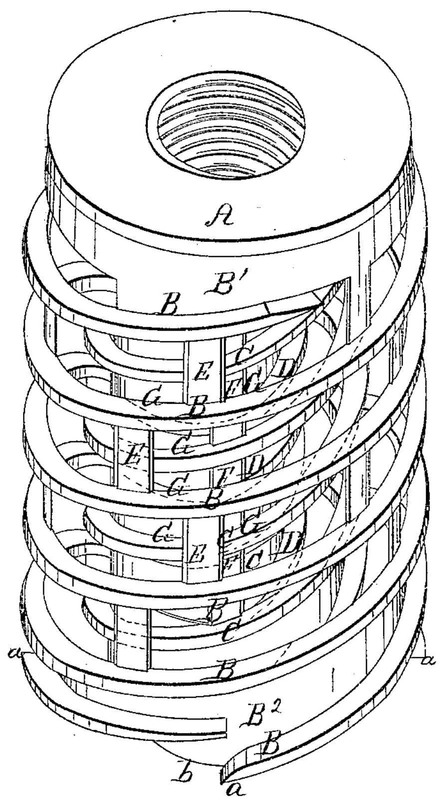
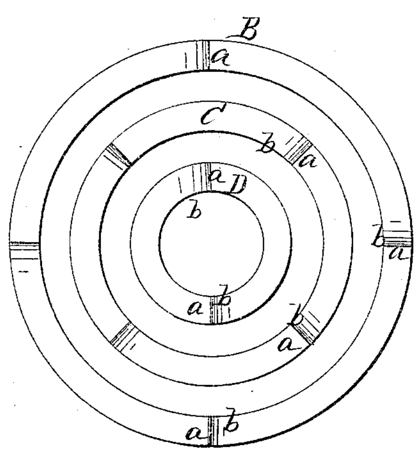
A. Wyckoff,

Hollow Auger.

No. 51,252. Patented Nov. 28, 1865.





Witnesses;
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UNITED STATES PATENT OFFICE.

ARCALOUS WYCKOFF, OF ELMIRA, NEW YORK.

IMPROVEMENT IN MACHINES FOR BORING TUBES.

Specification forming part of Letters Patent No. **51,252**, dated November 28, 1865.

To all whom it may concern:

Be it known that I, ARCALOUS WYCKOFF, of Elmira, in the county of Chemung and State of New York, have invented a new and useful machine for cutting nests of concentric cylindrical rings of wood for making buckets, kegs, boxes, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, made part of this specification, and to the letters of reference thereon, the same letters in the different views referring to identical parts.

The nature of my invention consists in constructing annular cutters which are arranged concentrically, by the multiplication of which a log can, by one operation of the cutting and other machanism, be cut into as great a number as may be desired of cylindrical rings, from which various sizes of buckets, kegs and boxes can be made, thus saving both labor and material.

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

Figure 1 is a perspective view of the cutting apparatus. In the case illustrated three cutters are employed. Fig. 2 is an end view showing the cutting-points and the relation of the annular cutters.

In describing the apparatus, following the drawings, I refer to three systems of cutters. It must be understood that two or any greater number may be employed. The same description would apply to any number, and the number three is only selected for convenience of illustration, and not as limiting the number for actual use. It is ordinarily made of cast-iron, plane upon its back, as shown in the drawings, but having on the other side a series of diminishing cones, like the cone-head of an ordinary turning-lathe. There are as many of these diminishing cylinders as there are to be concentric cutters in the gang. They are about half an inch wide on their faces, and have screws cut to receive corresponding female screws on the cutting-rings.

In making the spiral flanges B C D &c., I use wrought-iron pipe of the required diameter, and about a quarter of an inch in thickness. This is cut away, leaving the supports E F, which are filed thin and cut away to a feather edge on the edge toward which they revolve in cutting. At each extremity a ring of metal is left, as shown at B' and B^2. The inner side at B' has a female screw cut in it, and it is screwed onto and firmly attached to the cone on the lower side of it. These spiral flanges may be made in various modes. I have given what I regard as the best though not the cheapest mode. The inner one, D, is not cut away, as are the outer ones, but is left with spiral flanges D projecting from the surface of the cylindrical ring. It is an ordinary annular auger. To the ring left at the lower extremity the cutters are attached. There are four of these in each ring. They have a cutting-edge, *a*, perpendicular to the axis of rotation, and the portion *b*, which connects the cutting-points *a*, is also ground to a sharp edge. These cutters are formed of a steel ring riveted to the spiral flanges, as described. Similar flanges are thrown up upon the surface of these steel rings, and having the same spiral declivity as the spiral flanges B, C, or F, as the case may be. Two of these steel cutting-flanges are opposite to one another, and so constructed that they shall be in continuation of the flanges B B, &c. The other two, placed midway, rise on the same spiral, and terminate above the cutting-points *a a* of the above-described cutters. Such a space will be left between the cutters B, C, and D as will leave the wood of the thickness it may be required for the particular use to which it is destined. In the apparatus represented in the drawings the cut will be about a quarter of an inch wide. It may be made less and save material without impeding the work.

The apparatus thus combined is attached, by a screw working into the head A, to the mandrel of a lathe.

I have described one form of cutters. Other devices may be easily conceived which may be substituted. As, for instance, saw-teeth could be arranged to saw instead of cut away the wood. I suppose myself to be the first to construct an apparatus for cutting concentric cylindrical rings of wood suitable for the purposes indicated, and I do not wish to confine my patent to the particular mode of arranging cutters set forth; and I desire to cover, also, the case of several stocks running with sepa-

rate belts when the annular cutters are concentric and the cylindrical stocks revolve upon the same axis of rotation.

Having fully explained the nature and operation of my invention, what I claim as my invention, and seek to secure by Letters Patent, is—

1. The combination of two or more concentric annular cutters, the stocks supporting which have a common axis of rotation.

2. The combination of the head A with two or more spiral stocks having a common axis supporting concentric annular cutters, when constructed substantially as and for the purpose set forth.

3. Constructing the cylindrical frames exterior to the central one in a gang of annular cutters, having spiral flanges with open spaces between them, for the free discharge of the cuttings, substantially as set forth.

4. The arrangement of the supports for the open spiral stocks, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARCALOUS WYCKOFF.

Witnesses:

R. MASON,

JOS. PECK.