

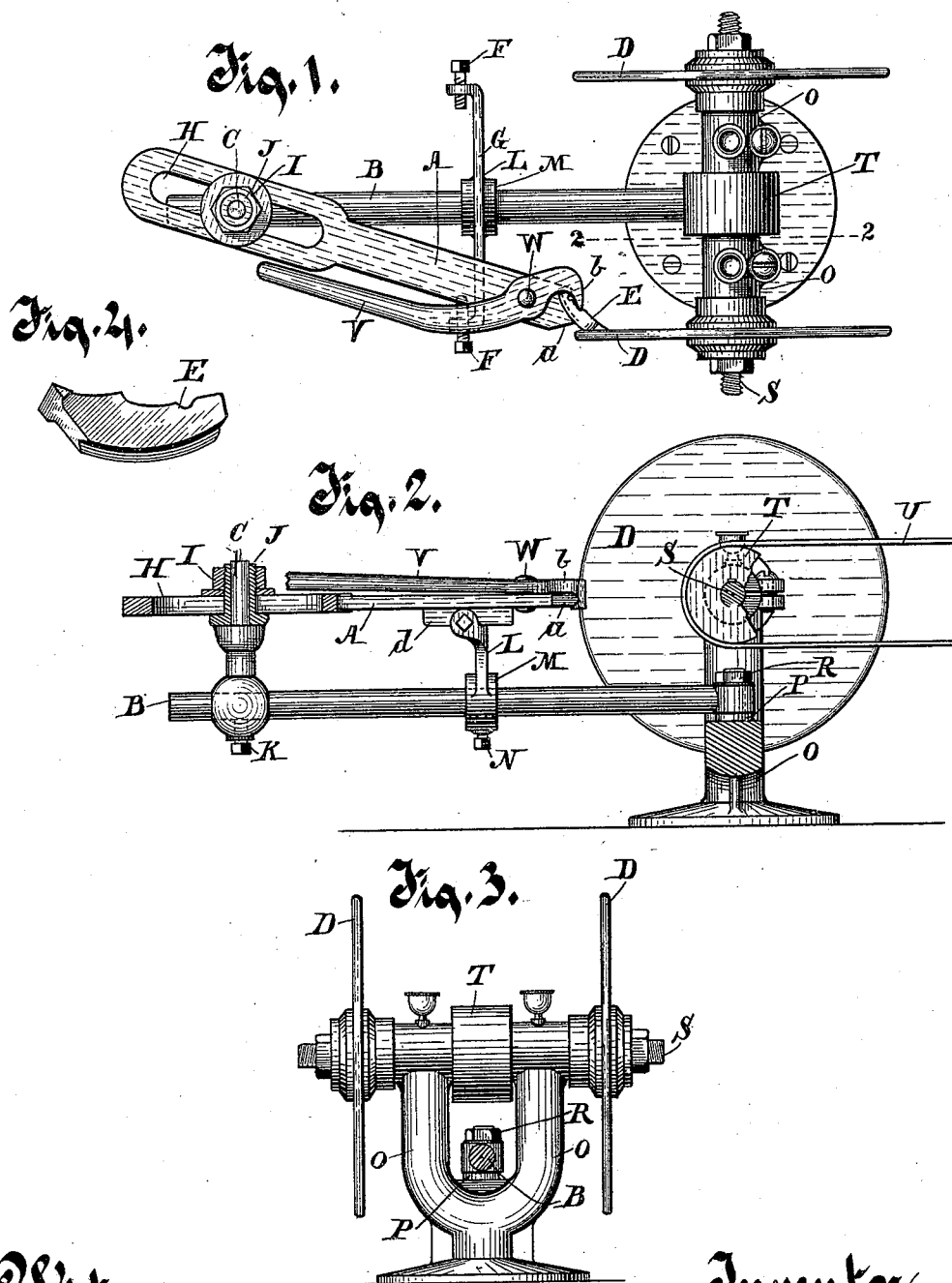
(No Model.)

H. BERGSTROM.

MACHINE FOR HOLDING AND SHARPENING INSERTIBLE SAW TEETH

No. 421,896.

Patented Feb. 25, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

HERMAN BERGSTROM, OF BIG WAUSAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO GEORGE M. BEACH, OF SAME PLACE.

MACHINE FOR HOLDING AND SHARPENING INSERTIBLE SAW-TEETH.

SPECIFICATION forming part of Letters Patent No. 421,896, dated February 25, 1890.

Application filed November 6, 1889. Serial No. 329,425. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN BERGSTROM, of Big Wausaukee, in the county of Marinette and State of Wisconsin, have invented new and useful Improvements in Machines for Holding and Sharpening Insertible Saw-Teeth; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in machines for holding and sharpening insertible saw-teeth, or that class of teeth which are adapted to be detached from the saw-blade when worn or dull for the purpose of sharpening them.

The object of my invention is to provide a device by which a tooth which has been thus detached from the saw-blade may be held rigidly at the required angles against rotating emery-wheels or grinding-surfaces for grinding its respective sides until a perfect edge is formed, and whereby the teeth thus sharpened are all given the same uniform shape and bevel desired.

The construction of my invention is further explained by reference to the accompanying drawings, in which—

Figure 1 represents a top view thereof. Fig. 2 is a side view drawn on line 2 2 of Fig. 1, and Fig. 3 is an end view of the same device shown in Fig. 1. Fig. 4 is a perspective view of one of the insertible saw-teeth detached from the saw-blade.

Like parts are represented by the same reference-letters throughout the several views.

