

(No Model.)

2 Sheets—Sheet 1.

O. R. JOHNSON.
WORK HOLDER.

No. 588,439.

Patented Aug. 17, 1897.

FIG. 1.

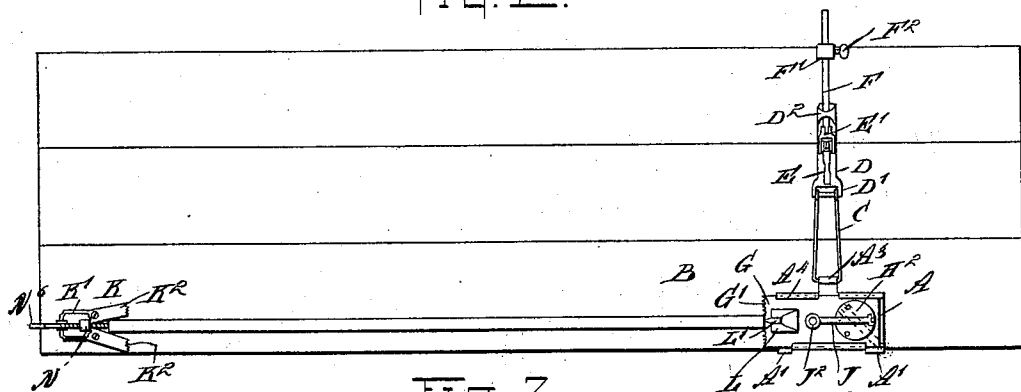


FIG. 2.

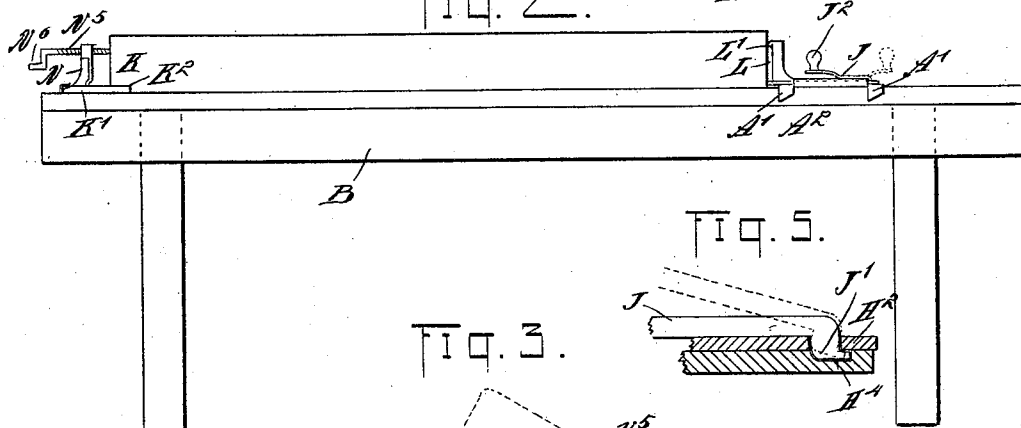


FIG. 5.

