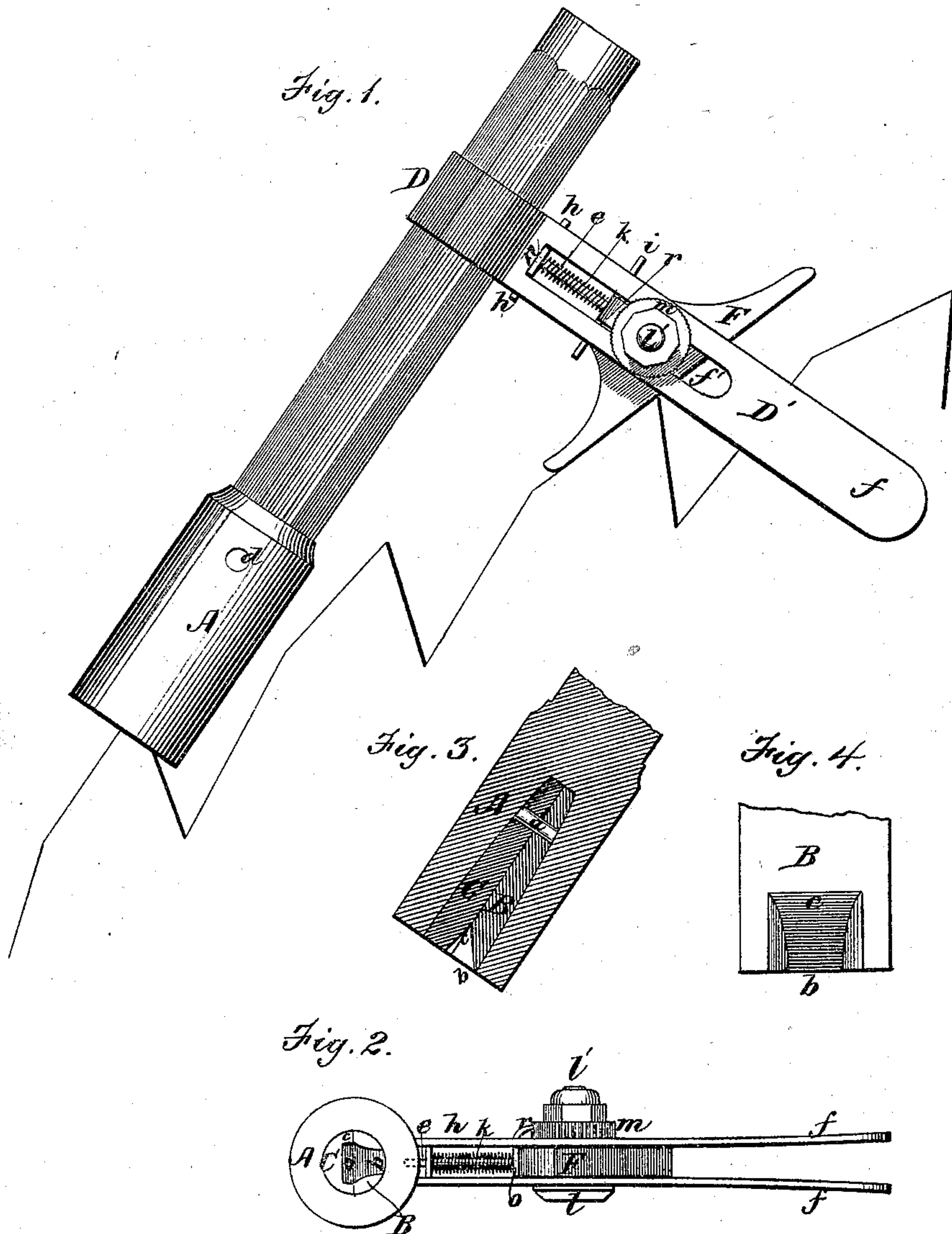


C. F. HENIS.
Saw-Swaging Devices.

No. 134,666.

Patented Jan. 7, 1873.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES F. HENIS, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN SAW-SWAGING DEVICES.

Specification forming part of Letters Patent No. 134,666, dated January 7, 1873.

CASE A.

To all whom it may concern:

Be it known that I, CHARLES F. HENIS, of the city and county of Baltimore and State of Maryland, have invented a new and Improved Saw-Swaging Device; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a side elevation of the whole apparatus applied to a saw; Fig. 2 is an end view of the same; Fig. 3 is a longitudinal section through the swage and holder; and Fig. 4 is an elevation of the face of the part B of the swage.

