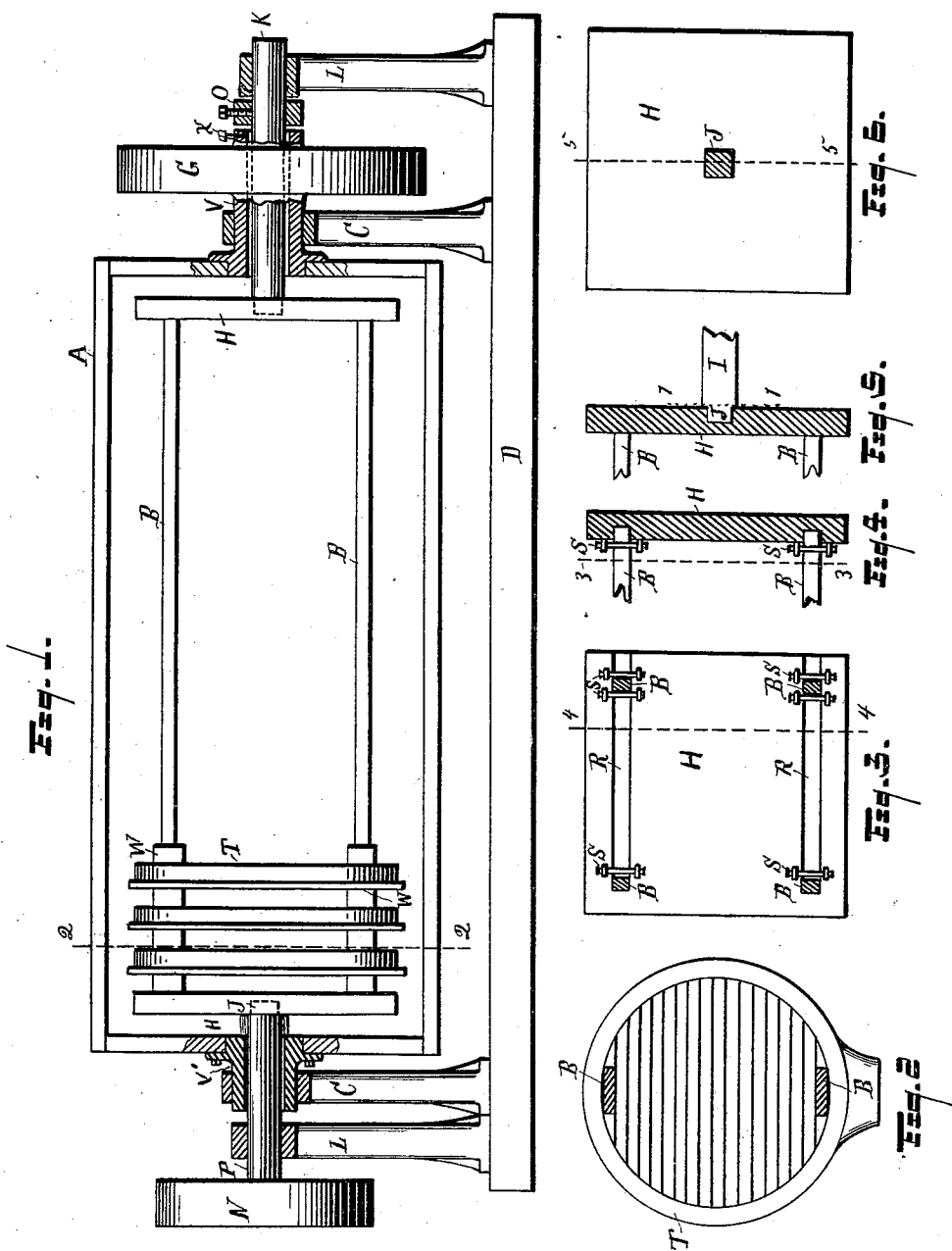


(No Model.)

F. J. MORGAN.  
TUMBLING BARREL.

No. 512,312.

Patented Jan. 9, 1894.



WITNESSES.  
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# UNITED STATES PATENT OFFICE.

FRANK J. MORGAN, OF KALAMAZOO, MICHIGAN.

## TUMBLING-BARREL.

SPECIFICATION forming part of Letters Patent No. 512,312, dated January 9, 1894.

Application filed May 12, 1893. Serial No. 473,939. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK J. MORGAN, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Tumbling-Barrel, of which the following is a specification.

This invention relates to that class of tumbling barrels which are provided with devices inside for holding articles to be polished, and it has for its objects certain improvements especially adapting the barrel for use in polishing stamped and frail cast goods; all as more particularly described and claimed below.

In the drawings forming a part of this specification, Figure 1 is a side elevation, parts being in section and one side of the barrel being removed; Fig. 2 a section on line 2—2 in Fig. 1, looking from a point at the right. Fig. 3 is a view which will serve to show either a head of the rack or a head of the tumbling barrel, illustrating changes, said figure being in section on line 3—3, in Fig. 4, looking from a point at the left; Fig. 4 a section on line 4—4 in Fig. 3; Fig. 5 a section on line 5—5 in Fig. 6; and Fig. 6 is a section on line 1—1 in Fig. 5, looking from a point at the right.

