

G. SANFORD.

Machines for Dressing Brasses of Journal-Boxes.

No. 136,338.

Patented Feb. 25, 1873.

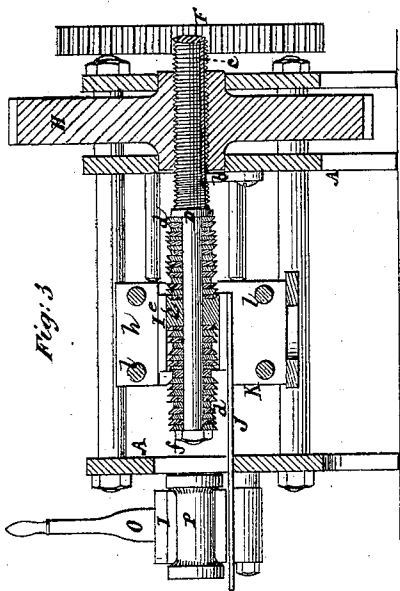


Fig. 3

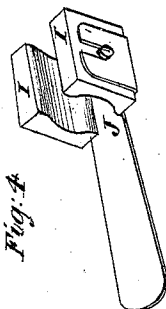


Fig. 4

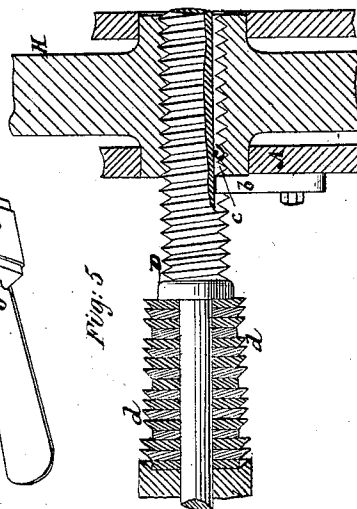


Fig. 5

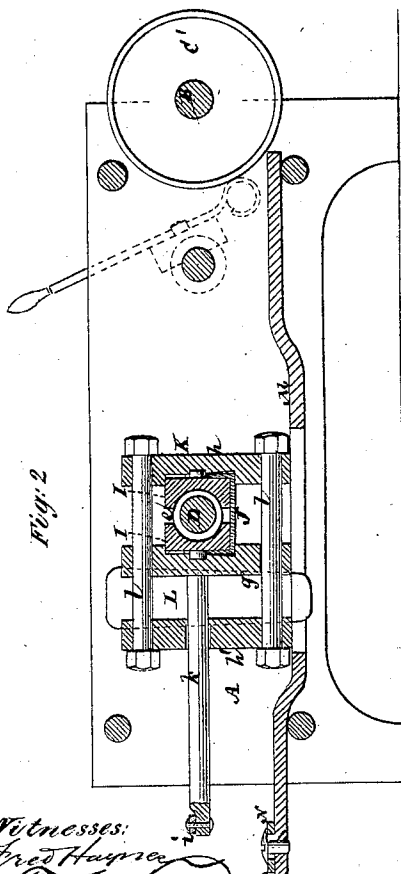


Fig. 2

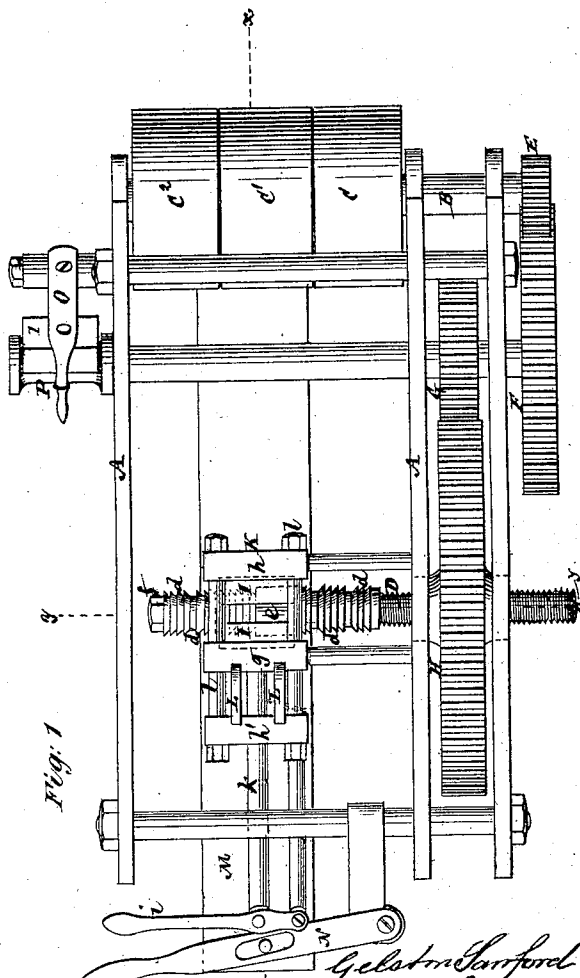


Fig. 1

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UNITED STATES PATENT OFFICE.

GELSTON SANFORD, OF STROUDSBURG, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR DRESSING BRASSES OF JOURNAL-BOXES.

Specification forming part of Letters Patent No. 126,328, dated February 25, 1873.

To all whom it may concern:

Be it known that I, GELSTON SANFORD, of Stroudsburg, in the county of Monroe and State of Pennsylvania, have invented certain Improvements in Machines for Dressing Axle-Brasses and other bearings, of which the following is a specification:

This invention relates to machines for dressing the brasses of axle-boxes, journal-boxes, and other bearings; and consists in certain combinations of mechanism for accomplishing said end by forcing a cutter or cutters through a pair of brasses or bearing-blocks in a straight line or course, free from rotation of either the cutter or the brasses, whereby the brasses may not only be dressed true and without ridges, but the longitudinal movement of the cutter-spindle in both or reverse directions is made to dress a succession of duplicate brasses, and every facility is afforded for clamping, adjusting, and releasing the work under operation.

