter and at right angles thereto, is formed a cutting lip P′, which projects outward, from the center of the hub, for cutting the shoulder of the excavation, around which the inner end of the box fits at right angles to the bore, and to prevent the fracturing or breaking of the wood in the excavation or the bore, by the successive rotation of the cutters therein.

Operation: The hub being bored in the usual manner for the end of the axle-tree, and turned to the required size and form, is set upright, the implement is placed on the

end thereof as represented in Figs. 1 and 2, between the oblique shoulders K, K, of the transverse bar and inside the bow shaped band N, which centers the implement thereon, the transverse bar being against the shoulder D of the recessed bar A next to the right end thereof. The cutter projecting from the bar A into the bore of the hub, is then adjusted to cut the required length of excavation, and the regulating nut H screwed against the bow shaped band N, by turning it to the right, which draws the bar A toward the same, until the right-angled cutting lip P′, of the cutter P, has entered the side of the hub or bore as seen in Fig. 2, the transverse bar and bow shaped band remaining centered to the end of the hub. The operator lays hold of the handles B, B, and turns the implement thereon, to the right as indicated by the arrow Fig. 1, a revolution, when the cutter will have cut a circular recess therein. The regulating nut H is again turned to the right against the bow shaped band, which band always remains the same distance from the center of the hub, by which the bar A will be drawn toward said nut H and consequently the cutter farther from the center of the hub, when the cutter will be adjusted for a fresh cut, the projecting lip P′ entering the side of the bore, and cutting the shoulder, while the vertical edge of the cutter excavates the sides of the bore, and thus the operation is continued until the excavation is of the required diameter, which may be known by a circle scribed on the end of the hub, the cutter being drawn farther from the center of the hub at each rotation of the implement, which pares and cuts the inside thereof regularly in circles, corresponding with the circle of the bore and center of the hub. In this manner the implement is adjusted to the large and small ends of the hub, and the excavations made therein of any desired length and diameter.

Having thus described the construction and operation of my improved hub excavator, what I claim as my invention and desire to secure by Letters Patent is—

The construction of the implement or tool above described and represented by the accompanying drawings, for excavating or cutting out the ends of hubs of carriage and other wheels by hand for the reception of the ordinary wheel boxes and linch pins, the cutter P P′ being made to recede from the center of the hub simultaneously with the operation of cutting the excavation in concentric circles by the combined and simultaneous action of the screw G and nut H in connection with the recessed bar A and handles B B—transverse bar J and bow N, arranged and operating in the manner and for the purpose set forth.

In testimony whereof I have hereunto signed my name before two subscribing witnesses.

SAMUEL FAHRNEY.

Witnesses:
JACOB BLECKER,
JOHN COLT.