E. O. & E. Carrington,

Grinding Augers.

No. 76,301. Patented Apr. 7, 1868.

Fig. 1.

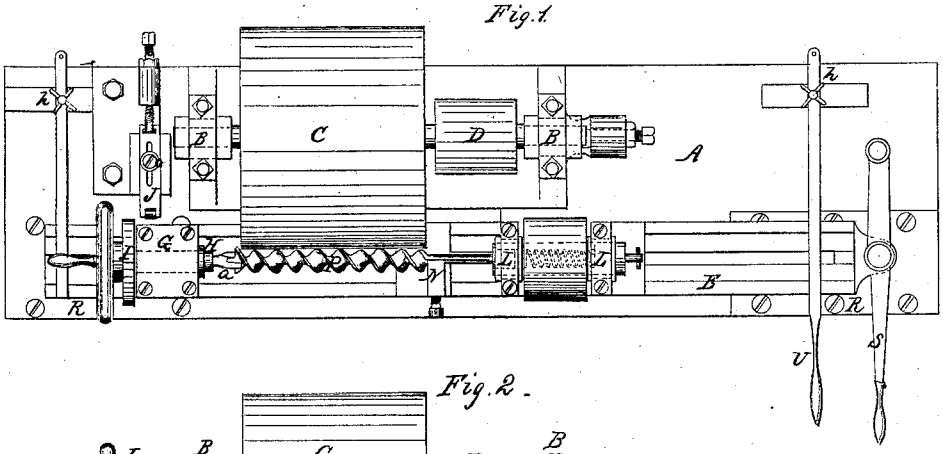


Fig. 2.

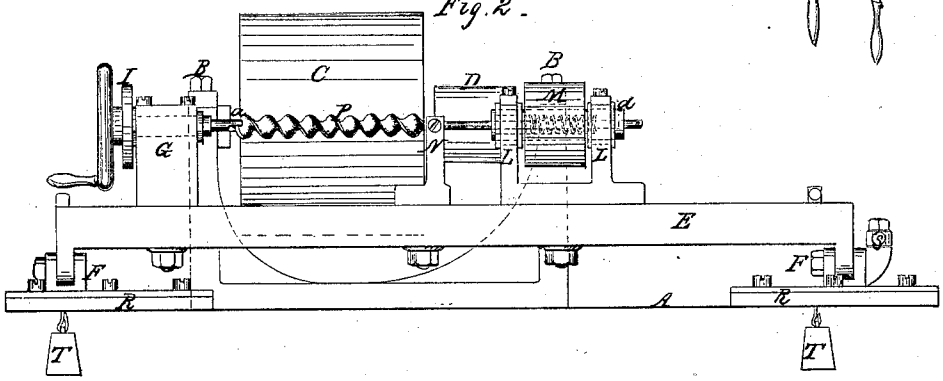


Fig. 3.

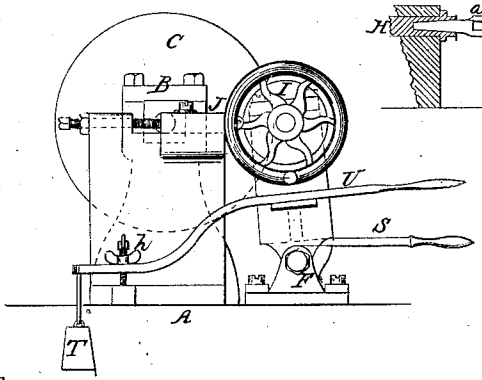
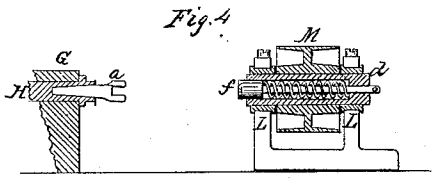


Fig. 4.



Witnesses

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E. O. CARRINGTON AND EDWIN CARRINGTON, OF WEST MERIDEN, CONNECTICUT.

Letters Patent No. 76,301, *dated April* 7, 1868.

IMPROVEMENT IN MACHINE FOR GRINDING AND CUTTING DOWN AUGERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, E. O. CARRINGTON and EDWIN CARRINGTON, of West Meriden, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Apparatus for Grinding and Cutting Down Augers; and we do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top view,

Figure 2, a side view,

Figure 3, an end view, and in

Figure 4 detached parts.

This invention relates to an improvement in the machine patented to us, July 2, 1867. That machine was simply a cutting-down machine, that is to say, forming the cutting-lip of the auger; and our invention consists in combining a grinding-apparatus with the cutting down, so that the edge of the pod is perfectly ground to the proper size, and the cutting down performed in the same machine.

To enable others skilled in the art to construct and use our improvement, we will proceed to describe the same as illustrated in the accompanying drawings.

A is the bed-plate, supporting in bearings, B, a grinding-cylinder, C, the said cylinder driven by the application of power thereto through the pulley D. The surface of the said cylinder may be prepared in any known manner to produce the required effect upon the auger to be ground. E is a swinging bar, pivoted at F, so as to turn freely to or from the cylinder, and in a bearing, G, on the said swinging bar, is arranged a mandrel, H, provided with a dog, *a*, to receive the screw or point of the auger, as more clearly seen in fig. 4, the point of the auger passing between the two prongs of the dog, and so that the two prongs will bear each upon the blank-cutter edges, and so that when the said mandrel is caused to revolve, it will revolve the auger in connection therewith. The said mandrel has fitted upon it a cam, I, of the form required for the cutter of the auger, and in the rear of the bearing G is arranged an adjustable guide, J, so that when the said cam bears against the said guide J, the bearing G, swinging with the frame, moves to or from the said guide, according to the form of the cam, as more fully hereafter described.

In another bearing, L, on the swinging bar E, is arranged a pulley, M, upon a mandrel, *d*, and within the said mandrel is placed a head, *f*, (see fig, 4,) formed to receive the shank of the auger, and forced against the said shank by a spiral spring within the mandrel, as seen in fig. 4. We also arrange upon the frame E a rest, N, for the support of the auger P, as denoted in figs. 1 and 2. The spring is employed within the mandrel to press the point of the auger into the other mandrel. The slide E is arranged so as to move transversely in guides R, by means of the lever S, as clearly seen in fig. 1, and is pressed forward toward the cylinder by means of weights, or their equivalents, T. A lever, U, attached to the frame, serves to tip the frame from the cylinder, and adjusting-screws, *h*, regulate the distance to which the frame may be tipped.

The auger is inserted into its position as seen in figs. 1 and 2, and caused to revolve by the application of power to the pulley M or to the other mandrel, and borne against the revolving cylinder C, and the surface of the pod is ground down to as near the cutter as the pod is made of an equal diameter, and continues to so revolve against the cutter until the pod is of the proper diameter and its edge finished, then slide the frame to the right, so as to bring the cutter part to the front of the cylinder, and this operation brings the cam I into contact with the guide J, and the auger continuing its revolving, the cutter is brought to the form denoted by the cam in like manner as the cutter was reduced in our patent before referred to.

The adjustment of the machine for different-sized augers will be readily understood by those acquainted with the use of similar machines.

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

The arrangement of the swinging bar E, carrying one mandrel, H, and the other mandrel, *d*, the said man-

drel *d* provided with a self-adjusting head, *f*, and combined with the grinding-cylinder C, the whole operating in the manner substantially as set forth.

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