(No Model.) 2 Sheets—Sheet 1.

M. D. AHEARN.

MACHINE FOR PATCHING SAWS.

No. 594,312. Patented Nov. 23, 1897.

Fig. 1.

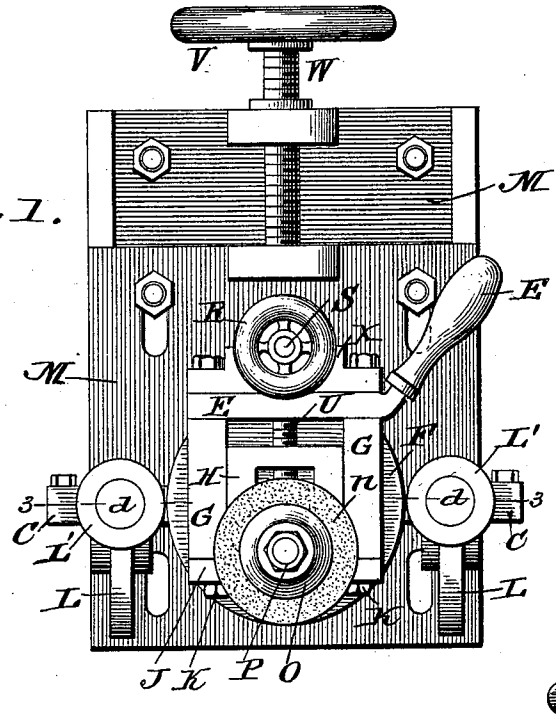
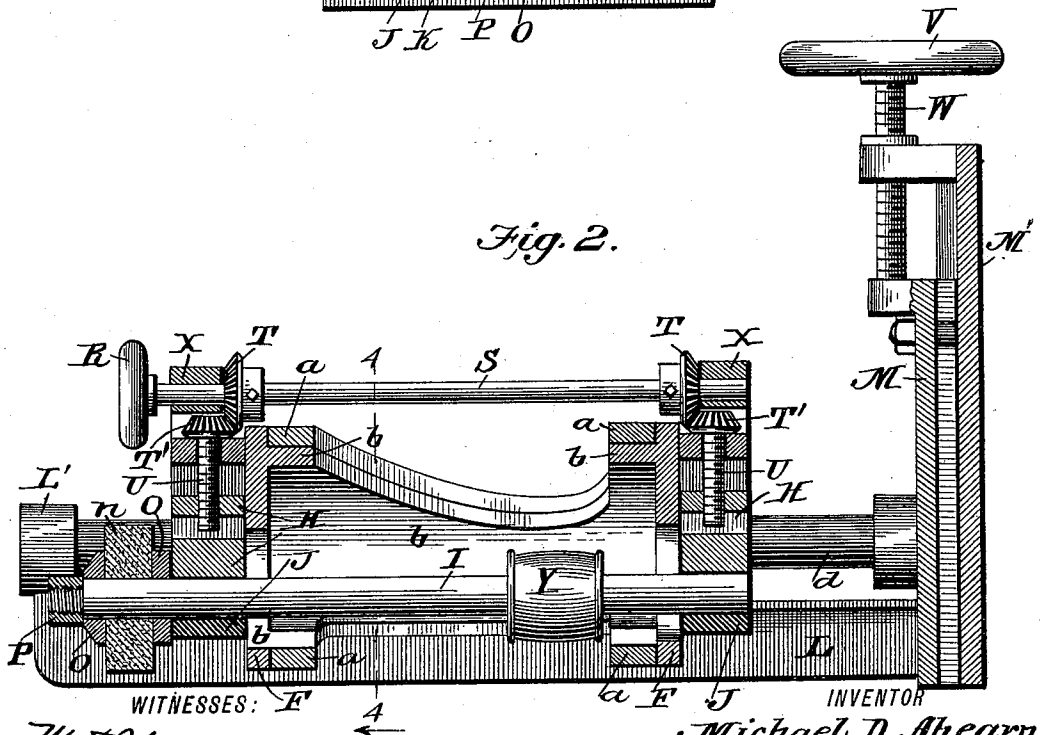


Fig. 2.



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Fig. 3.

