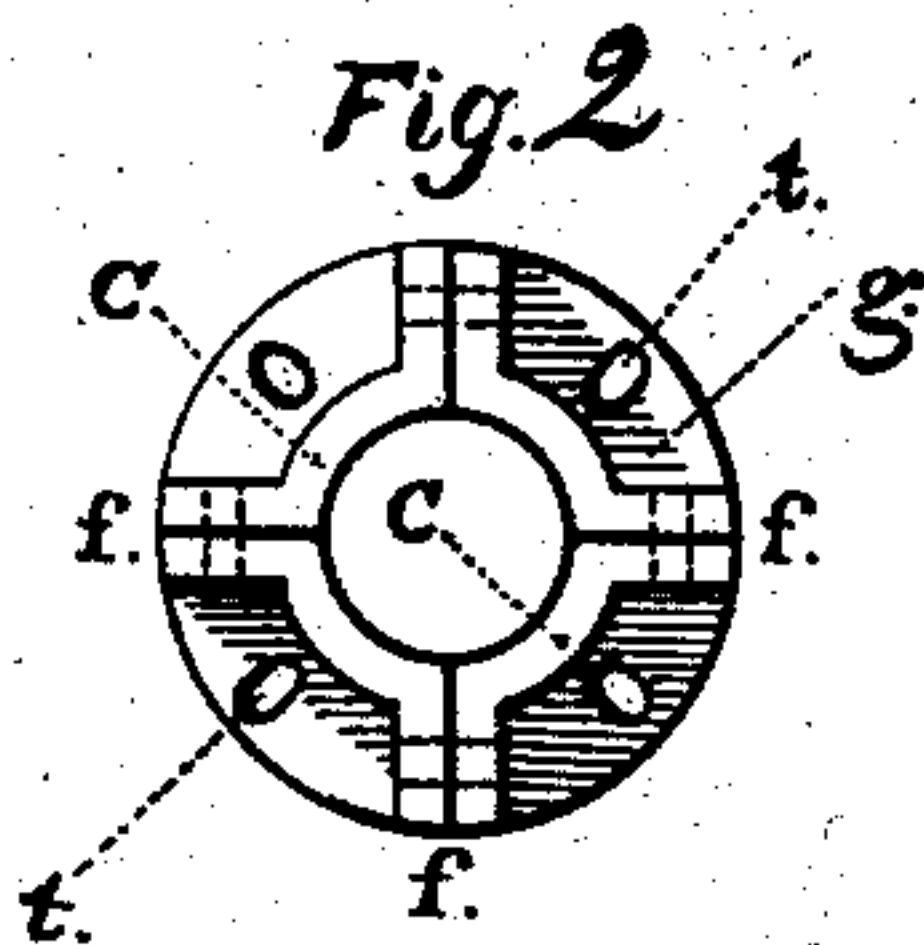
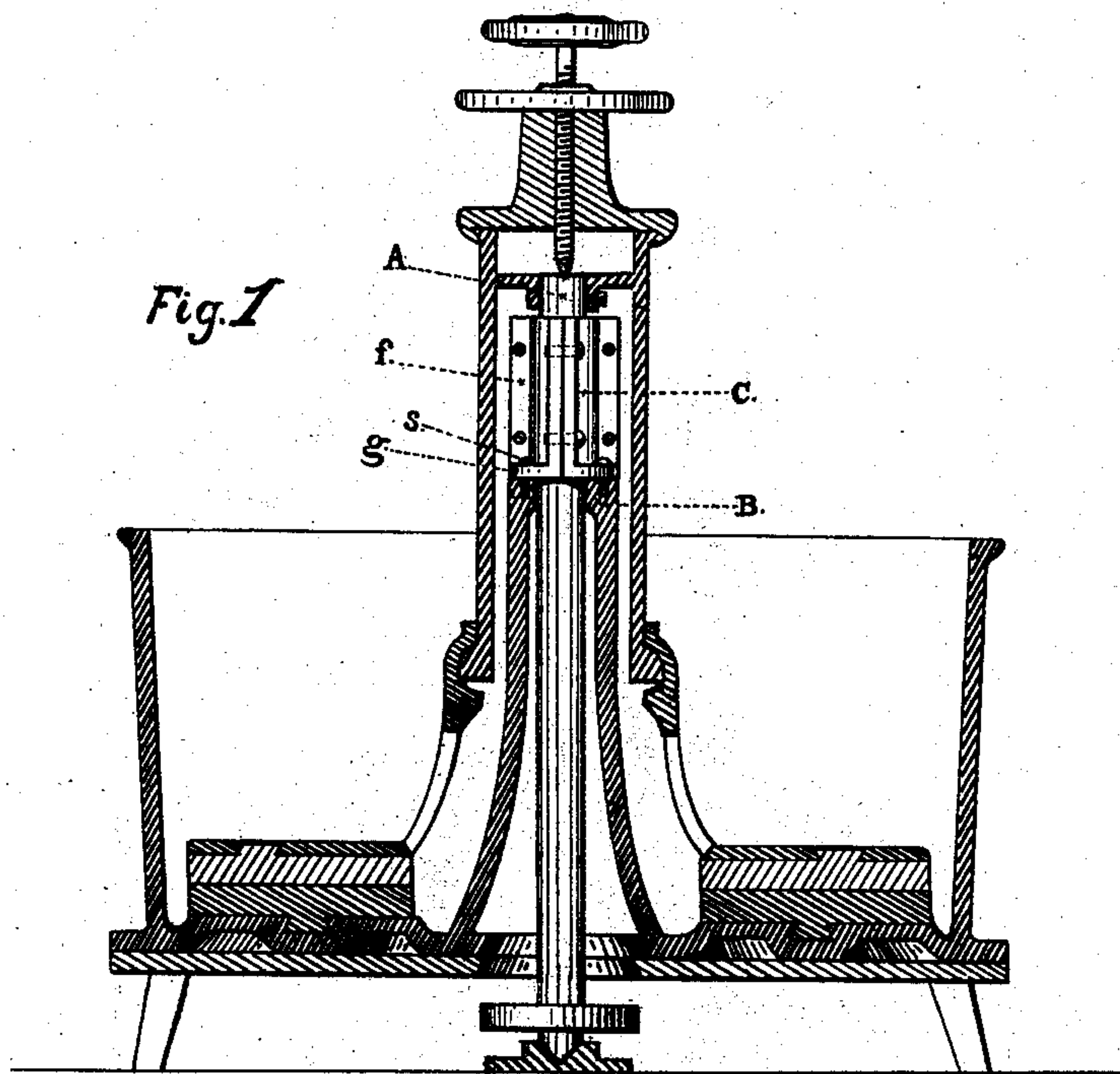


