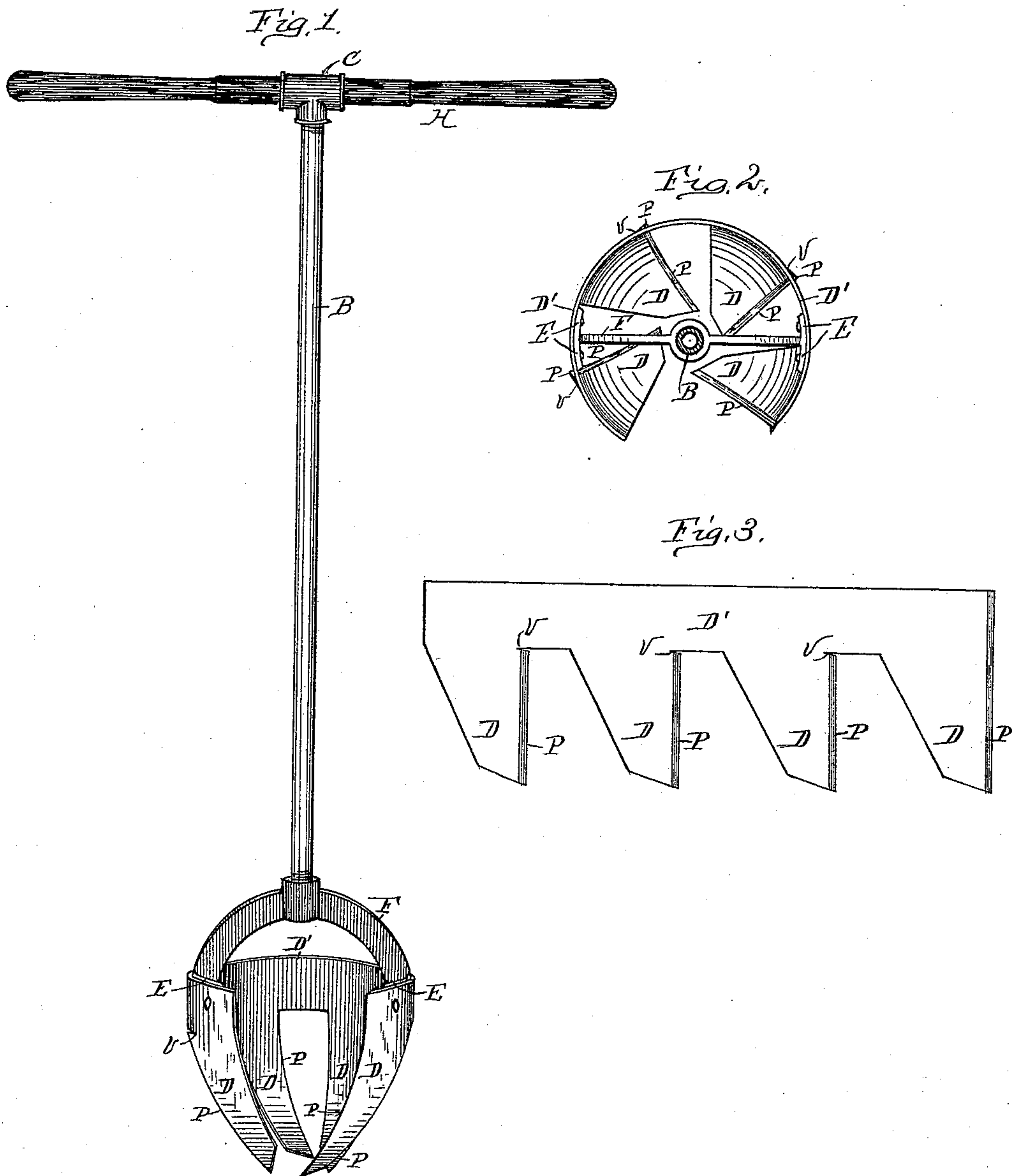


(No Model.)

H. M. PATTERSON.  
EARTH AUGER.

No. 537,992.

Patented Apr. 23, 1895.



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# UNITED STATES PATENT OFFICE.

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## EARTH-AUGER.

SPECIFICATION forming part of Letters Patent No. 537,992, dated April 23, 1895.

Application filed October 12, 1893. Serial No. 487,967. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY M. PATTERSON, a citizen of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Earth-Augers, of which the following is a specification, reference being had therein to the accompanying drawings, and the letters of reference thereon, forming a part of this specification.

My invention relates to earth augers adapted for use as post-hole diggers, and the objects in view are to provide a simple, inexpensive, and efficient device adapted to cut and accumulate the loosened earth in a suitable pocket or inclosure, whereby when the pocket or inclosure is filled the tool may be withdrawn from the hole to remove the soil without special manipulation, and without allowing the soil to escape from the pocket or inclosure during the removal of the auger; and, furthermore, to provide cutters which are adapted to penetrate and loosen the soil with facility, and at the same time serve as feeding points to draw the auger into the soil and avoid the necessity of applying pressure.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings—Figure 1 is a perspective view of an auger constructed in accordance with my invention. Fig. 2 is a plan view of the head of the auger showing the shank. Fig. 3 is a detail view of the blank forming the cutting and feeding blades.

