144. WOOD-WORKING.
Work Benches,
Adjustable Stock Rests.

287

Examiner.

No. 866,678. PATENTED SEPT. 24, 1907.

O. PEARSON.

WORK HOLDING MEANS.

APPLICATION FILED AUG. 26, 1905.

2 SHEETS—SHEET 1.

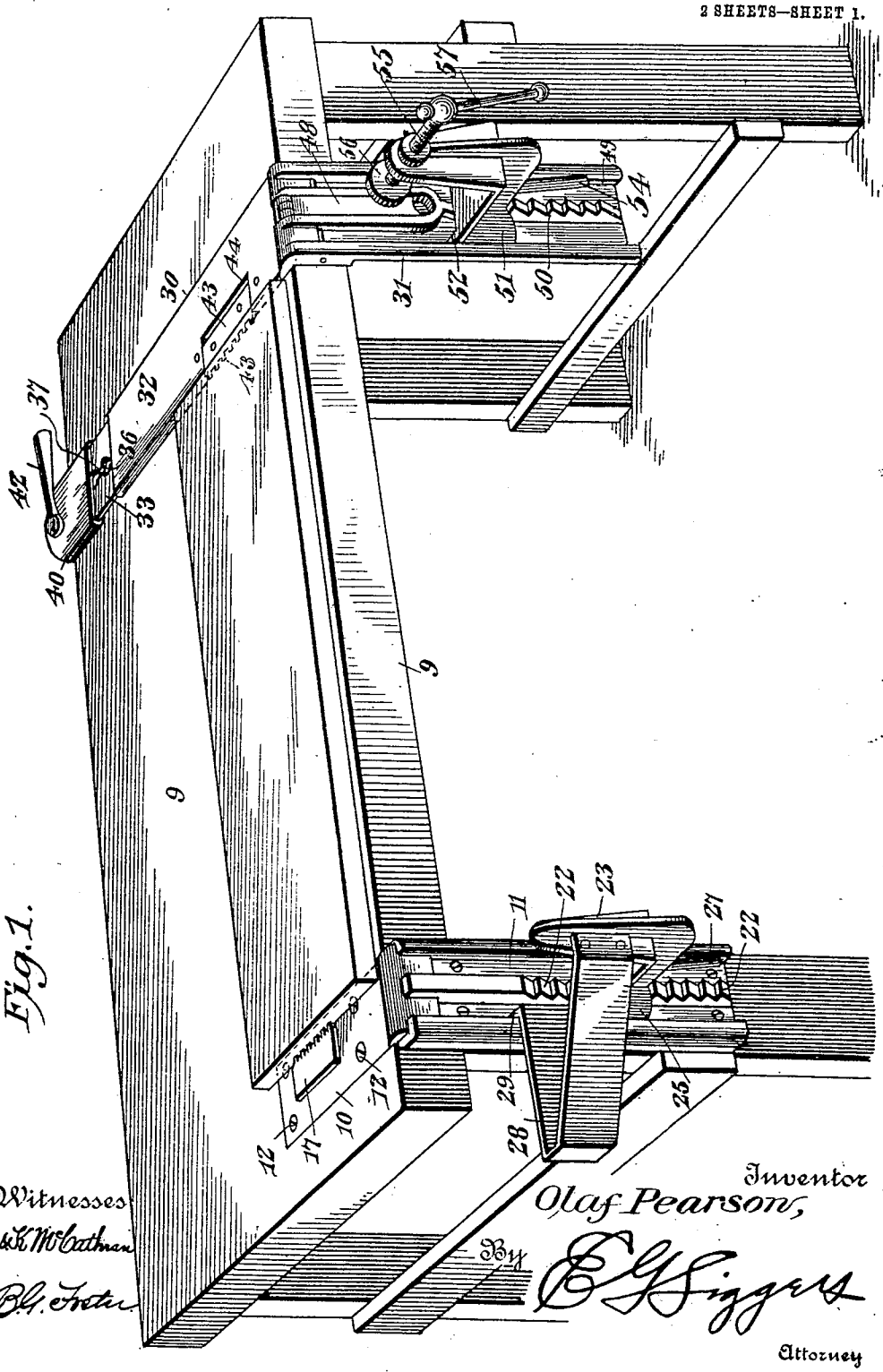


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 2.

