

(No Model.)

C. C. PARKE.
SAW SWAGE.

No. 552,072.

Patented Dec. 24, 1895.

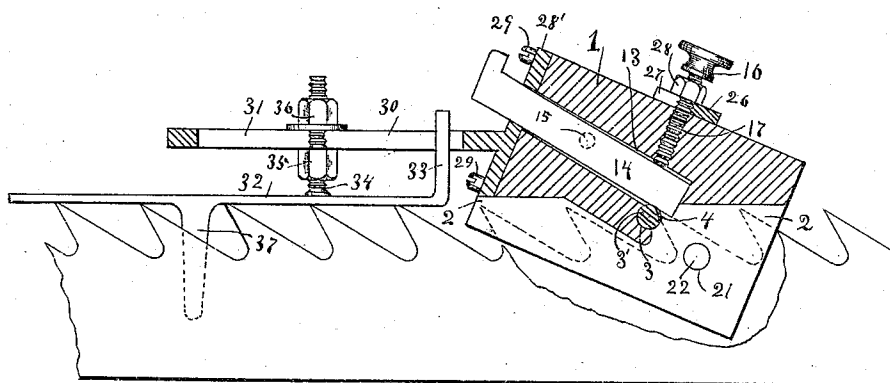


Fig. 2.

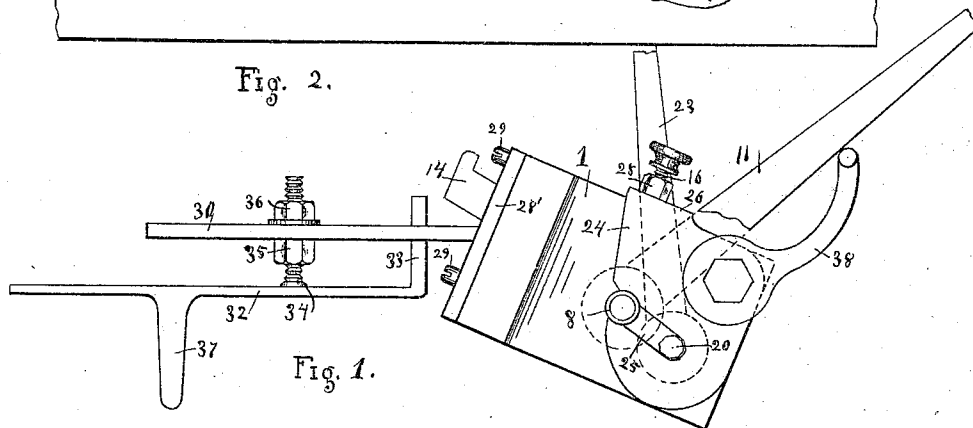


Fig. 1.

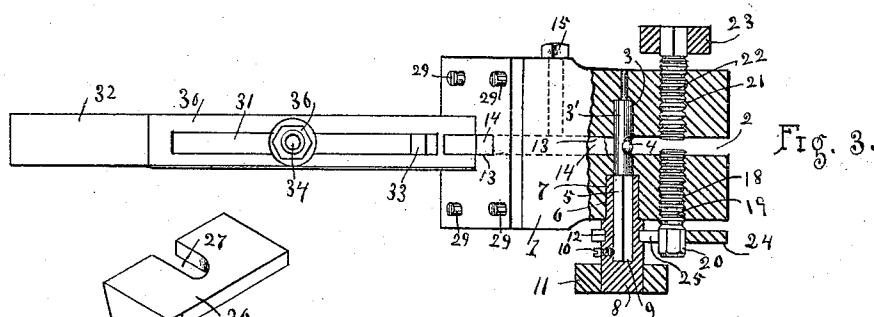


Fig. 3.

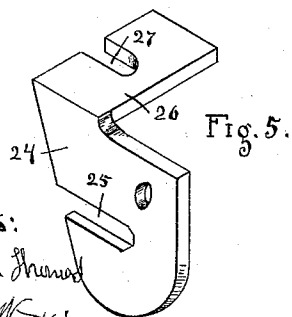


Fig. 5.

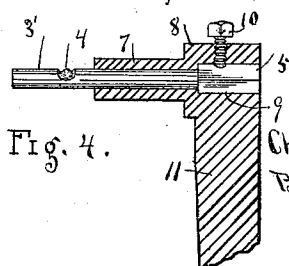


Fig. 4.

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UNITED STATES PATENT OFFICE.

CHRISTOPHER C. PARKE, OF BAY CITY, MICHIGAN, ASSIGNOR TO AMOS S. PARKE, OF SAME PLACE.

SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 552,072, dated December 24, 1895.

Application filed August 25, 1894. Serial No. 521,294. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER C. PARKE, a citizen of the United States, residing at Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Saw-Swages, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in that class of saw-swages in which an oscillating die is used for performing the swaging action; and the invention consists chiefly in the combination, construction and operation of the several parts, as will be fully described in the following specification, and particularly set forth in the claims following.

The objects of the invention are to so arrange and construct the swaging devices that true and uniform points can be formed on the teeth of the saw with ease and dispatch.

Another object is to arrange devices whereby the swage may be adjusted quickly and easily to adapt it to swaging teeth of different sizes and shapes.

My invention will be found illustrated in the accompanying drawings, in which—

Figure 1 represents a side view in elevation of a saw-swage containing my improvements. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a horizontal view of the same, partly sectional. Fig. 4 is a section of the die-chuck in a modified form. Fig. 5 is a detached isometrical view of the device for holding the die in place.

1 represents the swage-block provided on its under side with a slot 2 for containing the saw, and 3' is a swaging-die extending through an opening 3, which is formed transversely with the slot, so that the face 4 of the die is exposed in the slot.

The inner end portion of the die is cylindrical while its outer portion 5 is rectangular, and the outer portion of the opening 3 is provided with a counterbore or enlargement 6, into which is fitted the inner end portion 7 of a chuck 8, which is also provided with a longitudinal opening 9, fitted to contain the portion 5 of the die, and a set-screw or pin 10 is passed through one side of the chuck and into the side of the outer end of the die for retaining the same in position.

The chuck 8 is provided with a lever 11 with which to oscillate the same, and between the lever and the die-block a groove 12 is arranged around the chuck, for a purpose which will be presently explained.

Above and in rear of the die-face the die-block is provided with a longitudinal opening 13, extending to a point just in front of the die-face and opening into the slot 2, and in this opening is placed an anvil-die 14, having the under side of its inner end near the die-face, and this anvil-die is held in position by the set-screw 15, passed through one side of the block and with its inner end resting against the side of the die, while above the inner end portion of the die is an adjusting-screw 16, passed through a threaded opening 17 in the upper portion of the block.

At one side of the block in front of the die is a transverse threaded opening 18, into which is passed a threaded bolt 19, with its inner end extending into the slot 2, and with its outer end provided with a hexagonal head 20, extending from the opening; and in the opposite portion of the block is provided a similar threaded opening 21, containing a clamping-bolt 22, with its inner end extending into the slot and opposing the end of the bolt 19, and the outer end of this bolt 22 is provided with a lever 23 with which to turn the bolt.

24 is a plate which is provided on its front portion with a slot 25, arranged to pass over the head 20 of the clamping-bolt and retain the same against turning, and with the sides of its outer portion resting easily in the groove 12, in the chuck before mentioned, for retaining the chuck in position in the counterbore. The upper portion of the plate is provided with a lateral extension 26, which reaches over and rests upon the upper side of the block 1, and a transverse slot 27 is formed in the rear side of the extension which passes over the projecting portion of the adjusting-screw 16, and above the slot the screw is provided with a jam-nut 28, which, turned down tightly upon the extension, retains the plate in position, so that whenever it is necessary to remove the die or adjust the bolt 19 the nut 28 can be slackened off, and the plate is then free to be removed and again replaced when the adjust-

ment is made, and the nut being then tightened down all the parts are held in position as before, the clamping-bolt being retained by the slot 27 fitting over the flattened sides of the head portion thereof.

Upon the rear side of the block 1 is secured a plate 28' by suitable screws 29, and from the middle portion of this plate an arm 30 extends rearwardly, and this arm is provided with a slot 31, and beneath this arm 30 is placed a guide-arm 32, provided on its front end with a portion 33, upturned and fitted to slide in the slot 31, through which it passes, and a stud-bolt 34, solidly attached to the guide-arm in about its middle, extends upwardly through the slot 31 and is provided with a nut 35 beneath and with a nut 36 above the arm 30, so that by turning the nuts in the proper direction the guide-arm may be adjusted to the proper height and firmly secured in position.

The guide-arm is provided on each side with downwardly-extending fingers 37, reaching over each side of the saw for retaining the arm in proper position upon the saw-teeth when the swage-block is lifted for moving from one tooth to another, and the under side of the arm rests upon the points of one or more saw-teeth for retaining the block in a proper position when the die is being oscillated by a rearward movement of the lever for swaging a tooth, the front portion of the block held by the clamping-bolts being turned to impinge solidly against the sides of the tooth, the vertical adjustment of the guide-arm allowing the block to be tilted in the required direction to bring the under face of the anvil-die 14 in alignment with the back side of teeth of different saws which have a different inclination or slope.

