(No Model.)

E. H. TAYLOR.

MACHINE FOR TUMBLING BOXES.

No. 418,144. Patented Dec. 24, 1889.

Fig. 1.

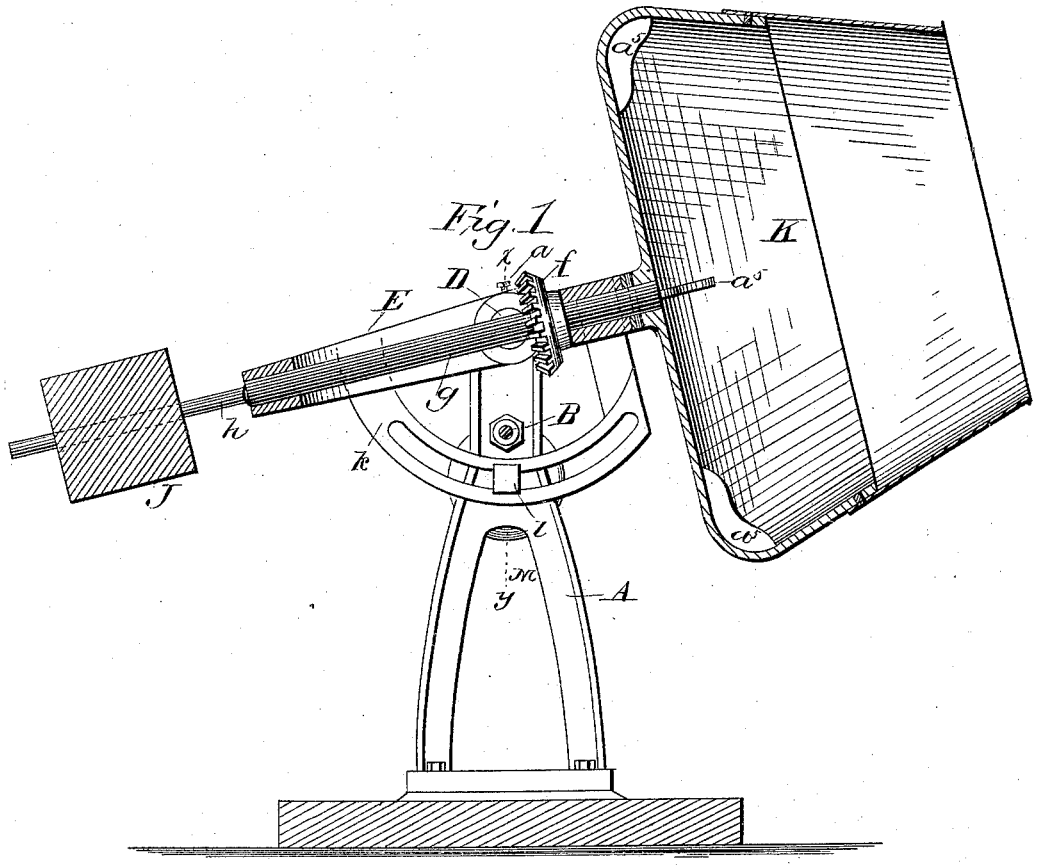
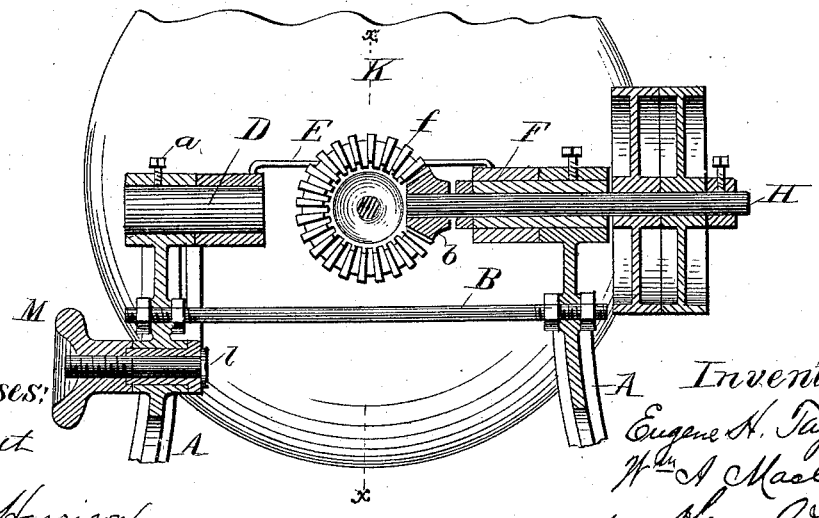


Fig. 2.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR TUMBLING-BOXES.