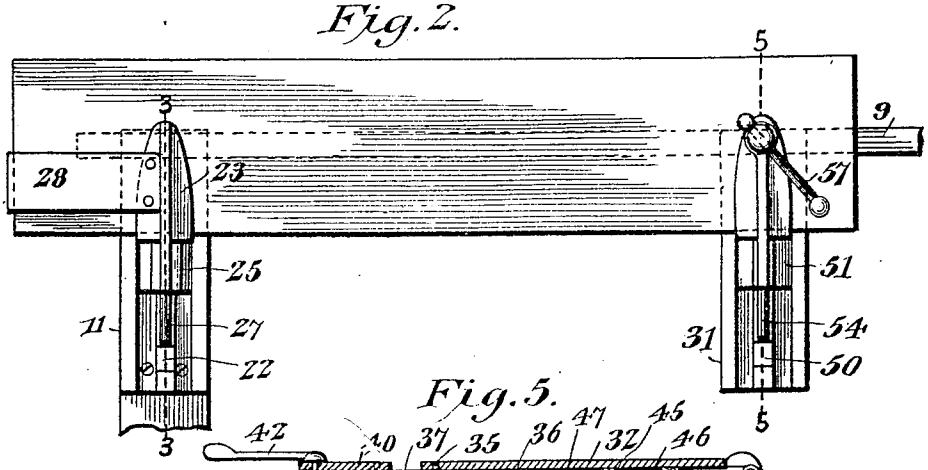


Fig. 5.

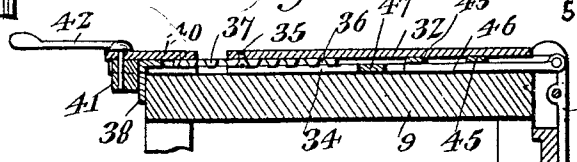


Fig. 3.

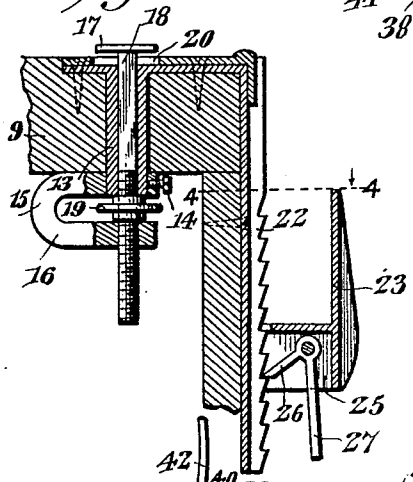
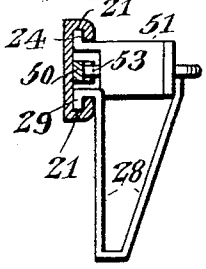


Fig. 4.



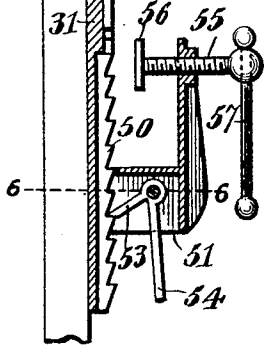


Fig. 7.

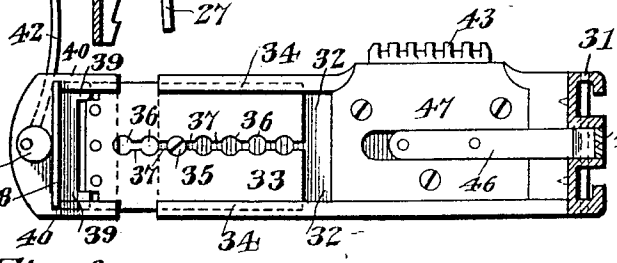


Fig. 6.

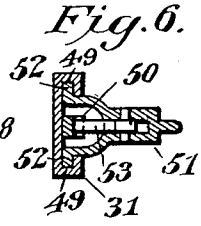
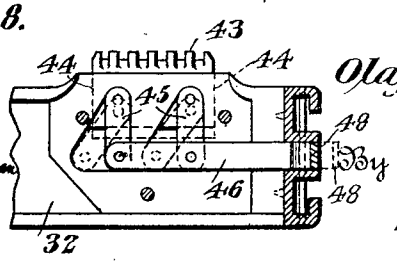


Fig. 8.