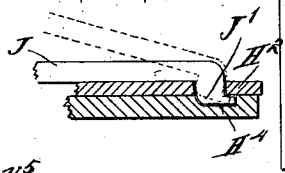
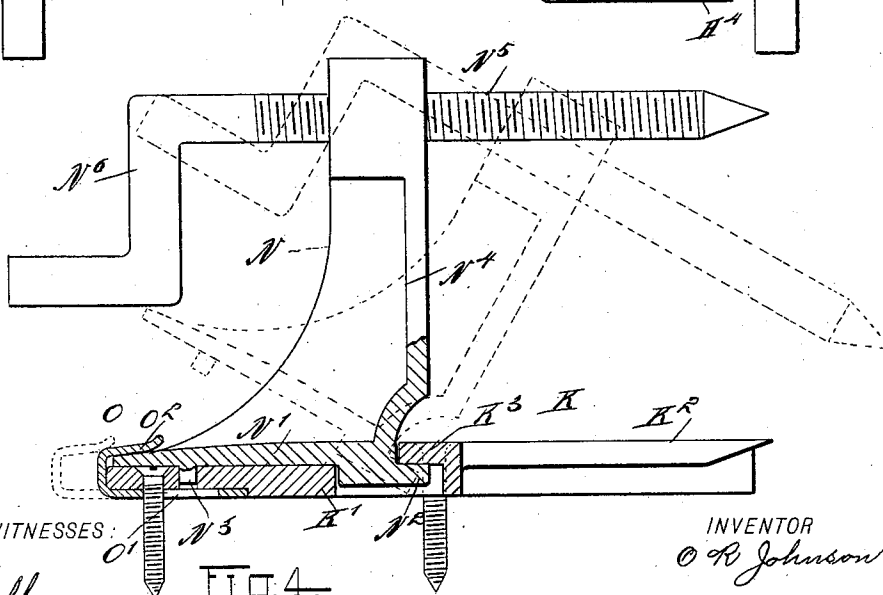
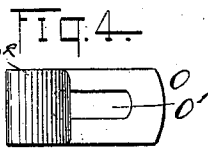


FIG. 3.



WITNESSES:

H. Kelly
R. J. Johnson



INVENTOR

O. R. Johnson

BY

M. J. Johnson
ATTORNEYS.

(No Model.)

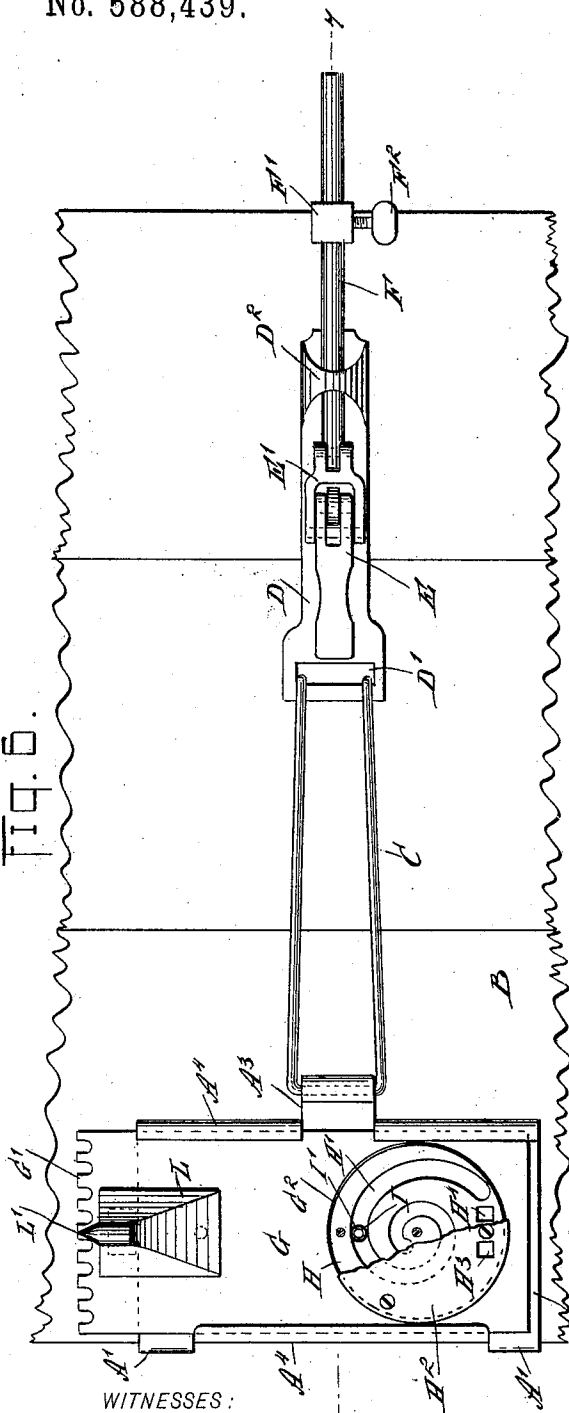
2 Sheets—Sheet 2.