SPECIFICATION forming part of Letters Patent No. 418,144, dated December 24, 1889.

Application filed December 28, 1888. Serial No. 294,902. (No model.)

To all whom it may concern:

Be it known that I, EUGENE H. TAYLOR, of Lynn, county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Tumbling-Boxes, of which the following is a specification, reference being had to the drawings accompanying and forming a part hereof, in which—

Figure 1 is a vertical section lengthwise of the box or receiver and its actuating-shaft. Fig. 2 is a vertical section on line *y y*, Fig. 1.

The object of my invention is the production of a machine for tumbling or polishing small articles of metal—such as nails, staples, and the like—and which can be readily adjusted so as to vary the degree of agitation to which the articles being polished are subjected; and it consists of a box or receiver of conical shape mounted on a shaft which is set in a pivoted frame, so that the receiver may be swung or shifted from a vertical to a horizontal position and securely set at any given point, said pivoted frame being provided with a clamping device for securing it in any position to which it may be adjusted, and also preferably having a weight or counterpoise to render it easy to shift, all as will be hereinafter described.

My invention is simple and will be readily understood from the following description and the accompanying drawings.

A represents the frame of the machine, which consists of two parts connected by a tie-rod B. In the top of the frame A, at one side, is set a short shaft D, which is secured in its bearing by a set-screw *a*. On the inner end of the shaft D is journaled one side of a yoke-shaped frame E, the other side of said frame being journaled on the hollow shaft F, which is firmly set in a bearing in the top of the other side of the frame A. The main shaft H is mounted in the hollow shaft or sleeve F and at one end is provided with a fast and a loose pulley, as shown, Fig. 2, while at the other it carries a beveled pinion *b*, which is fast thereto. The beveled pinion *b* meshes with a beveled gear *f*, which is fast on the shaft *g*, which is mounted at a right angle to the main shaft in bearings in the yoke-shaped swinging frame E. (See Fig. 1.) To one end of the shaft *g* is rigidly secured the receiver K, which may be of any shape desired, although I prefer to make it the frusto-conical shape shown. At the other or rear end of the swinging frame E, I secure a rod *h*, upon which I mount a weight J sufficiently heavy to balance or nearly balance the receiver K and its contents, and thus remove or lessen the strain which might otherwise be placed on some parts of the mechanism, as also render it easy to shift the position of the receiver K. To one side of the swinging frame E, I secure a curved and slotted brace *k*, the slot in which receives a screw-bolt *l*, (see Fig. 2,) which passes through a boss or bearing in the frame A, and is provided outside the frame with a thumb-nut M. By setting up this thumb-nut M it will be clear that the curved piece *k* and the swinging frame E may be clamped securely in a given position. If, now, power be applied to the main shaft, the receiver K will be revolved and its contents will be agitated; and if the revolution of the receiver takes place when its shaft *g* is horizontal, or nearly so, the contents thereof will be more violently agitated than if the shaft *g* were in a perpendicular or substantially perpendicular position, because in the first case the contents of the receiver will travel up with it until gravity acts upon them and they will then fall across the receiver toward its lowest point, while as the shaft *g* approaches the perpendicular and the bottom of the receiver the horizontal there will be less and less chance for gravity to act on its contents, and they will have less distance to fall until, when the bottom of the receiver is exactly horizontal, its contents will revolve with it and with little or no movement relatively to it or to themselves.

As will be clear, the pinion *b* is in the pivotal center of the swinging frame E and the gear *f* on the shaft *g* of the receiver is arranged to mesh with it and will be operated by it in any position in which the shaft *g* may be set. It will also be obvious that the precise form of the curved piece *k* or of the device used to clamp it to the frame A is not material.

The buckets or wings for carrying up the

contents of the receiver, which are shown at a^5, are commonly used in tumbling-boxes, and may or may not be employed, as desired.

What I claim is—

1. The combination, with the frame A, of the pivoted frame E, provided with the brace k, a clamping device for securing the said brace to the said frame A, the shaft g, journaled in the said pivoted frame, and the barrel or receiver K, attached to said shaft.

2. The combination, with the frame A, of the pivoted frame E, provided with a weight or counterpoise, the shaft g, journaled in said frame E, and the barrel or receiver K, attached to said shaft.

3. The combination, with the frame A, of the shaft D and hollow shaft F, the frame E, pivoted on the said shafts, the main shaft H, journaled in the said hollow shaft F and provided with the beveled pinion b, the shaft g, journaled in the pivoted frame E and provided with the beveled gear f, and the barrel or receiver attached to the said shaft g.

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