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WORK-HOLDING MEANS.

No. 866,678. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed August 26, 1905. Serial No. 275,939.

To all whom it may concern:

Be it known that I, OLAF PEARSON, a citizen of the United States, residing at Metropolitan, in the county of Dickinson and State of Michigan, have invented a new and useful Work-Holding Means, of which the following is a specification.

This invention relates to means for holding work, such as boards, and the like, when being dressed or otherwise worked.

The principal object is to provide simple and effective coöperating means which can be readily applied to ordinary work benches, is adjustable to different sizes of the same, and will efficiently hold a board or similar work either upon its side or edge, said means being readily adjustable to boards of different lengths and widths.

The embodiment of the invention that is at present considered preferable is illustrated in the accompanying drawings, wherein:

Figure 1 is a perspective view of a work bench showing the holding means mounted thereon and securing a board with one of its side faces in position to be worked. Fig. 2 is a side elevation of the bench and holding means with the board secured on edge. Fig. 3 is a sectional view on the line 3—3 of Fig. 2. Fig. 4 is a detail horizontal sectional view on the line 4—4 of Fig. 3. Fig. 5 is a vertical sectional view on the line 5—5 of Fig. 2. Fig. 6 is a detail cross sectional view on the line 6—6 of Fig. 5. Fig. 7 is a bottom plan view of the horizontal plate of the adjustable support. Fig. 8 is a similar view of a portion of the same with the retaining plate for the bench dog removed.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

Two coöperating mechanisms are illustrated in the accompanying drawings, the same being mounted upon a work bench including a top 9, said bench being of any desirable construction and proportions. A support is employed, comprising a horizontal plate 10, and a substantially vertical plate 11, the former being set into the top 9 at one end, so that its upper face is substantially flush therewith and secured by suitable fasteners 12. The plate 10 carries a tubular guide 13 that passes through the top 9 and has secured to its lower end by means of a set screw 14, a yoke 15, having horizontally disposed arms 16. A bench dog 17 is provided with a stem 18, that slidably passes through the guide 13 and the arms of the yoke, the lower portion of said stem being threaded. An operating nut 19, located between the arms of the yoke 15, has a threaded engagement with the lower end of the stem, and consequently, when said nut is turned, the dog can be elevated or lowered, the plate 10 being preferably, though not necessarily, formed of sections and having a seat 20, to receive the dog.

The vertical plate 11 has its margins inturned, forming guideways 21, and between these guideways is located a longitudinal rack 22. A work holder is slidably and detachably associated with this plate and is in the form of an upstanding hook member 23, having outstanding flanges 24, that are slidable in the guideways 21. In the lower portion of this hook member is formed a pocket 25, in which is pivotally mounted a dog 26, that engages the teeth of the rack, said dog having a handle 27, depending below the member, as clearly illustrated in Fig. 3 and constituting means for moving the dog into engagement with the rack. A clamping device in the form of a horizontally disposed tapering stirrup 28, has its outer end secured to the outstanding portion of the hook 23, its other end being formed into a retaining hook 29, that slidably engages in one of the guideways.

Coöperating with the above described fixed support and the mechanism associated therewith is another adjustable support, including an extensible plate 30, and a substantially vertical plate 31. The plate 30 consists of slidably associated sections 32 and 33, the section 33 sliding in guides 34, formed upon the under side of the section 32, the two sections being normally held against relative movement and in different positions by means of a screw 35, the head of which engages in any of a plurality of sockets 36, formed in the section 33, said sockets being connected by a slot 3^7 of sufficient width to permit the passage of the shank of the screw 35. The plate 31 is arranged to engage over one edge of the bench top 9, as shown in Fig. 1, and forms, in effect, one element of a clamp, the other element comprising a depending portion 38, which, as shown in Fig. 7, has an offset upper end 39, slidably mounted in a head 40, carried by the section 33 of the horizontal plate, the clamp element 38 being moved toward the plate 31 by a cam 41, journaled upon the head 40 and having a handle 42.

