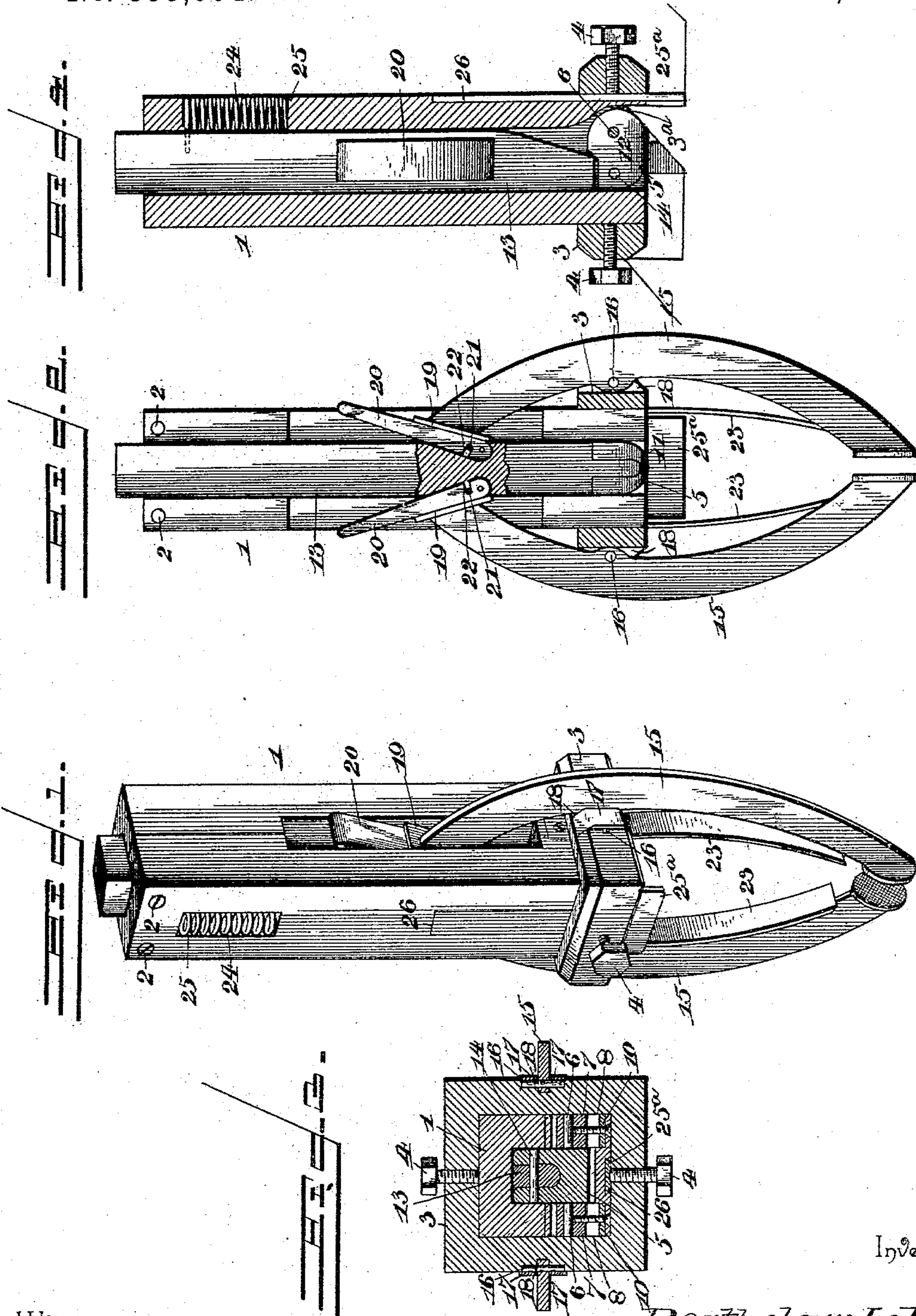


(No Model.)

B. LA FLEUR.
SAW SWAGE.

No. 553,004.

Patented Jan. 14, 1896.



Witnesses

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SAW-SWAGE.

SPECIFICATION forming part of Letters Patent No. 553,004, dated January 14, 1896.

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To all whom it may concern:

Be it known that I, BARTHELEMI LA FLEUR, a citizen of the United States, residing at Hilgard, in the county of Union and State of Oregon, have invented a new and useful Saw-Swage, of which the following is a specification.

This invention relates to an improvement in saw-swages.

