Fetter & Pennock,

Mortising Machine.

No. 13,084. Patented June 19, 1855.

Fig: 1.

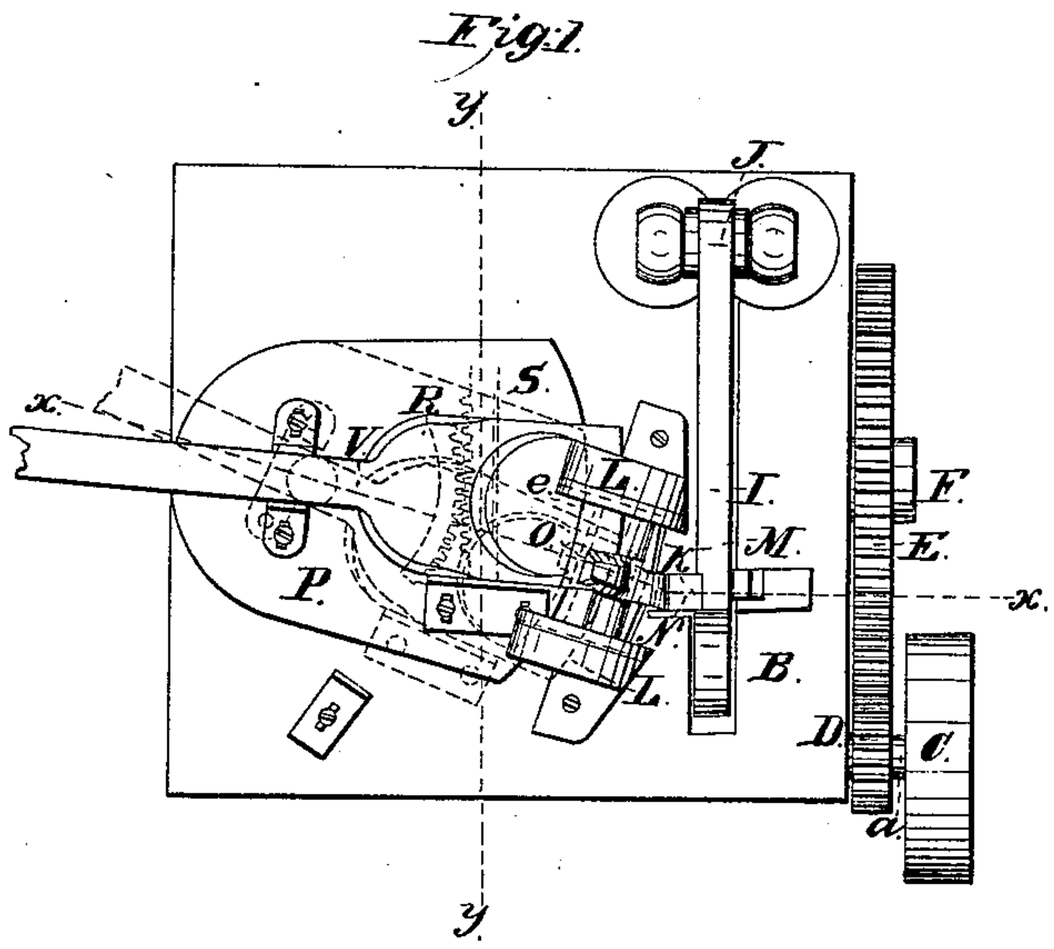


Fig: 3.

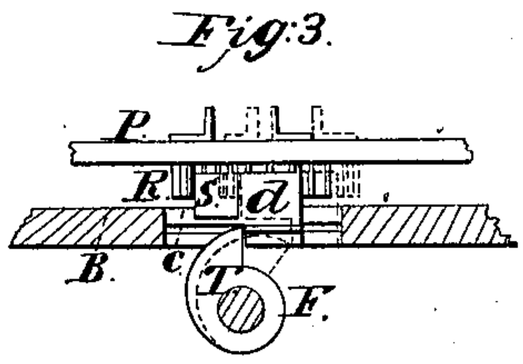


Fig: 2.

