

(No Model.)

J. HENDERSON, Jr.
TUMBLING BARREL.

No. 423,250.

Patented Mar. 11, 1890.

Fig. 1

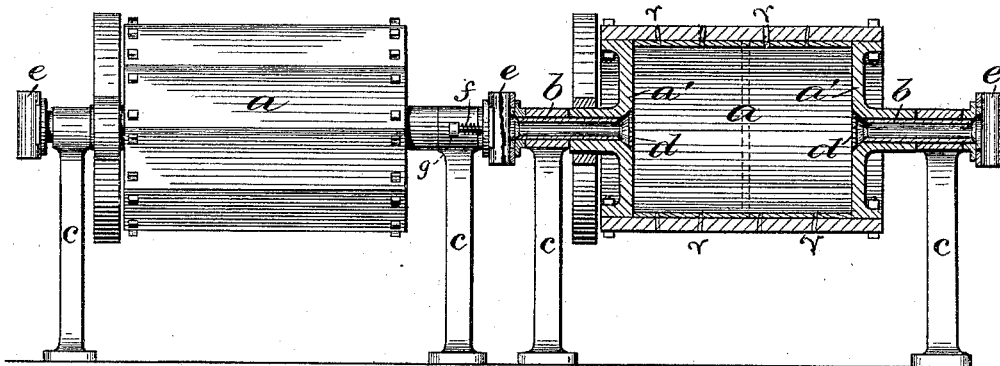


Fig. 2

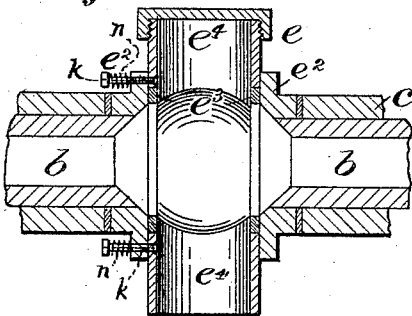


Fig. 3

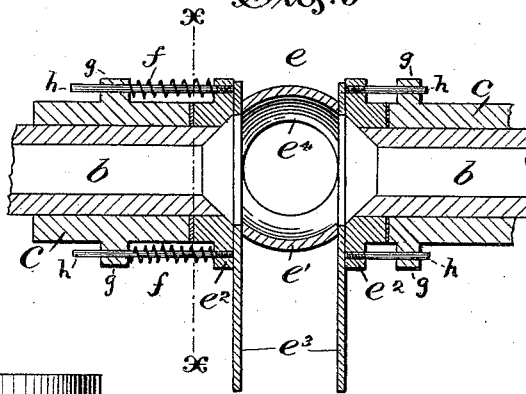
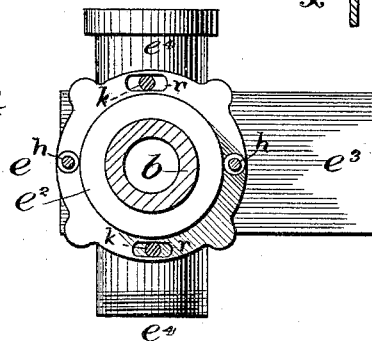


Fig. 4



Witnesses:
Harry R. Williams,
John Edwards Jr.

Inventor,
John Henderson Jr.,
By James Shepard

UNITED STATES PATENT OFFICE.

JOHN HENDERSON, JR., OF WATERBURY, CONNECTICUT.

TUMBLING-BARREL.

SPECIFICATION forming part of Letters Patent No. 423,250, dated March 11, 1890.

Application filed September 2, 1889. Serial No. 322,772. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENDERSON, Jr., a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Tumbling-Barrels, of which the following is a specification.

My invention relates to that class of tumbling-barrels which employ an air-blast for removing dust or débris; and the main object is to provide a tumbling apparatus wherein a double exhaust-blast is used, and the dust and débris do not have to be drawn as great a distance as in prior barrels, and thereby it may be more quickly removed, thus lessening the amount of tumbling required to clean the articles, so that the blunting of their sharp edges and corners is avoided.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of my barrel. Fig. 2 is a detailed view in central longitudinal vertical section of the ends of the journals and double wind-box. Fig. 3 is a central longitudinal horizontal section of the same. Fig. 4 is a cross-section of the journal on the broken line *x x* of Fig. 3.