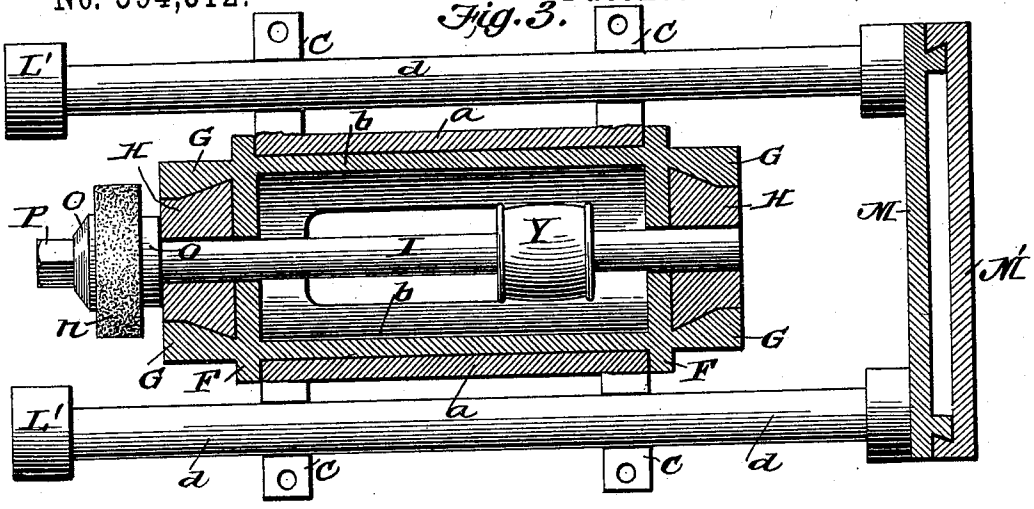


Fig. 4.

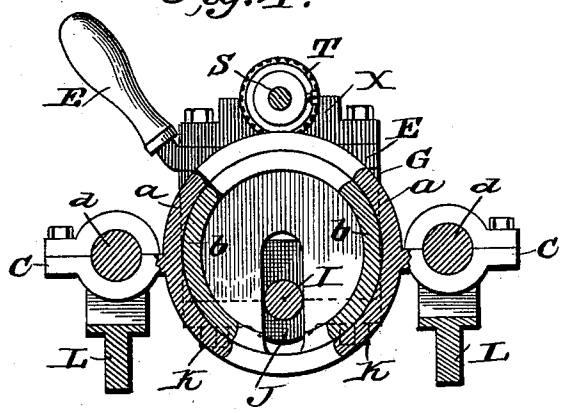


Fig. 5.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MICHAEL D. AHEARN, OF GREEN BAY, WISCONSIN.

MACHINE FOR PATCHING SAWS.

SPECIFICATION forming part of Letters Patent No. 594,312, dated November 23, 1897.

Application filed July 8, 1897. Serial No. 643,892. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL D. AHEARN, of Green Bay, in the county of Brown and State of Wisconsin, have invented a new and useful Improvement in Machines for Patching Saws, of which the following is a specification.

My invention is in the nature of a machine for cutting or grinding a concave recess in the side of a metal plate for the purpose of patching fractures in saws by brazing splice-sections thereacross in accordance with the method described in another application for a patent filed by me of even date herewith, Serial No. 643,893.

The invention consists in the peculiar construction and arrangement of the various parts of the machine for rapidly and accurately cutting the said concave recesses, as will be hereinafter more fully described with reference to the drawings, in which—

Figure 1 is a front elevation of the machine. Fig. 2 is a vertical longitudinal section. Fig. 3 is a horizontal section on line 3 3 of Fig. 1. Fig. 4 is a vertical transverse section on line 4 4 of Fig. 2; and Fig. 5 is an edge view of a metal plate, showing the form of curved recess that the machine is designed to cut.