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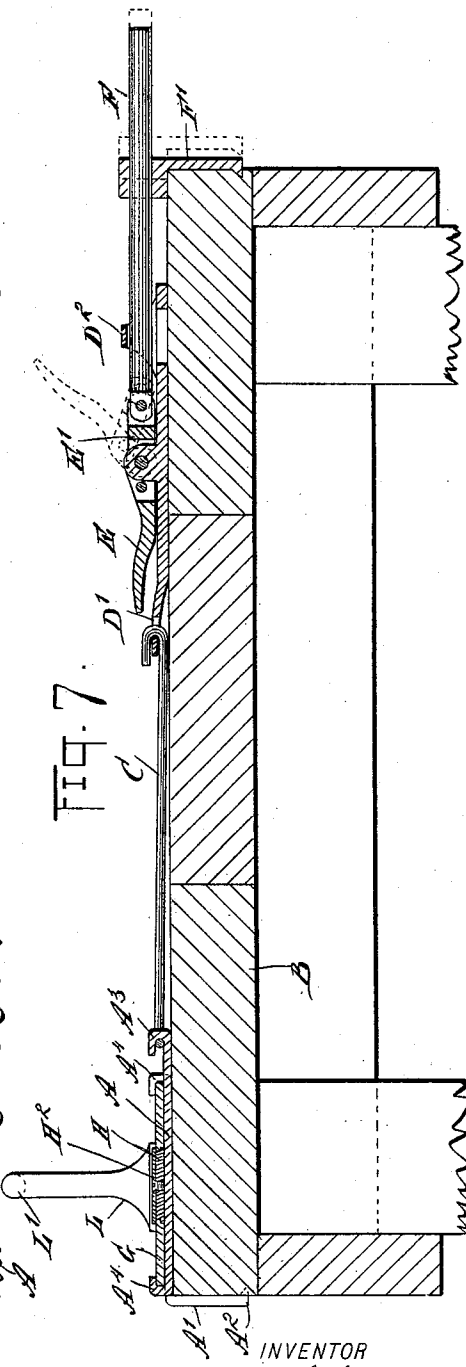
Patented Aug. 17, 1897.

FIG. 6.



WITNESSES:
H. Kelly
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FIG. 7.



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UNITED STATES PATENT OFFICE.

OLOF R. JOHNSON, OF ESCANABA, MICHIGAN.

WORK-HOLDER.

SPECIFICATION forming part of Letters Patent No. 588,439, dated August 17, 1897.

Application filed March 9, 1897. Serial No. 626,601. (No model.)

To all whom it may concern:

Be it known that I, OLOF R. JOHNSON, of Escanaba, in the county of Delta and State of Michigan, have invented a new and Improved Work-Holder, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved work-holder or bench-clamp more especially designed for the use of carpenters and other mechanics and arranged to securely hold the work in place to permit the operator to conveniently place the device in position on the bench or board or other support to form a temporary bench for conveniently doing small jobs in houses and other places.

The invention consists principally of a bit-plate, a dog fitted to slide thereon, and a disk mounted to turn in an opening in the said dog and formed with a spiral groove engaged by a lug or pin held on the said bit-plate.

The invention further consists of a device for securely fastening the bit-plate in position on the bench, board, or like support.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged sectional side elevation of the end dog. Fig. 4 is a plan view of a keeper for the same. Fig. 5 is an enlarged sectional side elevation of the device for moving the dog in the bit-plate. Fig. 6 is an enlarged plan view of the improvement with parts broken out, and Fig. 7 is a cross-section of the same on the line 7 7 of Fig. 6.

