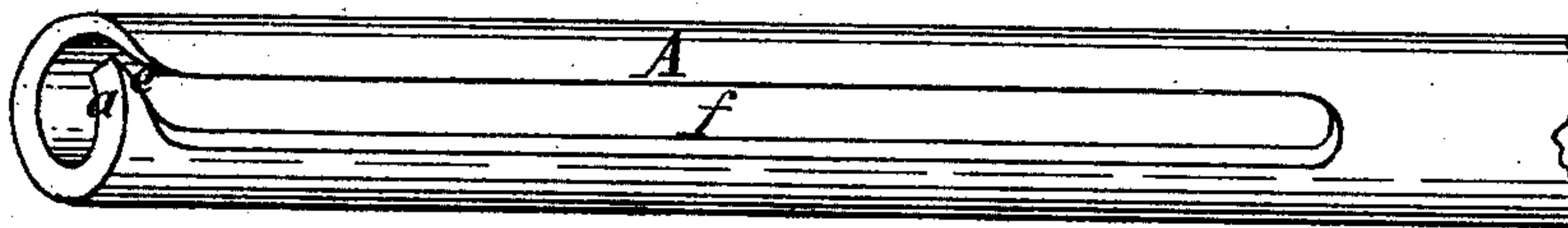


C. H. MILLER.  
Hollow Auger.

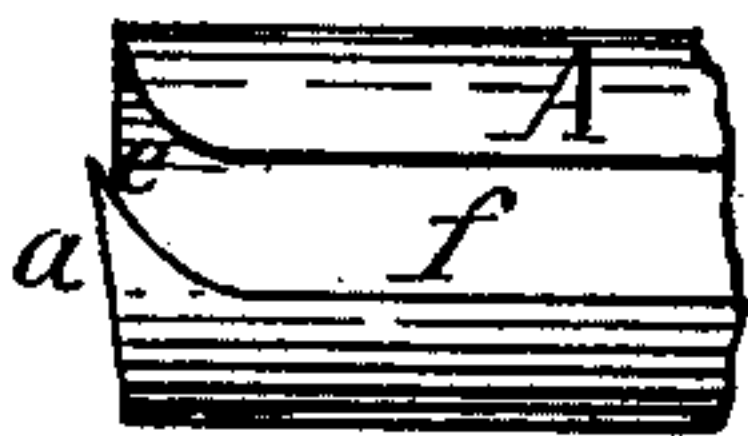
No. 221,692.

Patented Nov. 18, 1879.