In practice the lever 11 is turned forward to rest upon the stop-arm 38, which is secured to the side of the plate 28, and the block is then placed in position with the teeth of the saw, with the slot and with the point of the tooth to be operated upon resting between the die-face and the anvil-block. The lever 23 is then turned to impinge the end of the bolt firmly against the side of the saw, the opposite bolt remaining stationary against the opposite side of the saw, which then firmly holds the block in position with the guide-arm resting upon the points of the teeth in rear of the block. The lever 11 is then moved to the rear, and the die being oscillated its face impinges upon the front side of the saw-tooth and spreads the metal thereof laterally.

It will be noticed that the die 3' is subjected to a powerful strain during the swaging operation, and in order to provide a more solid and rigid support for the same the counter-bore 6 is provided and the portion 7 of the chuck is extended into the block nearly to the slot 2, so that the swaging-die, which must be of a limited size to operate properly upon the tooth, is thereby stiffened and supported to a point in close proximity to its

working part, and then the die when worn out may be removed and another substituted without great inconvenience or cost, and this construction is especially important as the heavy work and constant torsional strain to which the die is subjected causes the die to quickly give out and break.

In Fig. 4 a modified form of the chuck and die is shown, the opening extending entirely through the chuck, and the outer portion only is of a rectangular form, and the die has a corresponding rectangular portion, so that the die may be removed from or inserted in the chuck without removing the chuck from the counter bored chamber, and this form is particularly advantageous when a very small die is required for thin saws having small teeth, as the opening through the portion 7 being circular does not cut away and weaken this portion of the chuck.

It will be further noticed that by constructing the anvil-die in the improved form shown a broad and solid bearing is provided for the back side of the saw-tooth to retain it against the swaging action, without liability of indenting the anvil-die into the tooth, or liability of lifting away and allowing the swaged end of the tooth to be lifted above the remainder or body part thereof, and at the same time the die may be easily removed and refaced after becoming worn and imperfect from constant use.

Of course it will be understood that the oscillating swaging-die with the block and clamping-bolts for holding the saw are not new of themselves, and I do not pretend to claim these portions independently; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a saw swage, the combination of the swage block carrying a transversely arranged chuck provided with an actuating lever, and having a partly angular bore and a peripheral groove, the die seated in the angular portion of said bore and adapted to have axial movement in the swage block with said chuck, the anvil die arranged in said swage-block, shouldered holding screw for said anvil-die, the slotted plate having at its upper edge a slotted lateral extension, and with said extension, adapted to engage and connect said chuck and shouldered holding screw, respectively, and means for clamping said swage-block upon the saw-blade, substantially as set forth.

2. The combination with the swage block having an opening 3, with an enlarged outer chamber 6, of the chuck 8, provided with a lever 11, and with a lateral portion 7, fitted into said enlarged chamber 6, and with a central rectangular opening 9, a die 3', within the opening 3, and provided with a die face 4, and having a rectangular portion 5, extending into said opening 9, of the chuck, and an anvil die for opposing said die face, substantially as set forth.

3. The combination with the swage block

having a transverse opening 3, provided on its outer portion with a counter-bored portion 6, a swaging die 3', extending into said opening 3, and having its outer portion 5, of rectangular form with a chuck 8, having a portion 7, extending into said counter bore 6, and provided with a rectangular opening 9, passed over the portion 5, of the die, a screw 10, passed into the chuck against the portion 5, a lever 11, for oscillating the chuck and an anvil die opposing said swaging die face, substantially as set forth.

4. The combination of the swage block provided with a slot 2, a swaging die 3', extending into the block across the slot and provided with a die face 4, and having its outer end secured to a chuck 8, provided with a lever 11 and a groove 12, an anvil die 14, above the die face, a screw 16, passed into the block

above the anvil die and provided with a nut 20 28, the clamping bolt 19, passed into one side of the block and provided on its outer end with a head 20, and a clamping bolt 22, passed into the block opposite the bolt 19, with a plate 24, on the side of the block and provided with the slot 25, fitted over the head 20, and with its edges resting into said groove 12, and provided on its upper edge with a lateral extension 26, reaching over the swage block and having the slot 27, extending over the bolt 19, beneath the nut 26, for retaining the parts in position, substantially as set forth.

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

CHRISTOPHER C. PARKE.

Witnesses:

GEO. P. THOMAS,

JAS. E. THOMAS.