The object of the invention is to improve the construction of devices for swaging or spreading the teeth of the various kinds of saws, which will be simple and inexpensive in construction, convenient and efficient in practice, and which will automatically grasp the blade of the saw simultaneously with the operation of the die upon the saw-tooth.

A further object of the invention is to provide a gage for preventing the frame of the swage from descending too far upon a saw-tooth, with a view to regulating the exact point out of the tooth upon which the swaging-die operates.

The invention consists in the combination, with a suitable handle, of a pivoted die and a plunger connected therewith and extending through the central bore or perforation of the handle into convenient position to be struck by a sledge or hammer; in making the handle in two equal or substantially equal parts, and in connecting said parts by means of a surrounding rectangular collar and in interposing a vertically-adjustable gage between the handle and said rectangular collar; in mounting an oppositely-disposed pair of clamping-arms in said rectangular collar, and providing the plunger with inclined arms for acting thereon in such manner as to clamp the saw simultaneously with the operation of swaging; also in certain features and details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a saw-swaging tool constructed in accordance with my improvements. Fig. 2 is a vertical section through the same, showing the plunger and clamping-arms in elevation, and also the die and the springs for opening the clamping-arms. Fig. 3 is a horizontal section through the rectan-

gular collar and the lower end of the two-part handle, showing the manner of adjusting the position of the die. Fig. 4 is a vertical section through the handle taken at right angles to Fig. 2, showing the plunger-returning spring.

Similar numerals of reference indicate corresponding parts in the several figures of the drawings.

Referring to the drawings, the handle of my improved device is made in two similar and equal or nearly equal sections 1, each of which is provided with a vertical groove on its inner face forming, when the two parts of the handle are assembled, a central aperture or rectangular perforation extending lengthwise of and entirely through the handle. The two sections of the handle are held together at or near the top by means of screws 2, and at their lower ends by means of a rectangular reinforcing-collar 3 which snugly embraces the lower ends of the two parts of the handle, being secured in place thereon preferably by means of a set-screw 4.

One of the handle-sections is hollowed out or cut away, as shown at 3^a, to receive the swaging-die, and thus constitutes the anvil against which the teeth are swaged, the band or collar 3 serving to stiffen and strengthen the handle or stock at such point.

The die or swaging-tool proper is pivotally mounted at or near the lower end of the handle and within the aperture extending through said handle, being journaled on a transverse pin or shaft 6 mounted at its ends in bearing-blocks 7, which are adjustable horizontally in slots or elongated apertures 8 oppositely disposed in either side of the handle, and said sliding boxes or bearings are adjustable back and forth in said slots 8 by means of regulating-screws 10. By means of this construction the position of the die 5 may be regulated to suit saw-teeth of different sizes and shapes. The die 5 is provided with a rounded working face, as indicated at 11, and is provided with a centrally-arranged horizontal perforation 12, by means of which it is hinged upon the shaft 6. The die is extended on one side of the shaft 6 and is slotted to receive the lower end of a plunger 13, both said die and plunger being provided with aligned perforations in which is inserted a pivotal connecting-pin 14.

The plunger 13 extends upward entirely through the central aperture of the handle and is extended slightly above the upper end thereof, where it is adapted to be operated upon by a sledge or hammer.

An oppositely-disposed pair of clamping-arms 15 made in curved or circular form, as shown, are journaled at points intermediate their ends upon short horizontal pins or shafts 16 secured to the side edges of the rectangular collar 3 which surrounds the two-part handle at its lower end by means of metallic straps 17, secured above and below to said collar, and embracing at their central portion or bend said shafts or pins 16. In order to accommodate the inner edges of said clamping-arms, the rectangular collar 3 is notched or recessed at 18. At their lower ends the clamping-arms 15 are provided with buttons or clamping-faces 20 which are roughened or serrated on their inner adjacent grasping-faces for engaging the saw-blade. The upper ends of said clamping-arms 15 are provided with widened or enlarged ends 19 which are adapted to be operated upon by an oppositely-disposed pair of inclined arms or wedges 20 secured to the plunger 13.

The arms or wedges 20 are pivoted at their lower ends to the plunger 13, and are capable of being adjusted as to their angle with the plunger by means of set-screws 21 and notches or slots 22 in said arms or wedges with which the screws engage. The clamping-arms 15 are normally held apart at their lower extremities by means of an oppositely-disposed pair of flat springs 23, which are secured at their upper ends to the handle 1 and press outwardly at their lower ends upon the inner edges of said clamping-arms. The plunger 13 is normally upheld by means of a spiral spring 24 resting in a vertical slot 25 in one of the handle-sections, said spring being secured at one end to the handle in any convenient manner and at its opposite end to the plunger, thus permitting the plunger to be depressed, and serving by its tension to uplift the plunger when the latter is released.