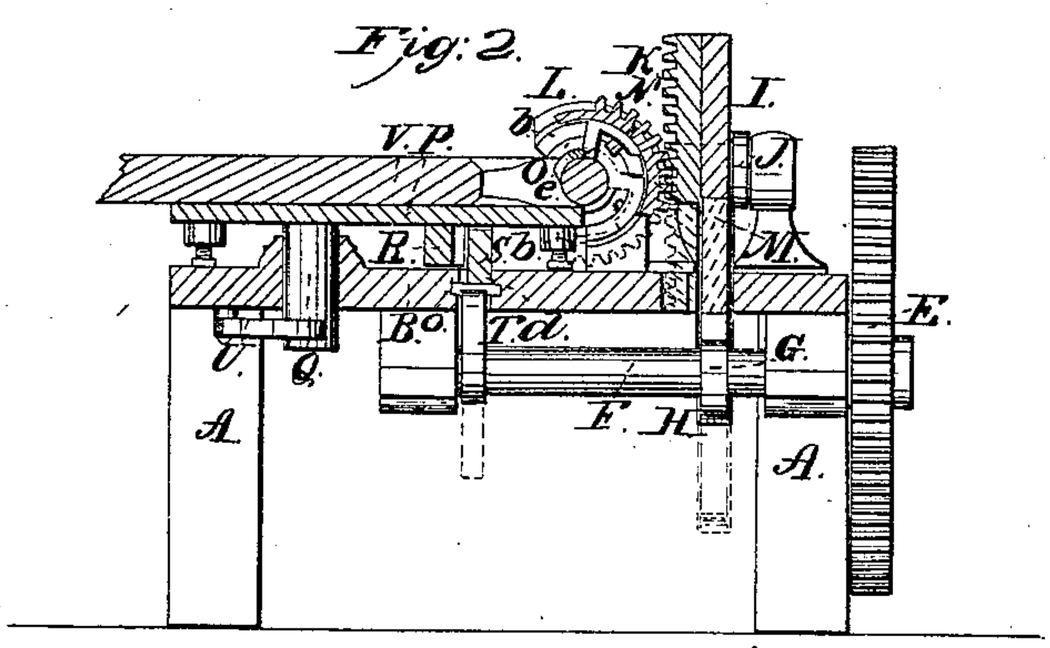
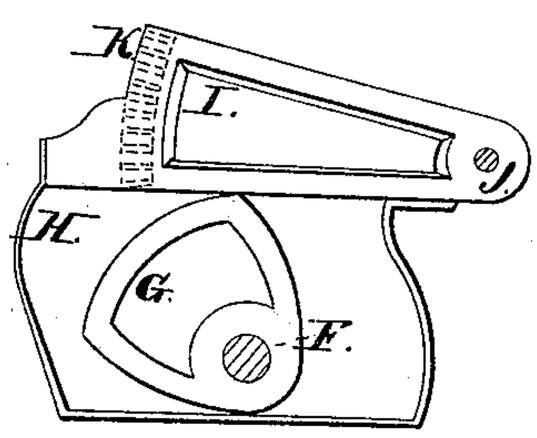


Fig: 4.



UNITED STATES PATENT OFFICE.

G. FETTER AND J. L. PENNOCK, OF HOLMESBURG, PENNSYLVANIA.

MACHINE FOR CUTTING THE INSIDE HOLD OF SHOVEL-HANDLES.

Specification of Letters Patent No. 13,084, dated June 19, 1855.

To all whom it may concern:

Be it known that we, GEO. FETTER and J. L. PENNOCK, of Holmesburg, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Machine for Cutting the Inside Hold of Shovel-Handles; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan or top view of our improvement. Fig. 2, is a vertical section of ditto (*x*), (*x*), Fig. 1, showing the plane of section. Fig. 3, is a vertical section of a portion of our improvement taken at the line (*y*), (*y*), Fig. 1, said section showing the carriage to which the handle is attached and the cam by which it is operated. Fig. 4, is a side view of the geared sector which operates the cutter, and the cam and frame by which the sector is operated.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a new and improved machine for cutting the inside hold of D, shaped handles, for shovels, spades, etc., and consists, 1st, in cutting the inside hold of the handles, by means of a curved cutter which is made to pass half way around one end of the hold forming a necessary cut and then remain stationary while the handle is moved in a proper direction, causing the whole length of the hold to be properly cut; 2nd, our invention consists in the peculiar means employed for operating the cutter and handle or the carriage to which the handle is attached.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A, represents a rectangular frame having a platform or top B, on its upper part.