Similar letters of reference in the accompanying drawing denote the same parts.

This invention belongs to that class of swages employed for sharpening and setting the teeth of saws; and it has for its object to improve the construction of such a swage in such manner that, first, the swage shall be prevented both from becoming loosened in its holder and from the forcing of either of its parts past the other in the holder by the blows given to the latter; second, that all the teeth of the saw shall receive the same edge and set, and also a set equal on both sides; third, that the swage-holder, and also the rider that sits on the saw-teeth, shall be securely fastened in the arm that supports both; and, fourth, that the said arm shall straddle the saw and support the holder at all times parallel to the plane of the saw in order to swage and set all the teeth uniformly. To this end the invention consists, first, in a conical swage made in two parts which are pivoted together and placed in a conical recess in the swage-holder; second, in a swage having a recess with a symmetrical flare at each side; third, in the combination, with the swage-holder and the arm which supports it, of a sliding pin to hold the two together; fourth, in the combination, with the rider and the arm which supports it, of a device for locking the nut which fastens the rider to the arm; fifth, in the combination, with the swage-holder, of a bifurcated arm which straddles the saw.

In the drawing, A is the swage-holder, which needs no specific description except in the particulars hereinafter mentioned. The swage is

made in two longitudinal halves, B C, which, when detached from the holder, swing freely past each on a pivot, *a*. This pivot not only serves to keep the parts B C together when removed from the holder, but also to prevent either part being forced past the other in the holder under the impact of the blows bestowed upon the latter during the process of swaging the saw-teeth. The swage, as a whole, is made conical, and fits in a conical recess in the end of the holder. This construction prevents the swage from working loose in the holder during the process of hammering, as the harder the holder is struck the tighter the swage gets. The recess in the end of the swage is made with a narrow part, *b*, of just the width of the saw, and a wider part, *c*, which has an equal flare to each side of the part *b*. The point *c* receives the points of the teeth and gives them a set which is the same for all the teeth, and equal on both sides of each tooth. A hole, *d*, made transversely through the head of the holder, and communicating with the inner end of the recess therein, admits a tool, which, when driven against the conical side of the swage, forces it out of the holder. The shank of the holder fits loosely the eye D of a bifurcated arm, D', which straddles the saw and thus centers the holder. The eye D is fastened at any desired point of the holder by means of a pin, *e*, entering either one of several holes made in a line in the under side of the shank, and placed between the forks *f f* of the arm D', the lower end of the pin entering a hole in the top of the rider F. The pin *e* bears a cross-piece, *h*, which extends between the forks *f*, and has also lugs *n* which enter slots *f'* in the forks *f*. A spring, *k*, incloses the pin *e* and bears against the cross-piece *h*, thus keeping the pin in place in the shank, and also allowing it to be withdrawn from the shank at pleasure. The rider F is supported upon a metal block placed between the forks *f* and passing through the slot *f'* in one of them. Said block has a head, *l*, outside of the fork, through which it passes, and also a threaded bolt, *v*, passing through the other slot *f'*, on which bolt, outside of the fork, is a milled nut, *m*, by which the forks can be tightened on the rider. To prevent the nut from being loosened by the jar of the blows in swaging, I provide a locking device, consisting of

a cross-bar, *o*, placed on the pin *e* and extending between the forks *f*, from which cross-bar an arm, *r*, extends through the adjacent slot *f'*, said arm being bent downward and furnished at its outer end with teeth, which engage with the milled nut and stop it from turning backward.

What I claim as new is—

1. A conical saw-swage, in combination with a swage-holder having a conical recess for its reception, when the said swage is made in two parts which are connected together by a pivot, as specified.

2. The saw-swage made in two parts, connected together, and inserted in the swage-holder, and having a recess flaring symmetrically at each side, substantially as described.

3. A conical saw-swage composed of two longitudinal parts pivoted together and having an end recess formed partly in each to re-

ceive the point of a saw-tooth, substantially as described, and for the purpose specified.

4. The combination of the swage-holder *A*, arm *D'*, and a sliding pin to fasten the arm upon the holder, substantially as explained.

5. The combination of the arm *D'*, rider *F*, nut *m*, nut-lock *o* *r*, and a spring, all arranged as described.

6. The combination of the swage-holder *A* and bifurcated arm *D'*, as specified.

7. A saw-swage held upon the teeth in the plane of the saw by means of the recess in the swage-holder, the adjustable bifurcated arm, and the adjustable rider, substantially as described, and for the purpose specified.

CHARLES F. HENIS.

Witnesses:

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