E. WATROUS.

Coffee Mill.

No. 80,317

Patented July 28, 1868.

Fig. 2

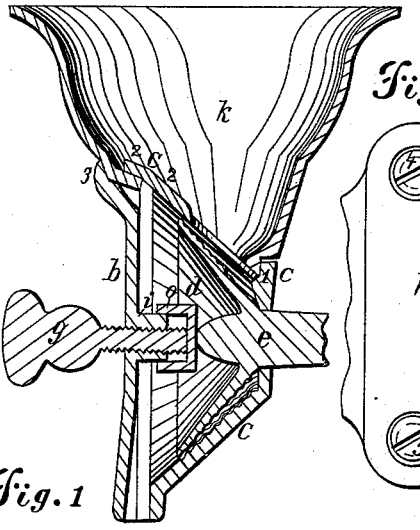


Fig. 3

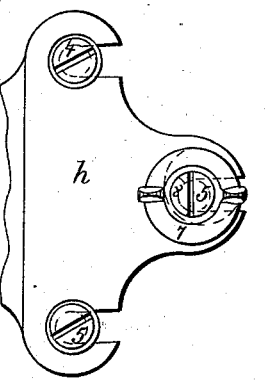
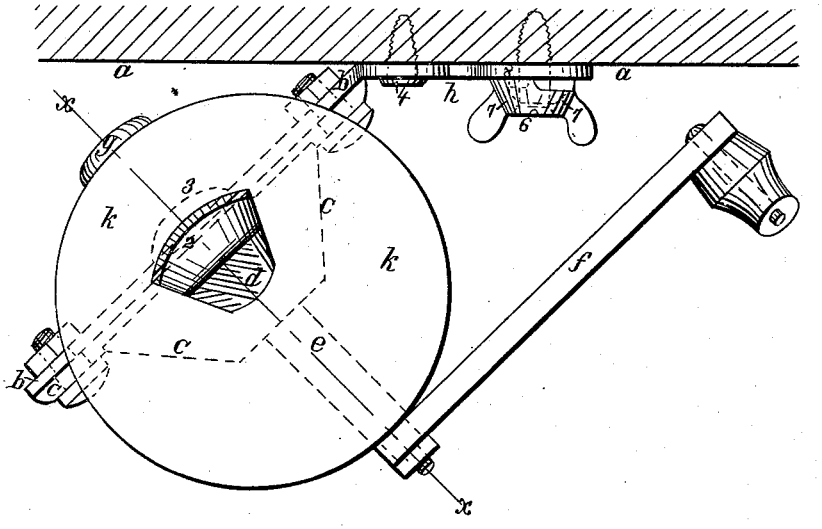


Fig. 1



Witnesses.

Chas. H. Smith

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per L. M. Terrell

Atty

UNITED STATES PATENT OFFICE.

EDWIN WATROUS, OF MYSTIC RIVER, CONNECTICUT.

IMPROVED COFFEE-MILL.

Specification forming part of Letters Patent No. **80,317**, dated July 28, 1868.

To all whom it may concern:

Be it known that I, EDWIN WATROUS, of Mystic River, in the county of New London and State of Connecticut, have invented, made, and applied to use a certain new and useful Improvement in Mills for Grinding Coffee and other substances; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a plan of the said mill, and Fig. 2 is a vertical section of the same at the line *x x*.

Similar letters denote the same parts.

Hand-mills for grinding coffee and other substances usually have a crank-handle on one side, and an adjusting-screw on the other side, whereby to regulate the fineness of the ground material. This has necessitated the attachment of the mill to a post or angle, so that access might be given to the adjusting-screw. It is often very difficult to locate a mill in a convenient position in a house where an angle can be found for thus attaching the mill, and many efforts have been made to vary the mode of adjustment in order that the mill may be attached to a flat surface.

The nature of my said invention consists in a grinding-mill in which the attaching flange or similar device is placed at an inclination to the axis of the mill, whereby opportunity is given for moving the adjusting-screw. The crank turns on one side closely to the supporting surface; but still there is abundant room for the hand, and the entire mill is very compact, and projects but little from the supporting surface. I also make use of a peculiar mode of attaching the hopper to the shell of the mill, so as to facilitate construction, and I make use of a square block upon a stud within the mill, acted upon by the adjusting-screw to prevent the rotation of the burr from turning said adjusting-screw, and I form the attaching flange so that it may easily be removed from the wood-work or support.

In the drawing, *a* represents the flat or nearly flat surface to which the mill is to be attached. *b* is the back portion of the shell; *c*, the conical front portion; and *d*, the nut or burr on the axis *e*, to which the crank *f* is applied, and *g* is the adjusting-screw to regulate the fineness of the material ground. These parts are of usual construction.

The back plate *b* is shown as extended in the form of a flange, *h*, that stands at an angle so that there will be room for the adjusting-screw *g* between the back *b* of the mill and the surface *a*, to which the mill is attachd by the flange *h*.

In this mode of constructing the mill the axis *e* of the nut stands at an inclination to the surface *a*, and hence the handle or crank *f* swings near to, but clear of, said surface *a*, as shown in Fig. 1.

It will be evident that the flange *h* might be turned behind the mill, or supports provided between the back shell *b* and support *a* to sustain the mill at the inclination, as shown, in order that access may be given to the adjusting-screw *g*.

I prefer the mode of forming the flange *h* (shown in Fig. 3) in which there are horizontal slots to allow the flange to slip sidewise behind the heads of the screws 4, 5, and 6, and upon the screw 6 is a hollow clamping-washer, 7, with a notch on one side to allow the lug 8 on *h* to enter as the flange is slipped sidewise to place on the screws, and by turning this washer 7 that block 8 is held within the hollow part of the washer, (see Fig. 1,) and thus the mill is kept firmly in place.

The hopper *k* is formed with a lower portion or mouth inclined to set upon the conical shell *c*, and it is attached in place by the flanges 1 and 2 on the shell *c*, and the flange 3 on the back *b*, which clamps the hopper when the two parts *b* and *c* of the shell are screwed together, thus holding the hopper securely in place.

The screw *g* usually passes through a block or thickened part of the shell *b*, and a spring inside intervenes between the screw and the nut *d*. I make a projection, *i*, upon the inside of the shell *b* of a polygonal form, receiving a hollow polygonal cap, *o*, that intervenes between the screw *g* and the nut *d*, and moves to allow the screw *g* to adjust the nut, but it cannot turn by the action of the mill in grinding. It is less costly than the spring, and not so liable to be broken.

What I claim, and desire to secure by Letters Patent, is—

1. The grinding-mill in which the flange or

attaching device is placed at an inclination to the axis of the mill, for the purposes and substantially as set forth.

2. The hollow clamping-washer 7, in combination with the lug 8 on the flange *h* for attaching the mill when the parts are slipped behind the screw-heads, substantially as shown.

3. The flanges 1, 2, and 3, constructed and applied, as shown, to the shell *b c*, in combination with the hopper, for attaching the latter, in the manner herein set forth.

In witness whereof I have hereunto set my signature this 3d day of December, A. D. 1867.

EDWIN WATROUS.

Witnesses:

AMOS WATROUS,

LEONARD CLIFT.