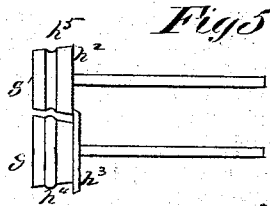
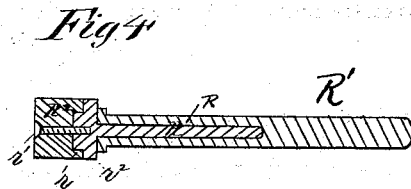
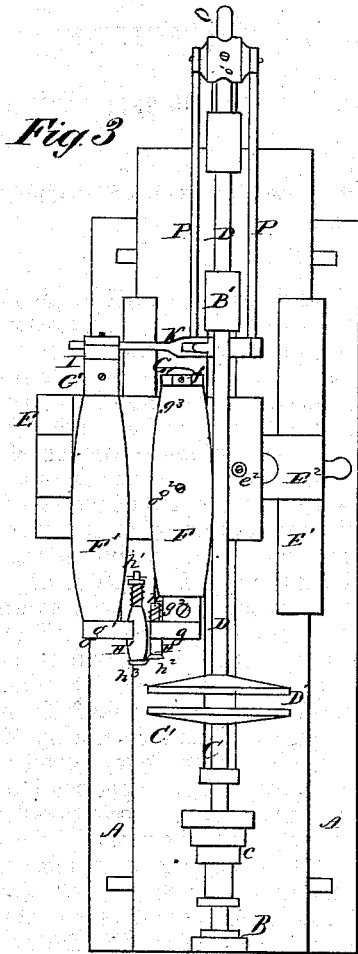


J. De BUTT.

Machines for Trimming and Beading Sheet-Metal.

No. 158,920.

Patented Jan. 19, 1875.



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UNITED STATES PATENT OFFICE.

JOHN DE BUTT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN MACHINES FOR TRIMMING AND BEADING SHEET METAL.

Specification forming part of Letters Patent No. 158,920, dated January 19, 1875; application filed October 3, 1874.

To all whom it may concern:

Be it known that I, JOHN DE BUTT, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Lathe for Trimming and Beading Sheet Metal; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side elevation of my invention. Fig. 2 is a vertical transverse section. Fig. 3 is a plan view, and Figs. 4; 5, and 6 are details.

The object of my invention is to produce a machine adapted to trimming and beading sheet-metal ware of all diameters at a single operation.

The nature of my invention consists in the peculiar construction of the various parts, and their novel combination, as hereinafter fully described.

Referring to the accompanying drawing, A shows the lathe-bed mounted on legs A' A'. B and B¹ are poppet-heads, the former provided with cone-pulleys *c*, mounted on a mandrel, C, and the latter supporting an adjustable pressure-shaft, D. E is a rest, adjustable both transversely and longitudinally on the bed A. The rest E is composed of two slides, the lower one, E¹, moving longitudinally on the bed A, and provided on its upper surface with a dovetailed tongue, *e*, fitting in a corresponding groove, *e*¹, in the upper slide, E². The upper slide, E², sustains two columns, E³ E⁴, which support two heads, F F', bored longitudinally for the reception of the cutter-shafts G G'. The shafts G G' are furnished with winches *g g*¹, respectively, supporting heads H H' bored to receive the short shafts *h h*¹, holding, respectively, the cutting-disks *h*² *h*³. The shaft G is held fixed by set-screws *g*² *g*³, the latter passing through a nut, *f*. The shafts *h h*¹ are furnished with encircling springs, taking up any lost motion incident to the wear of the cutters. I represents a crank-arm, fastened by a set-screw to the shaft G', and K is a bar pivoted to said arm, and to a lever, L, whose lower end is bifur-

cated, and provided with a pin, *l*, moving in a slot, *m*, in a rod, M. N represents a treadle, having a slotted standard, *n*, whose pin *n*¹ also works in the slot *m*. M¹ is a vertical standard, secured to the opposite end of the rod M, a pivot, *m*¹, passing through the same, and through the oblique bearings M² secured to the lathe-bed A. O represents a head, slotted to receive the end of the standard M¹, and having also a vertical slot, *o*, in which moves the pin *m*², forming a pivot for the upper end of the standard M¹. The shaft D is also adjustable in the head O, a set-screw, *o*¹, being provided for the purpose. P P are arms, pivoted at *p* to the head O, and at their other extremity to the slide E¹. On depressing the treadle N the pressure-shaft D and slide-rest E, through the instrumentality of the rod M, standard M¹, head O, and arms P P, will be moved toward the poppet-head B. On relaxing the pressure on said treadle the rest E and shaft D will be moved in a contrary direction by the spring Q attached to the lower end of the standard M¹. At the same time that said shaft D and rest E are moved toward the poppet-head B, the shaft G' is revolved by means of the crank-arm I, bar K, and lever L, bringing the edges of the cutters *h*² *h*³ together. On withdrawing pressure from the treadle N the cutter-shaft G' will move back to its normal position.

