2 Sheets—Sheet 1.

# O. D. HUNTER.

## TUMBLING BARRELS.

No. 179,455. Patented July 4, 1876.

Fig. 1.

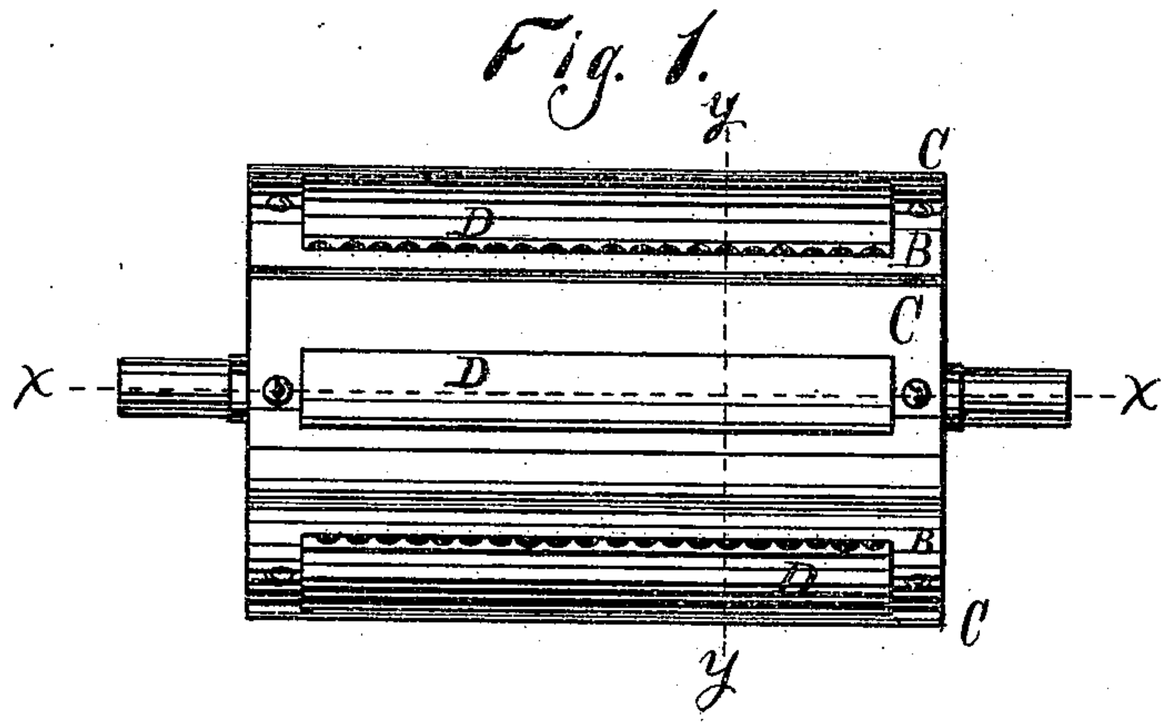
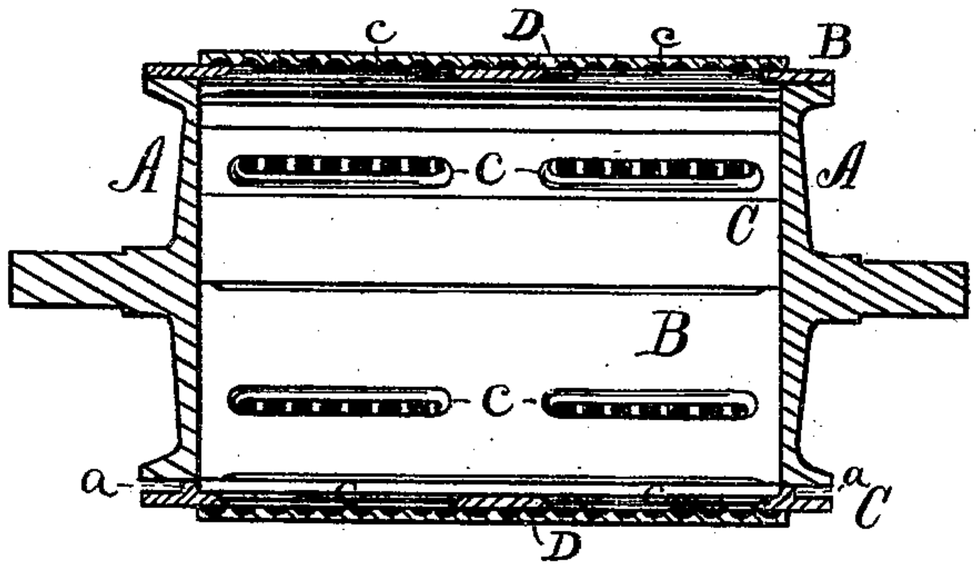



Fig. 2.