In the drawings, M′ is an upright plate to be attached to the wall or any upright framework. This plate (see Fig. 3) has undercut parallel guide-ribs on its vertical edges, within which slides the supporting-plate M, which carries all the parts of the machine. This plate M is adjusted vertically by a screw-stem W, tapped through a screw-threaded lug on the top of the plate, which screw swivels in a lug of the plate M and is surmounted by a hand-wheel V. Projecting horizontally from the plate M are two parallel arms L L, whose outer ends have upturned portions terminating in sockets L′, in which are carried the outer ends of two corresponding guide-rods *d d*, whose inner ends are attached to the plate M. These horizontal rods carry the movable parts of the machine, which latter slides back and forth on the said rods. The frame of these movable parts consists of a circular sleeve *a*, cut away at its middle and having at each end two lugs C, Fig. 3, which by means of detachable caps are made to embrace the guide-rods *d*. Within the stationary sleeve *a* there swivels or turns about a horizontal axis an inner sleeve *b*, which at its front and back ends has a collar F. (See Fig. 3.) These collars are provided with vertical guide-jaws G G, which are undercut and between which slide vertically head-blocks H, which, together with removable caps J, fastened by bolts K, form journal-bearings for a revolving shaft I, carrying a drive-pulley Y opposite the cut-away portions of the sleeves *a* and *b*. The sleeve *b* is provided with a radial handle E, by which the sleeve *b* and all of its attached parts are rotated about a horizontal axis.

On the outer end of the shaft I is detachably fixed an emery wheel or bur *n*, secured by collars O O and nut P.

To the upper portion of the collars F are secured journal-boxes X X, in which turns a horizontal shaft S, having at its front end a hand-wheel R for turning it and having also two bevel-gears T T, which engage with other corresponding bevel-gears T′ T′, fixed on the upper ends of vertical screw-stems U U, which are tapped into the blocks H, that carry the journal-boxes of the shaft I, so that by turning the hand-wheel the shaft I and its emery-wheel *n* may be raised or lowered in the guide-jaws G G.

The device as thus described is designed to cut a curved recess in a metal plate similar to that shown in Fig. 5, chiefly for the purpose of brazing on a splice-section across a crack in saw-plate in mending or patching the same. To do this work, the saw-plate is firmly held upon a suitable support beneath the revolving emery-wheel, and the emery-wheel is brought down into contact with the plate by rotating the sleeve *b* by its handle E. This causes the concave recess to always have the same curve, so that the patch or inserted piece, which is made of a uniform convex shape, may always make a perfect fit. The object of the vertical adjustment of the shaft I through the hand-wheel R is to compensate when necessary for the wearing away of the emery-wheel, for as the recess is to be made in a thin metal plate it is necessary to have the machine work with accuracy. The adjustment through the wheel V is to adapt the machine to cut a curved recess of any depth desired, while the motion of the parts back and

forward on the guide-rods is to make the recess extend any distance inwardly on the surface of the plate that may be desired.

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

1. A machine for cutting recesses, comprising a vertical fixed plate, a vertically-adjustable plate carrying two parallel horizontal guide-rods projecting at right angles to the plate, a frame sliding longitudinally on said guide-rods, a horizontal rotary shaft journaled in said frame parallel with and between the guide-rods and provided with a cutting-wheel, and means for adjusting said shaft substantially as shown and described.

2. A machine for cutting recesses, comprising horizontal guide-rods, a non-rotary frame sliding thereon, and an oscillating frame arranged within the non-rotary frame and carrying a horizontal shaft with drive-pulley and cutting-wheel, and means for adjusting this shaft and wheel vertically substantially as and for the purpose described.

3. The combination with horizontal guides; of a sleeve-frame *a* with lugs embracing the same, a rotary sleeve-frame *b*, arranged within *a* and having at each end collar F and jaws G and journal-box X, sliding blocks H carrying shaft I with driving-pulley and cutting-wheel, the adjusting-screws U for the block H, and the shaft S with hand-wheel and bevel-gears connecting the shaft to the adjusting-screws substantially as and for the purpose described.

4. The combination with horizontal guides, of the two concentric sleeve-frames *a* and *b* both cut away in the middle, the frame *a* being arranged to slide on the horizontal guides, and the frame *b* being arranged to oscillate within *a* and having a rotary shaft and cutting-wheel, and means for adjusting the same substantially as shown and described.

5. The combination with the vertical plate M′ and set-screw W; of the sliding plate M having arms L with horizontal guide-rods *d*, the sleeve-frame *a* sliding on said rods, the oscillating sleeve-frame *b* with collars F, jaws G, and journal-boxes X, the blocks H arranged in said jaws and having adjusting-screws U, bevel-gears T T′, and shaft S, and the drive-shaft I with band-pulley and cutting-wheel upon its end substantially as and for the purpose described.

MICHAEL D. AHEARN.

Witnesses:
WM. HOOD,
C. E. SHULTZ.