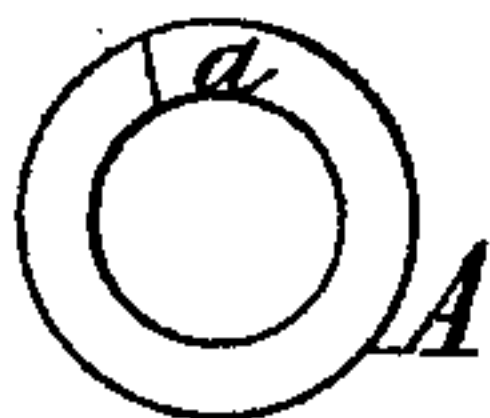
*Fig. 1.*



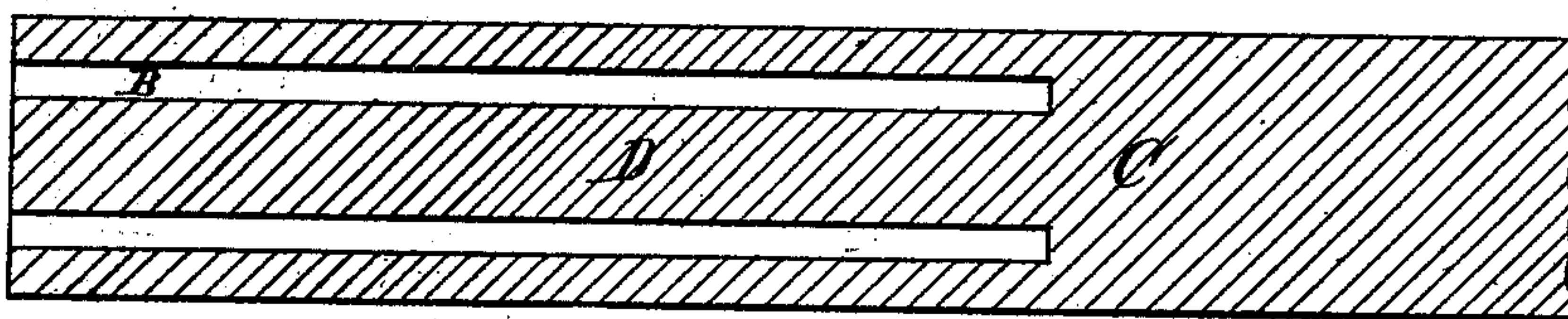
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*George H. Sykes.*  
*Chas. J. Buchheit.* } Witnesses

*Charles H. Miller.* Inventor  
*by Edward Wilhelm.* Attorney

# UNITED STATES PATENT OFFICE.

CHARLES H. MILLER, OF BUFFALO, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO EDWARD S. WARREN, OF SAME PLACE.

## IMPROVEMENT IN HOLLOW AUGERS.

Specification forming part of Letters Patent No. **221,692**, dated November 18, 1879; application filed March 31, 1879.

*To all whom it may concern:*

Be it known that I, CHARLES H. MILLER, of the city of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Hollow Augers, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

My invention relates to that class of hollow augers which are designed to cut an annular groove, leaving "land" on the inside and outside of the groove.

My improved implement is more especially designed for boring the cavities of spring curtain-rollers, so as to form, instead of a cylindrical bore, as heretofore, an annular groove, leaving in the center of the bore a round rod or bar formed out of the curtain-roller, and remaining connected therewith. In order to accomplish this purpose, it is necessary that the auger should be so constructed as to run perfectly true, or prevent it from running toward the soft side of the wood, which would result in the splitting of the roller.

My invention consists in the particular construction of the auger, as will be hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a perspective view of my improved auger. Fig. 2 is a side view of the cutting end of the auger. Fig. 3 is an end view thereof. Fig. 4 is a sectional view of a curtain-roller provided with the annular bore.

Like letters of reference refer to like parts in each of the figures.

A represents the body of the auger, consisting of a metallic tube or hollow cylinder, the outer diameter of which corresponds with the diameter of the bore, B, to be formed in the curtain-roller C, while its inner diameter corresponds with the diameter of the round bar D left centrally within the bore.

a represents the wedge-shaped cutting-lip, formed with the tube A, so as not to project beyond the outer or inner surface thereof.

e is an inclined slot formed in front of the cutting-lip a, for the passage of the chips; and f, a longitudinal slot, of greater width, formed in the tube A, so as to connect with the slot e, for receiving the chips. The tube is provided with a suitable tang for connecting it with the means for turning the auger.

In applying my improved implement to curtain-rollers, the bore is started with an ordinary auger of proper size. My improved auger is then applied and cuts an annular recess or cavity in the roller, leaving a thin cylindrical shell on the outside of, and a central round bar within, the bore, as represented in Fig. 4.

The auger is guided in its work by its outer surface running in contact with the outer shell and its inner surface running in contact with the central bar, thereby preventing the auger from working out of center toward the soft side of the wood.

The chips are received in the slots e and f as the boring proceeds.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A hollow auger composed of a tube or hollow cylinder, A, provided with cutting-lip a, arranged within the outer and inner surfaces of the tube, and having the inclined slot e and longitudinal slot f, for the reception of the chips, so that both the inner and outer surfaces of the tube serve to guide the auger in its work, substantially as and for the purpose hereinbefore set forth.

CHARLES H. MILLER.

Witnesses:

CHARLES J. BUCHHEIT,  
GEORGE H. SYKES.