I shall now proceed to describe the operation of the machine. In all cases I employ a plain-faced chuck, C', on the mandrel C. For work of a greater diameter than two inches I employ a disk, D', recessed to receive a head, *d*, firmly fixed on the end of the pressure-shaft D, a center screw (countersunk) fastening said disk and head together. When the disk D' is used, I employ both the cutters *h*² *h*³, as already described. For work of a diameter of two inches or less, I remove the disk D', draw back the pressure-shaft D through the head O, and substitute for the spindle G a hollow shaft, R¹, in which fits a short shaft, R, having a solid roller-head, R², recessed like the disk D', and held on a head, *r*, by a countersunk screw, *r*¹. The can or other vessel of over two inches diameter is placed in position, so that the disk D' will enter it, lodging against its bottom. On depressing the treadle

N the pressure-shaft will be advanced toward the head B until the bottom of the can meets the chuck C'. The side of the can will be between the cutting-disks $h^2 h^3$, so that as it is revolved by the chuck C' its edge will be duly trimmed. The amount taken off by the cutters will be regulated by the adjustment of the pressure-shaft in the head O, thereby permitting the slide E to be moved correspondingly toward the head B. In order to bead and trim at one operation, I provide heads S S', having cutters $h^2 h^3$, and provided also, respectively, with a ridge, h^4 , and corresponding groove h^5 . For work of a diameter of two inches or less the shafts R and R', bearing the roller-head R², are employed, as already mentioned. The vessel to be trimmed is placed on the roller-head R², so that when the rest E is advanced, by the depression of the treadle N, the head of the said vessel will bear against the chuck C', the cutter h^3 operating upon the side of the vessel against the roller-head R². The upper slide, E², is laterally adjustable on the lower, being made fast when adjusted by means of a binding or set screw, e^2 . The roller-head R² may be increased to any extent, to correspond with any depth of can, by the provision of steel washers r^2 .

It will of course be understood that for various diameters of work different sizes of disks D' and rollers R² will be required. The changes thus required may be readily made by withdrawing the center screw, which holds the disk and roller-head, respectively, in place, thus permitting substitution without the necessity of removing the spindles or shafts to which said disk and roller are respectively attached.

What I claim as my invention is—

1. In combination with a machine for trimming metal, the adjustable pressure-shaft D and slide-rest E, movable simultaneously and in conjunction, substantially as and for the purpose specified.

2. The shaft G', moving in the head F¹, having a cutter, h^3 , and crank-arm I, substantially as described.

3. The combination of the shafts G G', provided with cutters $h^2 h^3$, said shaft G being stationary, while said shaft G' is movable, so as to bring the cutters together, substantially as set forth.

4. In combination with the pressure-shaft D, provided with a head, d , the disk D', recessed as described, for the reception of said head.

5. The head O, slotted as described, to receive the end of the standard M¹, and having an opening for the passage of the pressure-shaft D, substantially as shown and described.

6. The combination of the crank-arm I, pivoted bar K, and lever L with the slotted bar M, substantially as shown and described.

7. The combination of the slotted bar M, pivoted standard M¹, head O, and pressure-shaft D, substantially as described.

8. The pivoted standard M¹, head O, and arms P P, in combination with the slide E, substantially as shown and described.

9. The heads $s s'$, provided with cutters $h^2 h^3$, ridge h^4 , and groove h^5 , so as to trim and bead at one operation, substantially as described.

10. A lathe for trimming sheet-metal ware, combining the following elements: A revolving chuck, a slide-rest, and a cutter or cutters, employed in connection with a pressure-shaft and a disk, or a shaft with solid head, as described, the parts being constructed and arranged substantially as described, so that by depressing a connected treadle the pressure-shaft and slide will be moved toward the chuck, and the cutter or cutters made to operate upon the vessel to be trimmed, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 21st day of September, 1874.

JOHN DE BUTT.

Witnesses:

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L. FRANK HARTMAN.