C, is a driving pulley, attached to a shaft (*a*) at one side of the frame A, said shaft (*a*), also having a pinion D, upon it, near the driving pulley, see Fig. 1. The pinion D, gears into a toothed wheel E, which is hung on the outer end of a shaft F, underneath the center of the platform or top B. The shaft F, has a cam G, upon it, of sector form, as shown in Fig. 4, and the cam is fitted within a frame H, attached to the under side of a sector I, one end of which works upon, or is attached to, a small shaft J, on the upper surface of the platform or top B. The opposite end of the sector I, has a rack K, attached to it. The top and bottom ends of the frame H, are straight and parallel to each other, see Fig. 4, but the sides of the frame are curved. On the upper surface of the platform or top B, there are attached two upright semi-circular projections L, L, having grooves or recesses (*b*), in their inner sides, one in each, see Fig. 2. In these grooves the edges of a half cylinder or concave plate M, are fitted so as to work loosely therein. On the outer side of this half cylinder concave and at about its center there is a rack N, which gears into the rack of the sector I, see Figs. 1 and 2. To the inner side of the half cylinder or concave plate M, there is attached a curved cutter O, the front end and sides having cutting edges. This cutter is in the form of a quarter of a circle or may rather exceed a quarter of a circle in length.

P, represents a carriage on the upper part of the platform or top B. The outer end of this carriage works on a small vertical shaft Q, as a center. To the under side of the carriage there is attached a segment rack R, into which a straight rack S, gears, the rack S, working over a slot (*c*) in the platform or top B. To the under side of the rack S, there is a projection (*d*) attached, which passes down through the slot (*c*) as shown in Fig. 2.

T, is a cam hung on the shaft F. Said cam acts against the projection (*d*) as will be presently shown.

U, is a spring attached to the vertical shaft Q, of the carriage P. The handle is represented by V, and is attached or clamped in any proper manner to the upper surface of the carriage P, so that the inside hold (*e*), of the handle will be within the sweep of the cutter O.

Operation: The handle V, is clamped upon the carriage P, the outer edge of the hold (*e*), having been previously rounded, in any proper manner. Motion is then given the driving pulley C, in any proper manner and the cam G, first acts upon the upper side of the frame H, and elevates the frame and sector I, and as the rack K, on the sector gears into the rack N, on the half cylinder M, said cylinder will be turned or moved in the grooves (*b*) in the projections L, L,

and the cutter O, will sweep over the upper half of the inside of the hold (*e*) at one end, it being understood that one end of the hold is placed in contact with the cutter at the commencement of the operation. The cutter therefore during the movement above described, cuts a transverse groove on the inner side of the hold (*e*) at one end. The cutter now remains stationary, as the cam G, passes over the upper edge of the frame H, and the cam T, acts against the projection (*d*) of the rack S, and moves it, and as this rack gears into the segment rack R, of the carriage P, the carriage is also moved and the whole length of the hold (*e*) is forced past the cutter O, which cuts or rounds the upper part of its inner side. As soon as the projection (*d*) is relieved from the cam T, the carriage is thrown back to its original position, by the spring U. The handle V, is then reversed upon the carriage P, and the opposite side of the inside hold, is cut, by repeating the operation above described.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is,

1. Cutting the inside hold of D, shaped handles for shovels, spades, etc., by means of a curved cutter O, so operated as to pass one half way around one end of the hold, the cutter smoothing or rounding a portion of said hold equal to its width and then remaining stationary while the handle is moved to force the remaining uncut portion of the hold, past the cutter.

2. We claim operating the cutter O, by means of the cam G, frame H, geared sector I, and half cylinder M, to which the cutter is attached, and also operating the carriage P, to which the handle V, is attached by means of the cam T, and racks R, S. The above parts being arranged and operating conjointly as herein shown and described.

GEORGE FETTER.
JOSEPH LIDDON PENNOCK.

Witnesses:
GEORGE I. FOX,
JESSE C. PEACOCK.