

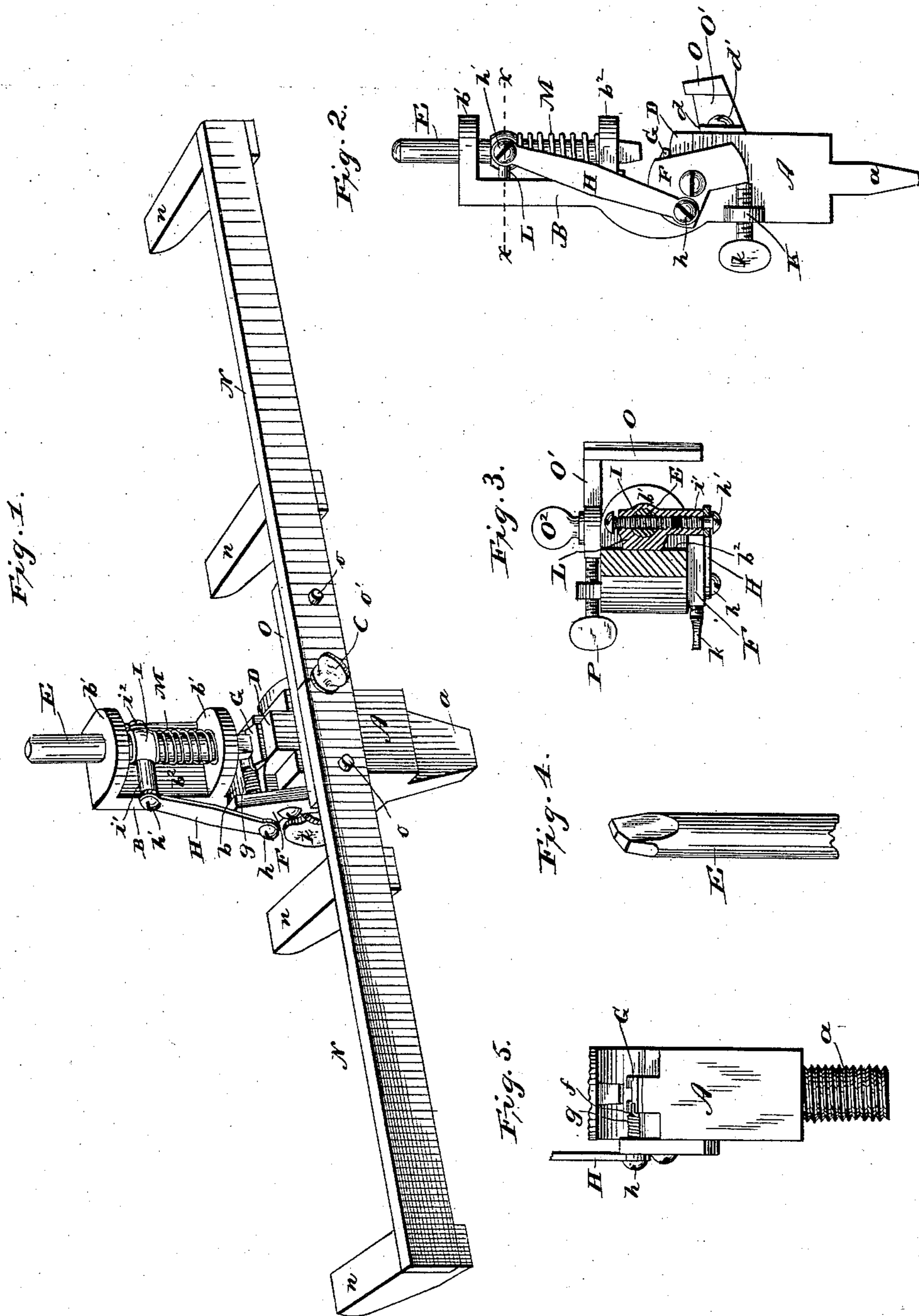
(No Model.)

E. H. KETCHUM.

SAW SET.

No. 401,785.

Patented Apr. 23, 1889.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## SAW-SET.

SPECIFICATION forming part of Letters Patent No. 401,785, dated April 23, 1889.

Application filed August 15, 1888. Serial No. 282,780. (No model.)