In the accompanying drawing, which forms part of this specification, Figure 1 represents a plan of a machine constructed in accordance with my invention; Fig. 2, a longitudinal vertical section of the same, mainly on the line *x x*; Fig. 3, a transverse vertical section on the line *y y*; Fig. 4, a view in perspective of a detachable work-holder with a pair of brasses therein; and Fig. 5, a longitudinal sectional view upon a larger scale than in Figs. 1, 2, and 3 of the cutter and cutter-holder in part, in illustration of the manner in which the cutter is fed.

Similar letters of reference indicate corresponding parts.

A is the frame of the machine, which may be of any suitable description. B is the driving-shaft, fitted with loose and reversing pulley C¹ C², for stopping, starting, and reversing the motion of the cutter-holder D, which is actuated by gearing E, F, G, and H, the latter wheel, H, of which is constructed to form a revolving nut, within or through which the cutter-holder D, having a screw-thread on it to correspond, works—that is, moves longitudinally in either or opposite directions, according to the rotation of the nut, a fixed guide, *b*, entering a longitudinal groove, *c*, in the screw portion of the cutter-holder, to keep it from turning. The cutter may either be constructed single or double, accordingly as it is

required to operate in one direction or in opposite directions; but is here shown as made double, being composed of any desired number of bevel-edged cutting-disks, *d*, clamped together in sets upon the holder D, on opposite sides of a circular finishing-cutter, *e*, which has its opposite cutting-edges internally beveled in reverse directions. The cutting-disks *d* are also reversely beveled on opposite sides of the finishing-cutter *e*, and the first two or three of said disks in immediate proximity to the finishing-cutter *e* are successively of diminishing diameter, while the remainder of said disks are of a uniform and reduced diameter, or may be altogether dispensed with, and the shaft or tool-holder D be of an enlarged diameter at such part, but in every case of less size than the cutting-disks and finishing-cutter. This forms a partially-tapering cutter, which, though operating gradually, is true in its finishing action on the brasses being dressed. The several cutting disks or devices may be slipped off the holder D, for the purpose of sharpening them, or replacing them by others either of the same or different diameter, by simply removing the clamping-nut *f* on the one end of the holder. Constructed as described, the whole cutter is of a double and reverse partial taper for operating in both directions, either tapering or partially tapering portion serving to dress a pair of brasses, and the cutter *e* following to finish the work. I I represent a pair of brasses for two railroad-car axle-boxes to be dressed. These brasses are arranged face to face within a loose holder, J, the teats or projections on the backs of the brasses entering slots in the sides of the holder. The holder J, with the brasses in it, is slipped within a clamp, K, with the ends of the brasses facing the cutter, said holder entering between plates *g h* of the clamp, the one, *g*, of which is movable by means of a handle, *i*, and attached rod *k*, while the other plate, *h*, and corresponding plate *h'* on the other side of the movable plate *g* are arranged loosely on the ends of bolts *l l*, on which the plate *g* is free to slide. The bolts *l l* admit of the plates *h h'* being adjusted nearer or further apart, and the movable plate *g* is driven up by wedges L L, to clamp the holder J or brasses I I between it and the plate *h* in proper relation with the cutter. On taking out

these wedges, the clamp is readily opened by the handle *i* to take out the holder for the insertion of another pair of brasses. The entire clamp with its holder and contained brasses may be moved in transverse relation with the cutter, to facilitate adjustment, by means of a plate, *M*, on which the clamp rests, said plate being free to slide in direction of its length by means of a slotted hand-lever, *N*, that provides for a cross adjustment of the plate to adapt it to reverse actions of the cutter and other circumstances; but this plate *M*, with its means of adjustment, forms no exclusive part of my invention, and other means may be substituted for them.

The one pair of brasses is first dressed out by passing the free or unsupported portion of the double partially-tapering cutter through them while within their holder in the clamp, the finishing-cutter *e* completing the scraping or straight-cutting action, and the whole cutter being passed through said pair of brasses, after which the latter may be removed and another pair of brasses be substituted therefor in the holder *J*, and the longitudinal movement of the cutter be reversed by changing the direction in rotation of the nut or wheel *H*, having a screw-thread in its eye, which causes the other or back tapering portion of the cutter to dress out such new set of brasses, the clamp *K* and holder *J*, with its contained brasses, being suitably held or shifted to resist the thrust of the cutter in either direction of its travel. After the cutter has been drawn or forced through the brasses, as described, the latter, one at a time, may be

connected by their back teats to a hand-lever, *O*, and be borne against a revolving reel-shaped cutter, *P*, having a concave arrangement of cutting ribs or projections on the inner side of each of its heads, for the purpose of rounding off the ends of the bearing-surfaces of the brasses.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The partially-tapering circular cutter, composed of a finishing-cutter, *e*, and beveled cutting-disks *d*, of successively diminishing diameter in immediate proximity to the finishing-cutter, in combination with the longitudinally-sliding screw-threaded cutter-holder *D*, and the revolving nut or wheel *H*, substantially as specified.

2. The reversely-beveled finishing-cutter *e*, in combination with the reversely-beveled disks *d* on opposite sides of said cutter, and the longitudinally-sliding cutter-holder *D*, essentially as described.

3. The clamp *K* and brasses-holder *J*, in combination with the longitudinally-sliding tapering disk-built cutter, substantially as specified.

4. The combination of the brass-holding lever *O* with the reel-cutter *P*, having concave cutting extremities within its heads at either end, essentially as and for the purpose herein set forth.

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Witnesses:

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