The improved device is provided with a bit-plate A, adapted to rest on the top of a bench, board, or other support B, and on the edge of the plate A are formed downwardly-extending lugs A', formed with an inclined row of transversely-extending teeth A², adapted to engage the side edge of the bench B, so as to securely hold the bit-plate against longitudinal movement. On the rear edge of the bit-plate A is formed a hook A³,

adapted to be engaged by an open link C, extending transversely over the bench B and fitted to connect with an eye D' of a plate D, on which is fulcrumed a lever E, pivotally connected by a link E' with a rod F, fitted to slide transversely in a bearing D², formed in the said plate D. On the rod F is held adjustably a dog F', adapted to engage the rear edge of the bench B, as plainly shown in Figs. 6 and 7, the said dog being secured in place on the rod F by a set-screw F².

Now it will be seen that when it is desired to fasten the bit-plate A in position the same is placed on top of the bench B, with the lugs A' resting against the edge of the bench. The dog F' is now adjusted on the rod F, according to the width of the bench, with the lever E in a rearmost position, as indicated in dotted lines in Fig. 7. The operator now takes hold of the lever E and swings the same forward, so as to draw the rod F and with it the dog F' inwardly, to move the dog securely in contact with the rear edge of the bench B. By this movement the bit-plate A is pulled firmly in position and securely locked on the bench B by the lugs A' and the dog F'.

In case the bench B is only in the form of a board or is very narrow the link C can be dispensed with and the eye D' is then directly hooked to the hook A³.

On the top of the bit-plate A and on opposite sides thereof are formed longitudinally-extending guideways A⁴ for the dog G to slide in, the said dog being formed at its outer end with teeth or points G', adapted to engage the work at one end. In the body of the dog G is formed a circular opening G², into which fits a disk H, so as to permit of turning the said disk, the latter being formed with a spiral groove H', engaged by a friction-roller I', held on a stud or pin extending upwardly from the bit-plate A. (See Fig. 6.)

On the disk H is secured by set-screws or other means a cover H², formed at its rear end with apertures H³, registering with recesses H⁴, formed in the top of the disk H, extending slightly beyond the rear ends of the openings H³ to permit the entrance of the foot J' of the forked end of a lever J, resting on the top of the cover H² and formed with a handle J², to permit the operator to conveniently turn the cover on the disk H, so as to cause

a forward or backward movement of the dog G, owing to the friction-roller I' engaging the spiral groove II' in the said disk II. Thus by the arrangement described the operator
 5 can conveniently move the dog G forward or backward, so as to engage or disengage the teeth G' with or from the work. When the work is engaged by the teeth G', the operator can conveniently remove the lever or
 10 handle J, so as to permit of giving free access to the end of the work engaged by the teeth G'.

The outer end of the work is adapted to be engaged by a dog K, formed with a body K', screwed or otherwise fastened to the bench
 15 B and formed with two forwardly-extending toothed prongs K² for the work to rest against.

When it is desired to operate on boards placed on edge, as indicated in Figs. 1 and 2, then I employ dogs L and N, of which the
 20 dog L is held removably on the dog G and is formed with a standard carrying a pin L', engaging the end of the board. The dog N is removably held in the dog K and is provided with a base N', having a lip N², adapted to engage a shoulder K³ on the body K' of the dog K, and the base N' is provided with
 25 a pin N³, adapted to engage a recess in the said body. From the base N' rises a standard N⁴, in the upper end of which screws the longitudinally-extending screw-rod N⁵, pointed at its forward end to engage the end of the work directly opposite the point L'. The screw-rod N⁵ is formed at its rear end with a
 30 suitable handle or crank-arm N⁶ to permit the operator to conveniently turn the screw-rod to move its point in and out of engagement with the work. A keeper O, bent in a U-shaped form, fits with its bottom part into a recess in the body K' and is held in position
 40 thereon by one of the screws used for fastening the body to the bench, the screw passing through an elongated aperture O' in the keeper. The upwardly-turned end O² of the keeper passes over the rear end of the base N', so as to prevent the latter from accidental disengagement from the body K'. The base of the dog L is provided with a lip
 45 and pin similar to the lip N² and pin N³ of the dog N, as previously described, and engaging corresponding shoulders and recesses in the dog G. It will be seen that the auxiliary dogs L and N are very serviceable for
 50 conveniently holding boards upon edge and for holding work in an inclined position, it being understood that in this case the work can be engaged by the points of the dogs L and N, as well as by the dogs G and K.