In order to regulate the position of a saw-tooth with relation to the die or swage, a gage 25^a is provided, said gage being formed with a vertically-extending shank having inclined side edges adapting said shank to engage a dovetailed groove 26 in one side of the handle. The gage 25 may be adjusted to any desired extent vertically, and when at the proper point is held securely to its adjustment by means of the set-screw 4 above referred to, which presses firmly against the outer face of the shank of the gage, thus binding the same securely in place.

In operation, after having adjusted the gage 25 to the desired point for enabling the die to act properly upon the saw-tooth, the swaging device is taken in one hand and placed upon the saw-blade in such manner that the die is on the top side of the tooth and the clamping-arms caused to embrace the saw-blade. The plunger now being struck by a

sledge or hammer is depressed, and the inclined arms or wedges on said plunger operating upon the upper ends of the clamping-arms cause the latter to firmly grasp the saw-blade at precisely the moment that the die operates upon a tooth. The die being rounded on its operative face and pivoted, as above described, acts upon the tooth in such manner as to force the same against the anvil portion 3^a of the handle and spread it out laterally instead of upsetting the metal in the usual manner. This operation may be performed without removing the saw-blade from its working position, and by reason of the die working upon the top of the tooth less filing is required and the point of the tooth is rendered wide, sharp, and flat, the operation also condensing the metal at the working point of the tooth, thereby enabling said tooth to retain its cutting capacity for a longer period than where sharpened by filing.

It will be apparent that various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a saw swage, a handle formed with a longitudinal bore the wall of which constitutes the anvil of the device, in combination with a swaging die pivotally mounted within said longitudinal bore and capable of movement as to its working face transversely of the handle or toward the wall of the longitudinal bore, and a reciprocating plunger operating within said handle and attached pivotally to said die, as specified.

2. In a saw swage, the handle constituting also the anvil, in combination with a vertically movable plunger, a pivoted die operated upon by said plunger, an oppositely disposed pair of clamping arms pivotally connected with said handle, and means substantially as described for simultaneously operating the die and forcing said clamping arms together at their lower ends, substantially as specified.

3. In a saw swage, the handle constituting also the anvil, in combination with a pivoted die, a vertical plunger connected with and operating said die, a pair of oppositely disposed clamping arms for engaging the saw blade, springs for holding said clamping arms normally apart at their lower ends, and adjustable inclined arms or wedges carried by the plunger and adapted to operate upon the upper ends of said clamping arms, all arranged for joint operation, substantially as described.

4. In a saw swage, the handle thereof made in two equal or nearly equal sections, one of which constitutes the anvil, each section being grooved in such manner that when brought together a central aperture is formed extending lengthwise through said handle, in combination with a surrounding collar connecting said sections, a set screw for holding

said collar in place, a die located at the lower end of said handle, and a vertically movable plunger extending through the central aperture of the handle and connected with and adapted to operate said die, substantially as described.

5. In a saw swage, a handle made in two similar sections grooved in such manner as to form a central aperture extending through the handle when the two parts thereof are assembled, and one of said sections forming the anvil, in combination with a surrounding collar, a vertically adjustable gage mounted in a dove-tailed groove in one side of the handle, a set screw passing through said collar and bearing against the gage for holding the latter at the desired adjustment, and a suitable plunger and swaging die arranged substantially as and for the purpose specified.

6. In a saw swage, a handle constituting also the anvil of the device and provided with a vertical aperture extending from end to end thereof and also provided with oppositely disposed slots at its lower end, in combination with a die pivotally mounted on a horizontal shaft, a plunger operating upon said die, the

horizontally adjustable boxes in which said shaft is journaled slidably mounted in said slots, and set screws for adjusting said boxes for regulating the position of the die and adapting the latter to teeth of different sizes and shapes, substantially as described.

7. In a saw swage, a centrally perforated handle, forming also the anvil of the device, in combination with a detachable collar surrounding the same, a pair of oppositely disposed clamping arms hinged to said collar at points intermediate their length, a die located at the lower end of said handle in the base of its central perforation, and a vertically movable plunger co-operating with said die and clamping arms and adapted to actuate said die and clamping arms simultaneously, substantially in the manner and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BARTHELEMI LA FLEUR.

Witnesses:

JOHN F. HESTER,
JOHN D. CASEY.