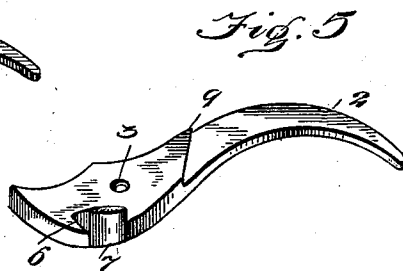
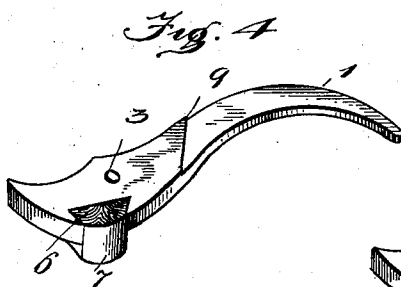
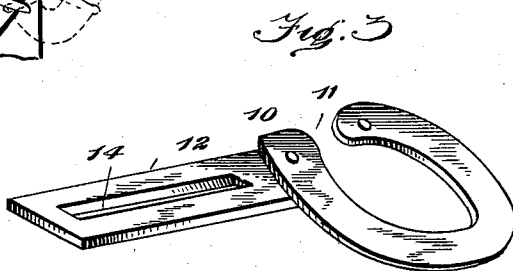
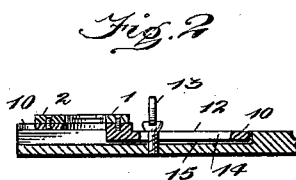
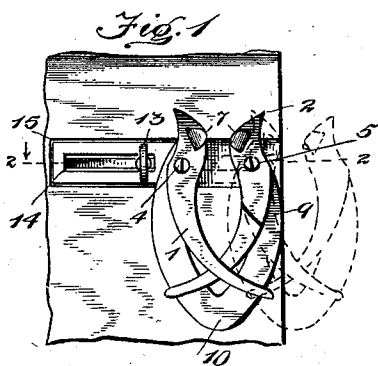


(No Model.)

E. ZIMMERMAN.  
BENCH DOG.

No. 591,519.

Patented Oct. 12, 1897.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ELI ZIMMERMAN, OF WATERTOWN, NEW YORK, ASSIGNOR OF ONE-HALF  
TO THE HITCHCOCK LAMP COMPANY, OF SAME PLACE.

## BENCH-DOG.

SPECIFICATION forming part of Letters Patent No. 591,519, dated October 12, 1897.

Application filed February 19, 1897. Serial No. 624,223. (No model.)

*To all whom it may concern:*

Be it known that I, ELI ZIMMERMAN, a citizen of the United States, residing at Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Bench-Dogs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in bench-dogs for use by workmen in rigidly holding work on a bench in position for convenient operation thereon; and the object that I have in view is to provide a simple construction which is self-adjusting to engage with a board or other work when the latter is introduced or thrust endwise between the jaws of the dog.

A further object of the invention is to provide means whereby the dog may be sustained in operative position beyond one edge of the work bench or table, which position of the dog is especially desirable when the work or board is of such width that it cannot be held steadily by the dog on the top of the work-bench.

My invention consists in the combination of an adjustable carrier provided with means for attaching it to a work table or bench in a manner to support the dog directly over and upon the table or at one side thereof, combined with the dog mounted upon said carrier and adjustable therewith; and the invention further consists in the novel combination of devices and in the construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated different embodiments thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a plan view showing the carrier and dog applied to a work-bench, the full lines illustrating the device resting upon the top of the bench and the dotted lines showing said device projected beyond the side of the bench. Fig. 2 is a sectional elevation on the plane indicated by the dotted line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the adjustable carrier. Figs. 4 and 5 are detail views of the members of the clamping-dog.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 2 designate the members of the work- 55  
holding dog. These members are made of curved or bow-shaped metal pieces and constructed for pivotal attachment to a work bench or carrier and to carry the gripping- 60  
jaws for holding the work. The members 1 2 have eyes or openings 3 formed at intermediate points of their length to receive screws, rivets, or other suitable means of attachment, (indicated at 4 5,) which form the pivots of the members and on which they are 65  
free to turn in introducing or withdrawing the work between the members. Each member is divided by its pivot or fulcrum into a long arm and short arm and the short arm is made larger and stronger than the long 70  
arm to withstand the strain imposed thereon in clamping the work. I prefer to make the short arm with a dovetailed recess 6, in which is fitted the gripping-jaw 7, of some suitable material, to frictionally engage with the work; 75  
but the employment of separate jaws is optional because the short arms may be shaped to make the gripping-jaws integral parts of the members of the dog. The long arms of the jaws are curved reversely to each other, 80  
and they are recessed or cut away on their opposing faces to permit the long arms to overlap one another. The members 1 2 are pivoted or fulcrumed in such relation to each other that the gripping-jaws face each other 85  
and are adapted to spread laterally to provide for the ready introduction of the work between the same. The long reversely-curved arms of the members are arranged to meet at their extremities when the gripping-jaws are 90  
closed to abut against each other, but when the jaws are spread or opened the arms overlap more or less in order to present their inner curved edges to the end of the work to be introduced between said jaws. The recess 95  
or cut-away portion on one or both curved arms of the members provide a shoulder or shoulders 9, against which an edge of the other member may abut in order to limit the spread of the members and the outward adjustment of the jaws away from each other, 100  
as will be readily understood. The dog thus