The section 32 of the horizontal plate 30 carries a slidably mounted horizontally movable bench dog 43, located in a seat 44, made for the purpose, and connected by links 45, with a longitudinally slidable bar 46, guided in a retaining plate 47, that is secured to the under side of the section 32. This bar 46 is movable transversely of the line of movement of the dog 43, and its outer end is pivoted to the upper arm of an actuating lever 48, pivoted between its ends, as shown in Fig. 5, to the upright plate 31 of the support. The said upright plate 31 is a substantial duplicate of the upright plate 11 of the first described support, that is to say, it is provided with guideways 49 between which is located a rack 50. Another work holder in the form of an upstanding hook member 51 has outstanding flanges 52, that slide in the guideways, said supporting member being detachable. A dog 53 is pivoted upon the member 51 and engages the rack, said dog having an exposed handle 54. Threaded

into the upper end of the upstanding bill of the hook member 51 is a clamping device comprising a shank 55, having a head 56 at its inner end and an operating handle 57 slidably mounted in its outer end.

The operation of the mechanism may be briefly described as follows: If one side of a board is to be dressed or otherwise worked, the bench dog 17 is elevated a suitable distance by turning the nut 19, and the board is placed against said dog, as illustrated in Fig. 1. The adjustable support 30 is then released and moved along the bench top until the dog 43, which is in its retracted position, is abutted against the opposite end of the board. The cam 41 is then turned to cause the plate 38 to clamp against the bench dog, thus securely holding the adjustable support in place. Then by swinging the actuating lever 48, the dog 43 may be projected toward the dog 17, and thus the board is securely clamped against movement. When the board is being worked in this manner, the work holders 23 and 51 may be removed, if desired. On the other hand, if the board is to be held on edge, it is placed in said hook members which can be elevated to the proper height and locked by their respective dogs 26 and 53. The stirrup 28 constitutes a stop or abutment as well as a clamp which will receive boards of different thicknesses and will prevent their longitudinal sliding movement as well as their lateral play, while the clamp 55 will, in like manner, secure the board in the work holder 51. A board so held is illustrated in Fig. 2.

It will be apparent by reference to Fig. 1, that the mechanism is readily applicable to any ordinary work bench, the fixed support being securely fastened in place by screws or other devices and the adjustable support being extensible by means of the sliding sections 32 and 33, so that it may be applied to tops of different widths. Furthermore, the structure will securely hold boards of different lengths and widths either upon their sides or upon their edges.

From the foregoing it is thought that the construction, operation, and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be apparent that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In work-holding means of the character described, the combination with a support comprising a horizontally disposed plate arranged to be secured upon a bench top, and a depending plate carried by the horizontally disposed plate and arranged to be located at one side of such bench, of an upright rack carried by the depending plate, a vertically movable supporting hook slidably mounted on the depending plate and having an outer upstanding bill, a dog carried by the under portion of the hook and coacting with the rack, and work clamping means carried by the bill and adjustable with the hook.

2. In work holding means of the character described, the combination with a support comprising a horizontally disposed plate arranged to be secured upon a bench top, and a depending plate carried by the horizontally disposed plate and arranged to be located at one side of such bench, of an upright rack carried by the depending plate, a vertically movable supporting hook slidably mounted on the depending plate and having an outer upstanding bill, a dog carried by the under portion of the hook and coacting with the rack, and an oppositely tapered work holding clamp carried by the bill, and projecting in a substantially horizontal direction from one side of the same and in line with the space between the bill and the depending plate.

3. In work holding means of the character described, the combination with a support comprising a horizontally disposed plate arranged to be secured upon a bench top, and a depending plate carried by the horizontally disposed plate and arranged to be located at one side of such bench, of an upright rack carried by the depending plate, a vertically movable supporting hook slidably mounted on the depending plate and having an outer upstanding bill, a dog carried by the under portion of the hook and coacting with the rack, and a screw clamp threaded through the bill and operating across the space between the same and the depending plate to engage and clamp an article placed in said space.

4. In work-holding means of the character described, the combination with spaced upright supports, of means for securing the same in upright positions at one side of a bench, work holders comprising hook members slidably mounted on the supports, means for holding the hook members in different vertical positions, a tapering clamp carried by one of the hook members and offset at one side of the same, and a screw clamp carried by the other hook member.