If the work to be operated on is to be turned, it can be readily fastened on the point L' and
 60 the point of the screw-rod N⁵ and turned thereon as centers.

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

65 1. A bench-dog, comprising a plate having one end toothed and a hole in the body thereof giving access to a forwardly-extending re-

cess, a standard having a lip adapted to enter said hole and engaging the under side of the plate and having a pointed dog or center, and
 70 a longitudinally-adjustable bent plate forming a yoke to engage the rear edge of the standard-base to hold it down, substantially as specified.

2. A bench-dog, comprising a plate having
 75 one end toothed, a hole in the body thereof communicating with a forwardly-extending recess and a longitudinal recess opening to its rear end, a standard having a longitudinally-extending point or center, a base provided
 80 with a forwardly-extending lip adapted to enter said hole and engaging the under side of the plate, and a bar lying longitudinally in the rear recess beneath the plate and having its outer or rear ends bent upward and forward
 85 to engage the rear edge of the standard-base, substantially as described.

3. A bench-dog, comprising a plate having one end toothed, a hole in the body thereof communicating with a forwardly-extending
 90 recess and a longitudinal recess opening at its rear end, a standard having a longitudinally-extending point or center, a base provided with a forwardly-extending lip adapted to enter said hole and engaging the under
 95 side of the plate, a bar lying longitudinally in the rear recess beneath the plate and having its outer or rear ends bent upward and forward to engage the rear edge of the standard-base, said base and plate having registering
 100 projections and recesses preventing sliding therebetween, substantially as described.

4. A bench-dog, comprising a plate having the end portions of the outer side edge bent
 105 forward and provided with inwardly-extending points and having the remainder of the same edge and portions of the opposite edge bent upward and inward forming a guideway, a dog-plate sliding therein, an adjustable lever
 110 connecting said two plates, and clamping means of adjustable length connected to the inner side of the bottom plate and engaging the opposite side of the bench or board, substantially as described.
 115

5. A device of the class described, provided with a fixed dog, a longitudinally-movable dog, and two removable dogs held on the said
 120 fixed and the said movable dog, substantially as shown and described.

6. A device of the class described, provided with a fixed dog, a longitudinally-movable dog, and two removable dogs held on the said
 125 fixed and the said movable dog, the said removable dogs being provided with alined points, substantially as shown and described.

7. A device of the class described, provided with a fixed dog, and a dog held removably thereon, formed with a standard, and a screw-rod mounted to turn in the said standard,
 130 substantially as shown and described.

8. A bench-dog, comprising a plate having the end portions of the outer side edge bent downward and provided with inwardly-ex-

tending points and having the remainder of the same edge and portions of the opposite edge bent upward and inward forming a guideway, a dog-plate sliding therein having a circular hole, a circular plate fitting said hole and having a spiral cam-groove therein, a pin or roller attached to the lower plate and entering said spiral cam or groove, an operating-lever connected to said circular plate, and clamping means of adjustable length connected to the inner edge of the bottom plate and engaging the opposite side of a bench or board, substantially as described.

9. A bench-dog, comprising a plate which is forked at one end and has these ends

notched, a standard removably secured to said plate and provided with a center which is above and in line with the center of the notch in said plate, substantially as described.

10. A bench-dog, comprising a plate which is forked and has the ends of said forks notched, a removable standard secured to said plate, and a screw-threaded bar supported in said standard above and in line with the notch in said plate and having its end pointed to act as a center, substantially as described.

OLOF R. JOHNSON.

Witnesses:

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CLARA HAMACHER.