E. COLEMAN.

Box for Amalgamator Spindles and Shafts.

No. 224,277.

Patented Feb. 10, 1880.



Witnesses:

*Edward C. Boone*

*W. D. Clark*

Inventor:

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Attorney.



# UNITED STATES PATENT OFFICE.

EZRA COLEMAN, OF SAN FRANCISCO, CALIFORNIA.

## BOX FOR AMALGAMATOR SPINDLES AND SHAFTS.

SPECIFICATION forming part of Letters Patent No. 224,277, dated February 10, 1880.

Application filed June 30, 1879.

*To all whom it may concern :*

Be it known that I, EZRA COLEMAN, of the city and county of San Francisco, in the State of California, have invented certain Improvements in Boxes for Amalgamator Spindles and Shafts; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention has reference to a sectional box for upright spindles and shafts, which is so constructed and applied that it can be adjusted to fit the shaft or spindle of an amalgamator as the bearing-surfaces wear away.

My adjustable box is more especially useful in connection with the amalgamating pans and settlers for preserving the proper trim of the muller, so that it will bear evenly and uniformly upon the grinding-surface or bottom of the pan.

In the construction of amalgamating pans and settlers it has heretofore been customary to make the central hub or boss, through which the upright shaft or spindle passes in one piece, so as to fit the spindle or shaft. In this construction, however, the wearing away of the bearing-surfaces soon allows the muller to wobble and run unevenly, so that the grinding is imperfectly done and the muller is worn unevenly and in ridges. My improved box is so constructed that this wear can be taken up occasionally when required, and thus keep the muller in trim, so that it will run true and even.

Referring to the accompanying drawings, Figure 1 represents a sectional elevation, partly in side view, of my improved box for spindles or shafts; and Fig. 2 is a plan view of my box.

A marks the spindle or shaft of an amalgamator, which extends up through the boss B, disposed in the central part of the pan or settler. Upon the upper end of the boss or standard B is secured the box, which fits the spindle or shaft closely. As heretofore constructed the box formed an integral part of the boss.

I make the hub or boss of the pan shorter than usual, and then make the box in a separate piece and secure it upon the upper end of the boss, as hereinafter described. This box I make sectional in three or more sections, C C.

Each section is applied to the hub or boss with its inner surface fitting against the spindle. I prefer to make the box in four separate sections, one of which sections fits around each quarter circumference of the shaft, the whole forming a complete box; but any number of sections can be employed.

The meeting edges of all the sections are made radial to the center of the spindle or shaft A, and a flange or rib, *f*, is formed on both outside edges of each section, so as to project from it. Another flange or rib, *g*, connects the lower ends of the edge flanges, passing around the lower end of each piece.

The parts of the box are made of such a size that when they have been adjusted to the shaft or spindle a narrow space is left between each two parts of the box, in which I place a sufficient thickness of metal or other suitable packing. I then take each section separately and cast a suitable thickness or lining of Bab-bitt or other anti-frictional metal on its inside in the well-known way of casting that metal with other metal, thus furnishing said sections, when brought together to form the box, with a closely-fitting surface around the shaft or spindle.

The upper end of the short hub or boss B of the pan I cut off horizontally, so that the lower end of the box thus constructed will rest upon it. I then secure the box upon the hub or boss by means of screws or bolts *s*, which pass through holes *t* in the bottom flanges, *g*. The holes *t* in the flanges are slotted radially, so that the parts or pieces can be drawn toward the center as far as the packed spaces between the parts will permit, when the packing is removed. This gives a perfect-fitting box, which is fastened to the hub or boss, so as to form a part of it. When the bearing-surfaces of the box wear so that the box needs adjustment, I loosen the base-screws *s* and flange-screws, and substitute a thinner packing for that between the parts, and again tighten up the screws. This gives a new and perfect fit, and as often as necessary this can be repeated until the edges of the parts C come together. The parts can then be rebabbitted, so as to be as good as new. This arrangement is



quite simple, and it provides a box that can be easily adjusted to take up the wear with but little trouble.

The same arrangement can be applied to 5 running shafts.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

10 The combination, with the boss or hollow standard of an amalgamating pan or settler, of a sectional shaft-box, C, with its respective sections provided at their lower ends with

horizontal flanges *g*, having slotted holes *t* and adjusting-screws *s s*, entering the upper end of the boss or standard, and packing interposed 15 between the box and shaft, substantially as and for the purpose specified.

In witness whereof I have hereunto set my hand and seal.

EZRA COLEMAN. [L. S.]

Witnesses:

W. FLOYD DUCKETT,  
W. F. CLARK.