Witnesses.

H. N. Gale.

Henry A. Mitchell

Inventor.

Orange D. Hunter.

By James Shepard Atty.

2 Sheets—Sheet 2.

# O. D. HUNTER.

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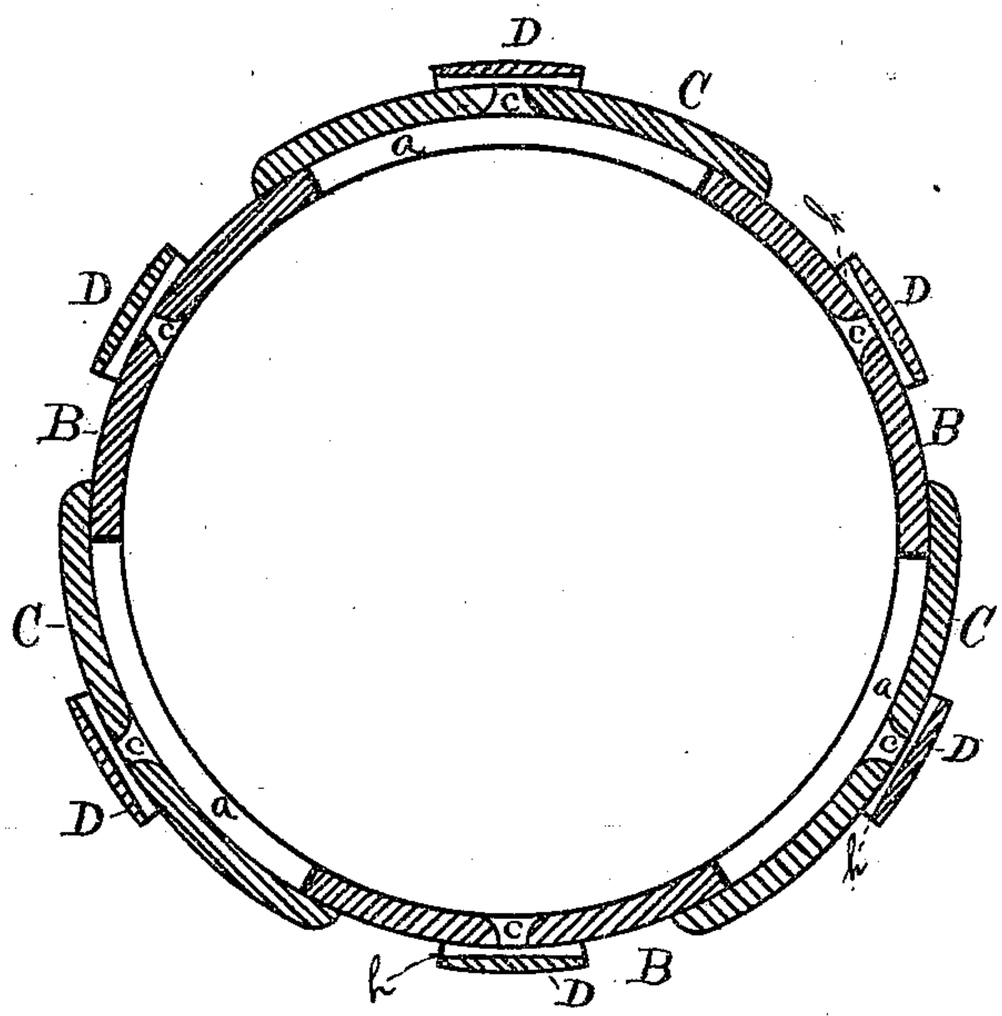



Fig. 3.

Fig. 4.