5. In work-holding means of the character described, the combination with an upright supporting plate having guideways and a rack between them, of means for fixedly securing the plate to a bench at one side of the same, an upstanding hook member slidably mounted on the plate, an offset tapering clamp carried by the hook member, a dog pivoted upon the hook member and engaging the rack of the support, another supporting plate, means for adjustably mounting the plate at one side of a work bench and permitting its movement to and from the fixed plate, said adjustable plate having guideways and a rack, a vertically adjustable hook member slidably mounted in the guideways, a dog pivoted upon the hook member and engaging the rack, and a screw clamp threaded through the hook member.

6. In work-holding means of the character described, the combination with a support having a guideway, of a work holder movably mounted on the support and having a portion spaced therefrom, and a work abutment having an outer portion fixed to the said portion of the holder and an inner portion slidably engaged in the guideway, said abutment extending across the space between the support and work holder.

7. In work-holding means of the character described, the combination with a support having a guideway, of a work holder having a portion movably mounted in the guideway and including an upstanding hook member, and a tapering work abutment and clamp having its outer portion secured to the upstanding hook member and its inner portion slidably engaged in the guideway.

8. In work-holding means of the character described, the combination with an extensible device arranged to be placed across a work bench, of depending portions carried by the extensible device and being arranged to engage the opposite edges of said bench, means for effecting the relative movements of the depending portions towards each other to clamp the same upon the bench, one of said portions constituting an upright support, a work holder vertically adjustable on said support, and a bench dog mounted on the device.

9. In work-holding means of the character described, the combination with a support comprising angularly disposed plates, one of which is arranged to be placed transversely upon a work bench with the other depending over the front edge thereof, of a depending clamp movably mounted on the rear portion of the transverse plate, the depending plate having a guideway, a work holder movably mounted in the guideway, and a bench dog mounted on the transverse plate.

10. In work-holding means of the character described, a support comprising a sectional plate having overlapped portions, means connecting the overlapped portions for rigidly securing the same in any of a plurality of positions

against movement, a depending clamp element carried by the outer end of one of the plate sections, a depending clamp element slidably mounted on the outer end of the other plate section, means mounted on said latter section and engaging the clamp element to effect its sliding movement, and a work-holding device mounted on the support.

11. In work-holding means of the character described, a support comprising a sectional plate having overlapped portions, one of said portions having openings, a screw threaded into the other portion and arranged to be placed in any of the openings, a depending clamp element carried by the outer end of one of the plate sections, a depending clamp element slidably mounted on the outer end of the other plate section, a cam journaled in rear of said sliding clamp element and engaging the same to effect its sliding movement toward the first mentioned clamp element, and a work-holding device mounted on the support.

12. In work-holding means of the character described, the combination with supports, each comprising a horizontal and a vertical plate, of means for securing the same to a work bench, a vertically adjustable bench dog carried by the horizontal plate of one of the supports, a horizontally movable bench dog carried by the horizontal plate of the other support, means for securing the latter plate in different positions upon a work bench, means for moving the horizontally movable dog, detachable and vertically adjustable work supports slidably mounted on the vertical plates and comprising upwardly extending hook members, forming work-receiving seats, and clamping means carried by the work supports.

13. In work-holding means of the character described, the combination with a support comprising a vertical and a horizontal plate, said horizontal plate having a tubular guide, a vertically adjustable bench dog having a stem slidably mounted in the guide, a yoke carried by the guide, an adjusting nut located in the yoke and engaging the stem of the dog, the vertical plate being provided with guides and a rack disposed between the same, a vertically adjustable work-supporting hook member slidably mounted in the guides and having a substantially horizontal, tapering work clamp, a dog carried by the member and engaging the rack, another support comprising a vertical and a horizontal plate, said horizontal plate being extensible, a clamp member mounted on the horizontal plate, a cam for moving the clamp member, a horizontally movable dog mounted on the horizontal plate, means for effecting the horizontal movement of the dog, a vertical plate having guideways and a rack, a vertically adjustable work-supporting hook member slidably mounted in the guideways, a dog pivoted upon the member and engaging the rack, and a screw clamp threaded in the member.

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

OLAF PEARSON.

Witnesses:
STANLEY M. MATTHEWS,
MAE FITZPATRICK.