A is a tooth-holding lever, which is secured at its outer end upon the collar J to the supporting-pivot C, upon which pivot C it is adapted to turn in an arc of a circle corresponding to the distance between the emery-wheels or rotating grinding-surfaces D D, whereby the insertible saw-tooth E, which is firmly held by the tooth-retaining jaws *a b* of said lever A, may, by swinging said lever A toward the right and left, be brought alternately against the grinding-surfaces of said emery-wheels. The lever A is preferably pivoted on a line midway between the two

grinding-wheels D D, and the tooth-retaining jaws are so shaped as to hold the surfaces of the tooth to be ground at the required angle against the grinding-surfaces to grind the tooth in the desired form, whereby it is obvious that when the tooth is held in place by the retaining-jaws of said lever A and said lever is thrown toward the right one side of said cutting-tooth is ground by the grinding-wheel upon the right until it is given the required shape upon such die, when said lever A is swung toward the left, when the opposite side of said tooth is thereby brought against the other grinding-wheel upon the left, and is thus held until such side of the tooth is also ground to the required shape and the desired cutting-edge is given to the tooth.

To facilitate in grinding said teeth all of uniform shape and thickness as they are thus brought upon the respective grinding-surfaces, I have provided adjustable stops F F, one upon each side of said swinging lever A, by which the swinging movement of said lever is limited and adjusted at the required point to give the teeth, when ground, the required shape, as stated. The stops F F have screw-threaded bearings in the supporting-arms G, whereby they may be adjusted farther apart or nearer together, as may be required.

To facilitate in adjusting teeth of different lengths or the same teeth at different angles to the grinding-surfaces, the lever A is provided with an elongated slot H for the reception of the sleeve J, which slot permits of the longitudinal adjustment of said lever upon such sleeve, and when the desired adjustment is produced the lever is secured at such point upon the sleeve by turning down the clamping-nut I firmly against said lever. It will be understood that the sleeve J turns freely upon the supporting-pivot C as said lever is swung toward the right and left. The lower end of the supporting-pivot C is adjustably connected with the supporting-standards O of the grinding-wheels by the arm B, the lower end of said pivot C being provided with an aperture for the reception of the free end of said arm B, and said pivot C is secured to said arm by set-screw K. If desired, said

pivot C may be turned upon the supporting-arm B by first loosening said set-screw K, whereby the relative position of the teeth to the grinding-surfaces may be changed, as  
 5 may in some cases be desired. The stop-supporting arms G are also held in place and connected with the supporting-standards of the grinding-wheels by the shaft or arm B, with which it is rigidly connected by the arm  
 10 L, collar M, and set-screw N. The arm B is affixed to the supporting-standards O of the grinding-wheels by the supporting-standard P, and is rigidly secured to said supporting-standard by the nut R. The grinding wheels  
 15 or surfaces D are rigidly secured to the respective ends of the supporting-shaft S by clamping nuts and collars in the ordinary manner.

T is a driving-pulley, through which motion is communicated from a driving-belt U to the shaft S, and from thence to the respective grinding-pulleys D.

For convenience of construction one of the tooth-retaining jaws is formed on the end of the swinging lever A, and the other is formed  
 25 at the end of the lever V. The lever V is secured to the arm A by a retaining-pivot W, whereby by drawing said levers A and V firmly toward each other the jaws *a* and *b* are  
 30 brought firmly upon the respective sides of the tooth to be ground, and said tooth is thereby held rigidly in place and at the desired angles against the grinding-surfaces, as mentioned. When the tooth has been thus  
 35 ground, it is permitted to drop from its retaining-jaws by simply throwing the lever V toward the right, when another tooth is readily inserted and the operation described is repeated.

40 The lever A is provided with a downward-projecting block or bearing *d*, which, as said lever is swung toward the right and left, is brought against the adjustable stops F F, whereby the movement of said lever is  
 45 stopped and limited.

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

1. In a machine for holding and sharpening insertible saw-teeth, the combination of a  
 50 single rotating shaft S, mounted upon the supporting-standard O, two emery-wheels or grinding-surfaces D D, and driving-pulley T, affixed to said shaft, supporting-lever B, secured at one end to said supporting-standard  
 55 O, swinging tooth-holding lever A, adjustably secured to the free or outer end of said arm B upon the supporting-pivot C, supporting-pivot C, adjustably secured to the outer end of said arm B, said lever A being provided  
 60 with a tooth-retaining clamp or mechanism, lever-supporting arm G, affixed to said swinging arm B at an intermediate point between the lever-supporting pivot C and the standard O, and adjustable stops F, affixed to the  
 65 respective ends of said arms G and adapted to limit the movement of said swinging lever A as the respective sides of the thereby-supported tooth is brought against the respective grinding-surfaces D D, substantially as and  
 70 for the purpose specified.

2. The combination of the supporting-standard O, rotating shaft S, emery-wheels or grinding-surfaces D D, rigidly affixed to the  
 75 respective ends of said rotating shaft S, band-pulley T, secured to said shaft centrally between said grinding-surfaces, arm B, secured at one end to the supporting-standards of said grinding-wheels, tooth-supporting lever A, secured to said arm B by a supporting-pivot C,  
 80 tooth-retaining jaws *a* and *b*, located at the swinging end of said lever A, adjustable stops F, located upon the respective sides of said swinging arm A and adapted to adjust and  
 85 limit the movement of said arm, and stop-supporting arms G, secured centrally to said supporting-arm B, all substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

HERMAN BERGSTROM.

Witnesses:

JOHN W. MONROE,  
 FRED IRWIN.