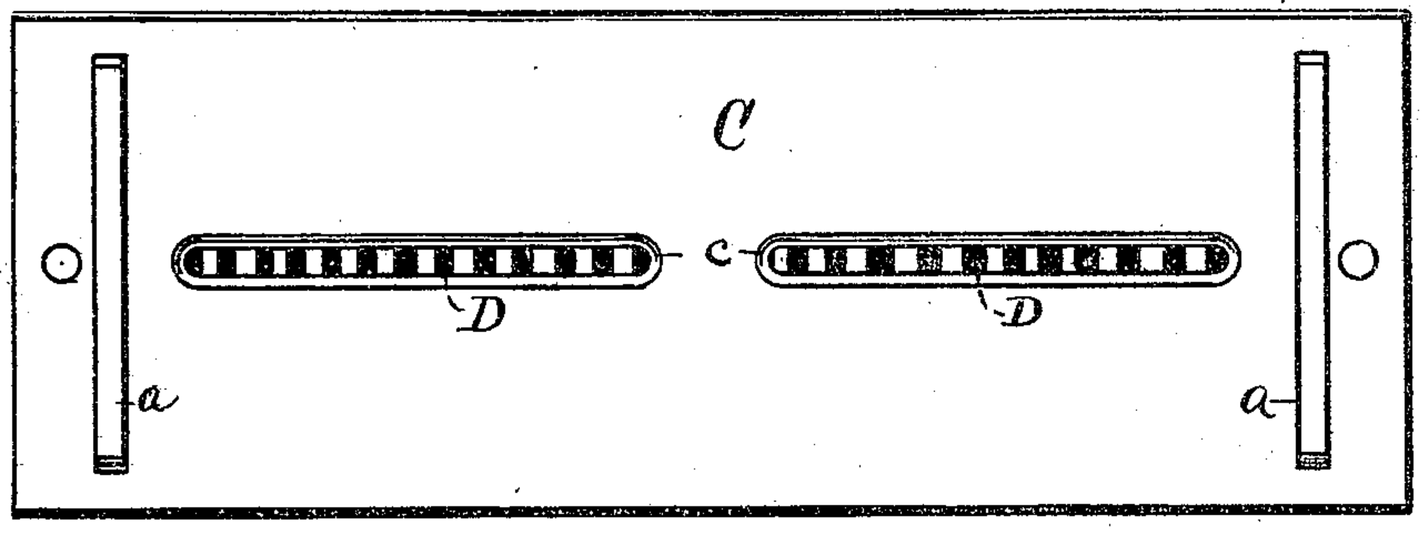
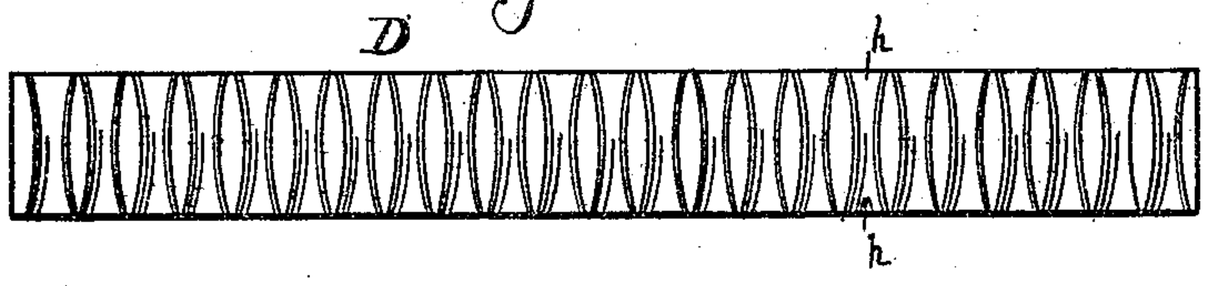



Fig. 5.




Witnesses.

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Inventor.

Orange D. Hunter.

By James Shepard Atty.

# UNITED STATES PATENT OFFICE.

ORANGE D. HUNTER, OF TERRYVILLE, CONNECTICUT, ASSIGNOR TO ANDREW TERRY & CO., OF SAME PLACE.

## IMPROVEMENT IN TUMBLING-BARRELS.

Specification forming part of Letters Patent No. **179,455**, dated July 4, 1876; application filed June 2, 1876.

*To all whom it may concern:*

Be it known that I, ORANGE D. HUNTER, of Terryville, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Tumbling-Barrels, of which the following is a specification:

My invention consists, first, in a tumbling-barrel composed of two series of concentric staves placed on two different circles and overlapping each other; second, in the staves, every alternate one of which has transverse ribs in combination with the two circular heads; and, third, in the staves of a tumbling-barrel, having sand-openings formed in the body thereof, in combination with transversely-fluted caps placed in front of said openings, all as hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of a tumbling-barrel which embodies my invention. Fig. 2 is a longitudinal section of the same taken on the plane indicated by line *x x* in Fig. 1. Fig. 3 is a transverse section of the same, taken on the plane indicated by line *y y* in Fig. 1; and Figs. 4 and 5 are views of detached parts of the same.