*To all whom it may concern:*

Be it known that I, EVERETT H. KETCHUM, of Jamestown, in the county of Chautauqua and State of New York, have invented certain  
5 new and useful Improvements in Automatic Saw-Sets; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

The present invention has for its object the improvement of saw-sets of the character described and claimed in my prior patent, No.  
15 287,835, dated November 6, 1883, whereby the same is rendered more efficient and the construction greatly simplified, to which ends the invention consists in certain novel features of construction and combinations and arrangements of parts, all as will be hereinafter described, and pointed out particularly in the  
20 claims at the end of this specification.

In the accompanying drawings, Figure 1 is a perspective view of a saw-set constructed in  
25 accordance with my invention. Fig. 2 is a side elevation with a small saw-table attached. Fig. 3 is a section on the line  $x x$ , Fig. 2, showing the means for preventing the rotation of the punch. Fig. 4 is a view of the preferred  
30 form of punch. Fig. 5 is a view of a modification.

Similar letters of reference in the several figures indicate the same parts.

The base A of the set is provided at the  
35 bottom with a projection,  $a$ , for insertion in a mortise or to be grasped by the jaws of a vise or with a screw-thread projection cast integral therewith, as shown in Fig. 5, and at the top the base is carried up in the form of  
40 a standard, B, having the recess  $b$  to accommodate the movable arm, and two brackets or projections,  $b'$ , with bearings for the punch therein, the portion of the standard between such brackets having a straight comparatively-smooth surface,  $b^2$ , for a purpose to be  
45 presently explained.

Immediately below the two brackets  $b'$  on the forwardly-projecting portion of the base is the anvil D, preferably formed as in Fig.  
50 5—that is to say, cast integral with the base

and the top case or otherwise suitably hardened, leaving the base comparatively soft and malleable; but, as is obvious, it may be as in my prior patent or as shown in Fig. 1, wherein the anvil is inserted in a recess in the base  
55 and removably held therein by a tie-piece,  $d$ , secured to the base by screws  $d'$ . The face of the anvil is of course beveled to suit the class of work to be done, and co-operating therewith is a punch, E, reciprocating in  
60 said bearings in the brackets  $b'$ .

Pivoted to one side—preferably the left-hand side—of the base is a segmental plate, F, carrying on the inner side the stud  $f$ , upon which the gage G takes its bearings, the end  
65 of the stud being upset to prevent the gage slipping off, a spring,  $g$ , coiled around the stud and engaging the gage and plate, respectively, preventing its movement in the opposite direction, and also always insuring  
70 the engagement of the gage with the anvil, and preventing all liability of its flying up when the punch comes in contact with the anvil or intervening saw-tooth.

A single connecting rod or link, H, is piv-  
75 otally connected by screw  $h$  to the plate F in rear of its pivotal point and extends up and is similarly connected by screw  $h'$  to an arm,  $i$ , on collar I, surrounding and secured to the punch intermediate the brackets  $b'$ , this arm  
80 serving when the punch is depressed to turn the plate and carry the gage back out of the path of the punch.

For the purpose of regulating the position the gage will normally occupy on the anvil to  
85 accommodate saw-teeth of different sizes, I extend the plate downward from the pivotal point and pass a thumb-screw,  $k$ , through a projection, K, on the base, the end of the screw being in position to act as a stop for  
90 preventing the rotation of the plate, similar to that shown in my said prior patent.

The collar I, surrounding the punch, is provided at the rear with a straight surface projection L, (see Fig. 3,) which, engaging the  
95 straight surface  $b^2$  on the standard, holds the punch in alignment and prevents the connecting rod or arm H being displaced. The punch and connected mechanism is held in normal position by a spring, M, surrounding  
100

the punch and abutting against the lower bracket,  $b'$ , and the collar I. Said collar is rigidly connected to the punch by a screw,  $i^2$ , which may pass entirely through the punch  
 5 and engage a screw-thread in the arm  $i'$ , with which the screw  $h'$  also engages, (see Fig. 3,) thus greatly cheapening the cost and ease of production, or it may simply pass through the collar and engage a screw-thread in the punch.

10 The table or saw-support in the present set consists of two frames, N N, having suitable extensions,  $n$ , for holding the saw in alignment and connected at the center to a metal base, O, by means of the two pins  $o$  and thumb-  
 15 screw  $o'$ , the latter, by entering openings in the end of each of the frames, serving to hold both in position, the enlargement on the screw keeping them in close to the base O.