described may be attached directly to the top of a work bench or table, but because of the close arrangement of the dog to the table it is not well adapted to holding wide work steadily in place for the workman to operate thereon. To meet these conditions, I employ an adjustable carrier for the dog, on which carrier the dog is mounted to partake of its adjustments, said carrier being so arranged that it may sustain the dog in operative position at one side or edge of the table.

The carrier is represented at 10 in the drawings in the form of a substantially oval plate having a throat or opening 11 at one end and provided with a laterally-extending shank 12, which is rigid or integral with the carrier. This shank 12 serves in connection with a clamp 13 as a means for attaching the carrier to a work-bench for horizontal adjustment thereon, and in the embodiment shown in the drawings this shank has a longitudinal slot 14, through which passes the clamp 13, that may be loosened when the carrier is to be adjusted or which may be tightened to rigidly hold the carrier and dog in position. I prefer to make a channel or recess 15 in the top of the work-bench and to fit the shank 12 therein, so that the carrier may rest directly upon the work-bench when it is retracted within the edge of the bench, and when it is projected to sustain the dog at one side of the bench the carrier partly rests upon the bench to relieve the clamp 13 somewhat from strain, as will be understood by reference to Fig. 1.

The members 1 2 of the dog are fulcrumed to the sides of the carrier near the open throat 11 thereof, and when the jaws are opened or spread the space between them coincides with the throat 11 to permit the work to be easily introduced or withdrawn between the jaws and within the carrier. The work is introduced between the jaws and shoved endwise between the same until its end abuts against the inner edges of the overlapping curved arms of the members, thus spreading the members and forcing the jaws inwardly until the latter grip or bind against the faces of the work. The gripping action of the jaws on the work depends upon the extent to which the work is shoved into the dog, and the farther in the work is forced the tighter will the jaws grip the work. The dog is thus adapted for action automatically so far as manual manipulation of the members is concerned, because the members are free and unrestrained except by the fulcra thereof, all adjusting-screws and other devices being dispensed with in the construction of my simple bench-dog. If the width of the work is such that it cannot be held steadily by the dog when the work rests edgewise upon the table, the carrier and dog may be adjusted to occupy a position at one side of the table by releasing the clamp, then moving the carrier horizontally the

proper distance, and then fastening the carrier by adjusting the clamp. The work can be easily introduced into the dog by slipping it endwise through the carrier-throat and between the dog-jaws until the end of the work abuts against the curved arms of the members to force them apart and close the dogs upon the work. The operator may easily release the work by pulling it endwise from between the jaws or by pressing the arms of the members inwardly to spread the jaws.

I am aware that modifications in the form and proportion of parts and in the details of construction herein shown and described as the preferred embodiment of my invention may be made by a skilled mechanic without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such alterations as fairly fall within the scope of my invention.

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

1. An open-throat carrier having means for adjustably attaching the same to a suitable bench or work-table for the purpose of projecting the carrier beyond one side or edge of said table, combined with a bench-dog mounted on said carrier to be adjustable therewith and provided with means for gripping the work independently of the adjustment of said carrier, substantially as and for the purposes described.

2. The carrier provided with a work-receiving throat or space and with means for adjustably fastening the same to a work table or bench, combined with a bench-dog having its members pivoted to said carrier on opposite sides of the throat thereof and having gripping-jaws to engage with work introduced into the dog, substantially as described.

3. The combination with a work bench or table, of a horizontally-adjustable carrier provided with an open throat attached to the bench or table for adjustment at one side or edge of the table or bench or for retraction within said edge to rest upon the table or bench, and a bench-dog having its members pivoted to said carrier, as and for the purposes described.

4. The carrier provided with a work-receiving throat and with an extended attaching-shank, combined with a clamp adapted to engage with said shank to hold the carrier firmly in place, and a bench-dog having its members pivoted to said carrier on opposite sides of the throat thereof, as and for the purposes described.

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

ELI ZIMERMAN.

Witnesses:

HARRISON K. COLE,  
C. W. CLARE.