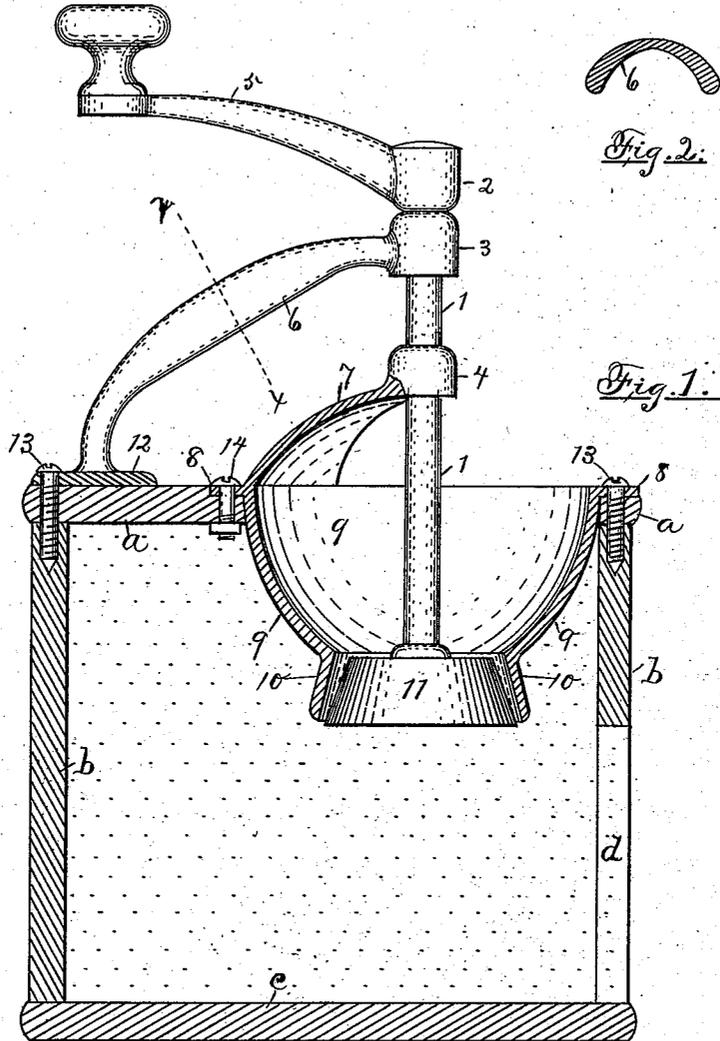


(No Model.)

J. M. WADDEL.  
COFFEE MILL.

No. 382,742.

Patented May 15, 1888.



Witnesses:  
John F. Apperaman.  
Charles O. Beufling.

Inventor:  
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per E. P. Robbins, M. E.,  
attorney.

# UNITED STATES PATENT OFFICE.

JOHN M. WADDEL, OF GREENFIELD, OHIO.

## COFFEE-MILL.

SPECIFICATION forming part of Letters Patent No. 382,742, dated May 15, 1888.

Application filed February 8, 1888. Serial No. 263,371. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. WADDEL, a citizen of the United States, residing at Greenfield, in the county of Highland and State of Ohio, have invented certain new and useful Improvements in Coffee-Mills; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements of hand or family coffee-mills.

The object of my invention is to improve the construction of hand-mills now in use so that they will be more durable, less noisy, and more convenient to use.

The invention consists in the handle for the mill and the combination of the handle with the mill-box and the bearings for the grinding-shaft.

Figure 1 is a sectional view of my improved mill, and Fig. 2 shows a cross-section of the handle on the line  $xx$  of Fig. 1.

1 is the grinding-shaft; 2, the crank-boss; 5, the crank; 3, the box-handle boss constituting one bearing for the shaft. 4 is the other shaft-bearing, which is supported by the hopper-cover part 7.

9 is the hopper, and 8 is its flange, by which it is fitted to the top  $a$  of the box  $abc$ . The flange is secured by screws 13. Bolts 14 may be used.

10 is the part having the stationary grinding-surface, and 11 is the conical grinding-wheel having a conical grinding-surface, and is connected to and supported by the shaft 1.

$d$  is a doorway through which any suitable receptacle may be passed in which to catch the ground coffee.

The box  $abc$ , hopper 9, part 10, wheel 11, shaft 1, bearing 4, and hopper cover 7, as shown here, have previously been so used. The part 7 may be made integral with the hopper-casting, as shown, or may be attached to it or to the top  $a$ . A similarly-shaped cover-part may be removably attached on the other side of the hopper to complete the cover.

The handle 6 is preferably made of the shape shown, and where its cross-section on the line

$xx$ , Fig. 1, is as shown in Fig. 2, and where the upper end is made integral with a boss, 3, for a bearing for the grinding-shaft 1, and the lower end is provided with an extension, 12, which may be secured to the top of the box by screws, as 13.

Fig. 1 shows the hopper 9 placed eccentric to the box. In case it is placed centrally, the handle 6 may be curved around over the edge of the top of the box and have its lower end fastened to the side of the box. The handle 6 and the cover-part 7 could be made integral, so that both bearings 3 and 4 would be rigidly connected; but the construction shown provides two firm bearings for the grinding-shaft 1 and prevents the wobbling and rapid wear which occur with hand-mills having only one bearing.

Such mills not only wear in the shaft-bearing; but when the shaft runs out of line one side of the grinding-wheel 11 rubs against the stationary grinding-surface of the part 10, which dulls the grinding-surfaces and causes the mill to rattle and soon wear out.

When using former hand-mills, if the box be placed on a table it cannot be conveniently held stationary by the left hand alone while turning the crank with the right hand, and it is equally awkward to hold such a box in one's lap.

The handle 6 shown provides a positive hand-hold, whereby the mill may be held steady, whether placed upon a table or held in the lap.

The combination shown provides for all of these desirable features in a hand-mill.

Any suitable known means may be employed for adjusting the grinding-surfaces with reference to each other.

I claim—

In a hand coffee-mill, the combination of the grinding-shaft 1, having a hand-crank, 5, the hopper-cover 7, having a bearing, 4, the mill-box  $abc$ , and the handle 6, having the shaft-bearing 3 at its upper end and an extension at its lower end for securing it to the box, substantially as set forth.

In testimony whereof I now affix my signature in presence of two witnesses.

JOHN M. WADDEL.

Witnesses:

J. S. BUSH,  
CHARLES MEANS.