Similar letters of reference indicate corresponding parts in all the figures of the drawings.

I preferably use a plurality of cutting blades D which are struck, together with the connecting band D', from a single sheet or blank of metal, whereby the blades are integral with the band to avoid the use of fastening devices to connect such parts. The upper and lower edges of the band are parallel, and at right angles to these parallel lines are the front or cutting edges P of the blades, said cutting edges being beveled, as shown clearly in Fig. 3, and the cutting edge which is formed

at one terminal of the blank being extended to the upper edge of the band, while the remaining cutting edges extend to the lower edge of the band. Small notches or cuts *v* are made at the upper ends of the cutting edges in the line of the lower edge of the band to separate said edges from the band and allow them to project outward beyond the surface of the band when said band is bent into the segmental form shown in Figs. 1 and 2 after application to the yoke F to which it is secured. It is obvious that the curved or segmental bending of the band D' is thus accomplished without affecting the extreme or cutting edges of the blades, and thus the latter are allowed to stand out beyond the surface of the band, as shown clearly in Fig. 2.

The rear edges of the blades are inclined or arranged at obtuse angles to the line of the lower edge of the band, whereby the blades increase in width toward their upper ends or their points of junction with the band to brace the blades in the plane of the band, and hence in the direction of strain during the rotation of the cutting head. The lower extremities of the blades are blunt and terminate in edges which are beveled upward from the cutting to the rear edges. This provides an acute angle at the lower extremity of the cutting edge to form penetrating or feeding points.

After the bending of the band into the segmental form indicated in Fig. 2 the lower extremities of the blades are curved inward toward their lower extremities, whereby the adjacent edges of contiguous blades converge toward their lower ends, as shown in Figs. 1 and 2. This brings the lower extremities of the blades close to the axis of rotation of the head with the abrupt lower extremities thereof co-incidental with tangents of a circle struck from the axis of rotation. Thus, the blades are contracted in width toward their lower extremities, and the intervals between the front and rear edges of contiguous blades are correspondingly contracted or tapered toward the lower or feeding point of the head, and hence in operation the entire length of each cutting edge operates to cut the soil.

The length of the band is insufficient to form a complete circle of the diameter assumed for the head of the auger, and hence



the extremities thereof are spaced apart a distance equal approximately to a quadrant, this space serving as an outlet through which the contents of the downwardly tapered or  
 5 conical pocket formed by the blades may be discharged after the removal of the auger from the hole. The band is held in the desired shape by means of the yoke F, which is provided at the extremities of its arms with  
 10 lateral ears E bearing against the inner surface of the band at diametrically opposite points, and is secured thereto by means of rivets or similar devices. A socket is formed at the center of the yoke into which is  
 15 threaded the lower extremity of a tubular shank B, and threaded upon the upper extremity of this shank is a T-coupling or elbow C into which is fitted the handle H.

The above described construction of the  
 20 auger provides sharpened or acute angled feeding points at the lower ends of the cutting edges of the blades to insure rapid penetration of the blades, and as the soil is cut or loosened it is received in the pocket or receptacle inclosed by the blades upon three  
 25 sides, and, therefore, when the pocket has become filled the auger may be withdrawn from the hole without causing the discharge of its contents until turned with the open side  
 30 downward, when the soil will fall out readily and without the use of auxiliary means to attain such object.

The downwardly tapered spaces between contiguous edges of the blades prevent the  
 35 loose earth from falling therethrough during the lifting of the auger, and when the auger is withdrawn from the top of the hole the soil may be prevented from escaping prematurely from the discharge opening in the side by  
 40 holding such opening uppermost until the auger is suspended over the point at which it is desired to deposit the soil.

From the above description, it will be seen, furthermore, that the construction of the au-  
 45 ger head is simple, the same comprising two parts, of which one is the series of blades integral with a common band, and a yoke by

which the band is held in its operative position, and owing to this simplicity of construction the auger may be constructed at a mini- 50  
 mum cost, and at the same time will possess the maximum strength for the materials employed.

It is obvious that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention. 55

Having described my invention, what I claim is— 60

1. An earth auger having a single continuous segmental band separated at its extremities to form an outlet opening approximately equal to a quadrant, and blades formed integral with and depending from the lower edge 65  
 of the band and curved inward toward their lower extremities approximately to the center of rotation of the head, said blades being tapered in width toward their lower extremities, and the intervals between contiguous 70  
 edges of the blades being correspondingly tapered toward the lower extremities thereof, substantially as specified.

2. An earth auger comprising a yoke provided with diametrically opposite arms, a continuous band of circular form having its ends 75  
 separated a distance approximately equal to a quadrant, and blades depending from and integral with said band and adapted to be struck from the same blank therewith, said 80  
 blades having beveled cutting edges arranged perpendicular to the upper and lower edges of the band, rearwardly and upwardly inclined rear edges, and beveled lower extremities, whereby acute angles are formed at the lower 85  
 extremities of the cutting edges, said blades being curved inward or toward the axis of the head at their lower extremities to form downwardly tapered spaces between their contiguous edges, substantially as specified.

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Witnesses:

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