Referring particularly to Fig. 3, it will be  
 20 seen that the base O has a rearwardly-extending arm,  $O'$ , which is pivotally connected to the side of the standard by thumb-screw  $O^2$ , another thumb-screw P, similar to that for adjusting the segmental plate, being provided  
 25 for engaging this arm and tilting the table to regulate the set in the well-known manner. The pivotal point of the table, it will thus be seen, is in line with the anvil, thus permitting  
 30 the saw to rest squarely on the table at any point of adjustment. In this figure a small iron table is shown for operating upon small hand-saws.

In operation, the teeth of the saw are rested against the end of the gage to position them  
 35 for being operated upon by the punch, said gage being withdrawn as the punch descends, leaving the tooth still in position, as clearly set forth in my prior patent, to which reference is made.

40 The operative end of the punch is preferably formed as shown in Fig. 4—that is to say, wider at one side than the other and beveled from the center in each direction, thereby  
 45 practically forming two punches of it and adapting it for operation upon either fine or coarse tooth saws, it only being necessary to reverse the punch.

Having thus described my invention, what I claim as new is—

50 1. In a saw-set, the combination, with the anvil and the brackets in which the punch takes its bearings, of the pivoted gage and the arm pivotally connected to the punch between the brackets at one end and to the gage at the  
 55 opposite end, whereby the gage is retracted as the punch descends, substantially as described.

2. In a saw-set, the combination, with the anvil and the reciprocatory punch, of the  
 60 gage, connections, substantially as described, between the gage and punch, whereby the gage is withdrawn as the punch descends and is projected again as the punch ascends, and a spring for holding said gage in engagement  
 65 with the anvil, as and for the purpose set forth.

3. In a saw-set, the combination, with the anvil, the reciprocatory punch, and the spring for returning it to normal position, of the segmental plate carrying the pivotal gage, a  
 70 connection between said plate and punch whereby the gage is withdrawn as the punch descends, and the spring for holding the gage depressed, substantially as described.

4. In a saw-set, the combination, with the  
 75 base carrying the anvil, the standard having the brackets for guiding the punch, and the straight surface on said standard, of the punch, and the straight surface on the same engaging the straight surface on the standard  
 80 to hold the punch in alignment, substantially as described.

5. In a saw-set, the combination, with the base carrying the anvil and the standard  
 85 having the two brackets and the straight surface intermediate said brackets, of the punch moving in bearings in the brackets, and the collar secured to the punch having the straight surface engaging the straight surface on the standard for holding the  
 90 punch in alignment, substantially as described.

6. In a saw-set, the combination, with the base carrying the anvil, the standard having the two brackets with the intermediate  
 95 straight surface and the pivoted gage, of the punch moving in bearings in the brackets, the collar connected to the punch having the straight surface engaging the straight surface on the standard, the arm extending from  
 100 one side of said collar, and the rod connecting said arm and pivoted gage, substantially as and for the purpose specified.

7. In a saw-set, the combination, with the base carrying the anvil and the reciprocating  
 105 punch co-operating with said anvil, of the table or saw-support pivoted to the side of the base, and the set-screw engaging said support to adjust the inclination of the same, substantially as described. 110

8. In a saw-set, the combination, with the base carrying the anvil, of a table or support for the saw formed of the two frames united to a central base by the pins, and the single  
 115 set-screw engaging the end of both frames, substantially as described.

9. In a saw-set, the combination, with the base carrying the hardened anvil made integral therewith, of the standard extending up from one side of the base and supporting the  
 120 reciprocatory plunger for co-operating with the anvil, substantially as described.

10. In a saw-set, the combination, with the base carrying the anvil, the segmental plate carrying the short shaft on which the movable  
 125 gage is mounted, and the coil-springs surrounding the shaft and engaging the gage and segmental plate, respectively, of the punch, the collar surrounding the punch, having the straight surface projection and connected to  
 130 the punch by the screw, the short arm on the collar, and the single link or rod connecting

said arm and the segmental plate, substantially as described.

11. In a saw-set, the combination, with the reciprocating punch and segmental plate carrying the movable gage, of a collar surrounding the punch and connected to the segmental plate, said collar having a screw-threaded aperture through the same from side to side,

and a screw passing through said aperture and a corresponding aperture in the punch to unite the two, substantially as described.

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Witnesses:

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