The barrel is composed of two circular heads, two series of concentric staves overlapping each other, and fluted caps placed over the sand-openings of the staves. The two circular heads are provided with short axles for hanging in a suitable frame, as in ordinary tumbling-barrels. The staves in a transverse direction are segments of two different sizes of hollow cylinders, of such sizes that one will fit within the other. Said staves are placed concentrically on the heads A A, and secured thereto by bolts or screws in any proper manner. Every alternate stave B, which constitutes one series, are segments of the smaller cylinder, and are secured directly to the periphery of the heads A A, and the other alternate staves C, constituting the other series of staves, are segments of the larger cylinder, and are secured at a distance from the periphery of the heads just equal to the radial thickness of the staves B, and with their edges overlapping the edges of the latter. Upon each end of the staves C, an inside view of which is shown in Fig. 4, I form a transverse rib, *a*, curved to correspond with the curve of the stave, the length of said rib being equal to the distance between the staves B, and the radial thickness of which is equal to the thickness of said staves B. Inasmuch as the staves C are wider than the distance between the staves B, so that their edges may overlap, it will be seen that the length of the rib is less than the width of the stave on which it is secured, and the location of it with reference to the length of the stave is such that said ribs *a*, when the staves are secured to the heads, rest upon their periphery and wholly fill the space or opening, which would otherwise be left between the heads and the staves C, as clearly shown in Fig. 3, thereby making the barrel tight at that point. By placing the staves B C concentrically on two different circles and having overlapping edges, it will be noticed that the inner surface of the barrel is irregular, which irregular surface will catch the work being tumbled and cause it to turn over instead of merely sliding down the sides of the barrel, and therefore it will be unnecessary to bolt ribs to the inside of the barrel for such purpose, as is often done in ordinary tumbling-barrels. The inside corners of the staves B may be left square and full, or may be beveled or rounded off, as may be desired.

In the body of the staves B and C I form sand-openings *c c*, which, in a transverse direction, are beveled, being the widest open upon the inside of the stave, as clearly shown in Fig. 3. Upon the outside of each stave, and directly in front of and covering the sand-openings *c*, I place fluted caps D, the same being fluted or grooved transversely upon their inside, (shown at *h*,) which grooves *h* are the narrowest at the transverse middle of the cap and wider toward each end to the edge of the cap, as shown in Fig. 5, which is a face view of the inside of said cap. One of the staves may be arranged for ready removal in order to furnish convenient means of access to the interior of the barrel and means for closing it, or any other ordinary means for opening and closing the barrel may be provided.

The barrel is designed for cleaning castings, and has for its object cheapness of construction, durability, and to furnish means for preventing work having small and long prongs

from catching, and thereby breaking in the act of tumbling within the barrel. The fluted caps allow free escape for the sand, and, being the narrowest at the point directly in front of the openings *c c*, and widening to the edge of the cap, anything that can enter them will readily be discharged through them. By placing the fluting or grooves in front of the openings *c* no prong or point can be presented to them only in a perpendicular direction to their lengths, and therefore no prong or point can catch in them and be broken off by the pressure of the other work in the barrel. By making the staves overlap each other instead of abutting, nothing can work in between the edges of the staves to wedge them apart; and also by so overlapping the staves the barrel can be made at less cost. The sand-openings *c*, made in the body of the staves and provided with the fluted cap, are, of course, applicable to any ordinary tumbling-barrel, whether round or angular in cross-section; and it is also immaterial to said sand-openings and fluted caps in what direction the barrel shall be revolved.

I claim as my invention—

1. A tumbling-barrel composed of two circular heads, A A, two series of concentric staves, B C, placed on different circles and overlapping each other, substantially as described.

2. The alternate staves B and C, the latter provided with transverse ribs *a a* of less length than the width of said staves, and of a radial thickness equal to that of the staves B, in combination with the heads A A, substantially as described, and for the purpose set forth.

3. The staves of a tumbling-barrel, having the sand-openings *c* formed in the body thereof, in combination with the transversely-fluted cap D, placed in front of said openings, substantially as and for the purpose specified.

ORANGE D. HUNTER.

Witnesses:

GEORGE E. BUSHNELL,

N. TAYLOR BALDWIN.