Referring to the lettered parts of the drawings A is a barrel or box, here shown in rectangular form, but may be made in any desired shape, for which reason, for convenience we will use the term "tumbling-barrel," considering a barrel or box, for the purposes of this invention equivalent. This tumbling-barrel, A, is provided with end axial projections, V and V', revolvably mounted in bearings on standards, C, which standards project upward from the base, D; said barrel being revolved by power applied to the pulley, G, said pulley being attached to one of the axial bearings of said barrel.

At B B are shown the bars for supporting the articles to be polished. These bars are attached at each end to heads, H, as many bars being employed as may be deemed desirable, according to the articles to be supported by them. When the bars are thus

provided with the heads the device may be termed a rack, and as illustrated in Fig. 1, this rack is detachable within the barrel, by providing said heads with a square central mortise in their outer surface and detachably inserting therein a squared end, J, of the arbors, K P, Figs. 1, 5 and 6, which arbors have revoluble bearings in standards, L, projecting upward from the base, D. It will be observed that the axial projections, V and V', of the barrel A, are hollow, and that the arbors, K P, pass loosely through them. One of the arbors, P, is provided with a pulley, N, to which power is applied to revolve the rack within the barrel. On the right hand arbor, K, is a collar, O, held by a set-screw, which collar forms shoulders to keep the arbor from moving endwise. By loosening this set-screw said arbor can be moved endwise and detached from the rack, when the rack can be detached from the arbor P, at the other end, and taken out of the barrel.

In some uses, one or more of the supporting-bars, B, should be detachable from the heads, H, according to the particular articles to be supported by them. Figs. 3 and 4 show a plan of detachably attaching said supporting-bars B to the heads, H, which is to provide the heads with grooves, R, into which grooves the ends of the bars are inserted and are held in place by transverse pins, S, but so far as this particular plan of detachably attaching said bars is concerned, other plans may be adopted.

The particular use of the machine, as herein illustrated, is to polish broilers, T, in which case, two bars B are sufficient, said broilers being strung upon said bars by the bars being inserted through the openings in the broilers, as in Fig. 2, blocks, W, being placed on the bars B between the broilers, to hold them separated.

In the operation, referring to Fig. 1, the barrel, A may be revolved in one direction at a given rate of speed, and the supporting-bars or rack may be revolved in the opposite direction at another rate of speed, or the barrel and rack may be revolved both in the same

direction at the same or at different rates of speed, or by attaching the arbor K and the axial projection V together, which may be done by means of a set-screw, X. The barrel and supporting-bars may be revolved together in one direction, by applying power to the pulley G.

In treating some articles the bars B may be made integral with the heads, H, while in treating other articles more bars would be employed, one or more of which bars would be detachable, so that the articles could be placed within the bars and separated from each other by blocks, W.

If preferred, the bars B may be detachably attached to the heads of the barrel, A, itself, in the same manner as said bars are detachably attached to the head H, as shown in Fig. 3, or in some other suitable manner; the head, H, in Fig. 3 serving in this instance, for the purpose of illustration, to represent the head of the barrel, in which case the articles to be polished would be supported by the bars and be free from contact with said barrel, the main object in this case being to have the bars detachable, either separately or together with their heads H, from the barrel A.

Instead of detachably attaching the heads H, to the arbors, K P, as in Fig. 1, these arbors may be dispensed with and the device be merely detachably inserted in the barrel.

The bars B may be attached rigidly to the heads H, as stated; (Fig. 5) as, for instance, in treating some articles which, owing to their peculiar shape can be inserted through the supporting bars, in order to get them within the bars, and still be free from contact with the barrel and be separated from each other by the blocks, but in this instance the barrel, A, would not be adapted for separate use in the ordinary manner, as is the case when the supporting-bars are detachable. The main object of this supporting the articles to be polished separated from each other and free from contact with the barrel is that the articles are not so liable to become bent or broken, and are more uniformly and speedily polished throughout their entire surface; thus being enabled to treat certain articles in a tumbling-barrel which it would be impossible to treat in the ordinary manner, owing to

their frailty, and the desired effect to be produced.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is —

1. The combination of a revoluble tumbling barrel and a rack detachable in said barrel, for supporting the articles to be polished, which rack comprises two heads disconnected from the barrel, and separated longitudinal bars having their ends detachably connected with said heads; substantially as set forth.

2. The combination of a revoluble tumbling barrel and a rack detachable in said barrel, for supporting the articles to be polished, which rack comprises two heads disconnected from the barrel, separated longitudinal bars having their ends detachably connected with said heads, and separating blocks on said bars, for separating the articles to be polished.

3. The combination of a tumbling barrel having hollow axial end-supports, a rack detachable in said barrel, for supporting the articles to be polished, said rack comprising the heads and separated longitudinal bars, axial end-supports detachably attached to said heads and passing loosely through the hollow end-supports of the tumbling barrel, whereby they will revolve with said rack and be readily detached endwise from it; substantially as set forth.

4. The combination of a tumbling barrel having hollow axial end-supports, a rack detachable in said barrel, for supporting the articles to be polished, said rack comprising the heads and separated longitudinal bars, axial end-supports detachably attached to said heads and passing loosely through the hollow end supports of the tumbling barrel, whereby they will revolve with said rack and be readily detached endwise from it, and a set-screw for locking the axial end-supports of both barrel and rack together; substantially as set forth.

In testimony to the foregoing I have hereunto subscribed my name in the presence of two witnesses.

FRANK J. MORGAN.

Witnesses:

JOHN P. AGGEL,  
ALLEN T. PRENTICE.