The letter *a* denotes the tumbling-barrels, which are of usual construction and are driven in any ordinary manner. These barrels are borne on hollow cylindrical journals or shafts *b*, which may be keyed to or cast integral with the heads *a* of the barrels, the journals being supported by any convenient standards *c*. Perforated plates *d* are secured over the opening through the journals inside the barrels, while to the opposite ends of said journals wind-boxes *e* are connected, the box between two adjacent barrels being called a "double" box, as two journals open into it, and those at the extremities "single" boxes, as but one journal opens into them. These wind-boxes *e* are formed of three principal parts. The central hollow body *e'* has a spherical middle portion, with two sides slabbed off, from the rounded sides of which middle portion, above and below, the pipe ends *e¹* project for convenient connection with the draft-pipe of the exhaust apparatus. Two side flanges *e²* form the other two parts of the wind-boxes, which side flanges have a central opening that fits and receives the

outer ends of the journals. The confronting faces of the flanges bear against the slabbed-off portion or flattened sides of the central body *e'*. Lugs *g* are formed on or secured to the upper part of the standards *c*, (or the journal-box mounted thereon,) from which steady pins or rods *h* extend to the flanges *e²*. The central body is secured to either one or both of the flanges by means of bolts *k*, Fig. 2. These bolts on one side of the wind-box I make long to place a spring *n* between the flange and the nut on the bolt, and I also place springs *f* on the steady-pins *h* at one or both sides of the wind-box. The wind-boxes are also provided with sliding gates *e³* for cutting off the blast from either barrel when desired—as, for instance, when one barrel is in use and the other idle.

Tumbling-barrels are oftentimes moved horizontally at one end to ship them into and out of gear with their driving mechanism, and in such cases I make provision to have one flange of the double wind-box move with the journal at that end, while the central body and other flange remain stationary. To do this, it is only necessary to slot the flanges where the bolts *k* pass through them, as at *r*, Fig. 4, and provide the bolts with springs *n*, Fig. 2, so that they may not clamp the flange too tightly. It is not necessary that the central body and flange on the other side shall be bolted together, as the journal will hold it up and the springs *f* will keep the parts pressed together. If bolts are used on this side, the springs *k* may be omitted.

By making the wind-boxes of three parts, as described, the parts may be assembled by first slipping the two flanges upon the confronting journals of the two barrels, and then placing the central body between them and inserting the fastening-bolts.

The exhaust is connected to either the upper or lower set of pipe ends, the opposite ends being closed by an ordinary cap and the air drawn from the barrels *a* through the hollow journals *b* at both ends thereof. The air may enter the barrels through the periphery, as specified in my Patent No. 348,011, whereby its velocity is accelerated; or it may enter the barrel at any point other than the points of exhaust. I prefer to admit air in between the staves by not fitting them with

an air-tight joint; but they may be fitted air-tight and perforated with small holes, as at *r* of the right-hand barrel in Fig. 1. If properly proportioned to the exhaust, practically no dust or dirt will be discharged through said peripheral openings. One advantage of drawing the air simultaneously from the ends of the barrel and admitting air at or near the periphery is that it is practical to place a central partition in any one barrel, as indicated by the broken lines at the middle of the right-hand barrel in Fig. 1, to divide the same into two compartments, which division of the barrel is impractical where the air is drawn in through one end of barrel and out through the opposite end.

I am aware that a prior patent shows a barrel made tight except at the journal at each end, both of which journals are hollow and one connected with an exhaust, while the other serves as the inlet, and the same is hereby disclaimed.

I claim as my invention—

1. The combination of a tumbling-barrel having a head at each end, inlet-passages outside of the central portion of each head, and exhaust-air passages through said central portion of each head, a wind-box secured and communicating with the central portion of each of said heads, and pipe ends connected with both wind-boxes and with an exhaust apparatus for drawing air into the bar-

rel and simultaneously out through said central portion of both heads, substantially as described, and for the purpose specified.

2. In combination with a tumbling-barrel having a hollow journal, the standards having lugs *g*, a stationary wind-box consisting of a hollow body *e'* and a side flange, into which the end of said hollow journal is fitted, a pipe end adapted to make connection with the draft-pipe from an exhausting apparatus, and steady-pins extending from said side flange to said lugs, substantially as specified.

3. The combination of two adjoining tumbling-barrels having hollow journals and the wind-boxes consisting of a central body and two side flanges fitted to said hollow journals, one of which flanges is fitted on said central hollow body with adaptation to slide horizontally thereon, substantially as described.

4. The combination of two adjoining tumbling-barrels having hollow cylindrical journals, the standards on which they are mounted, and the wind-boxes consisting of a central hollow body, two side flanges fitted to said journals, the steady-pins *h*, and the springs *f*, substantially as specified.

JOHN HENDERSON, JR.

Witnesses:

MICHAEL J. RYAN,
JOHN MADDEN.