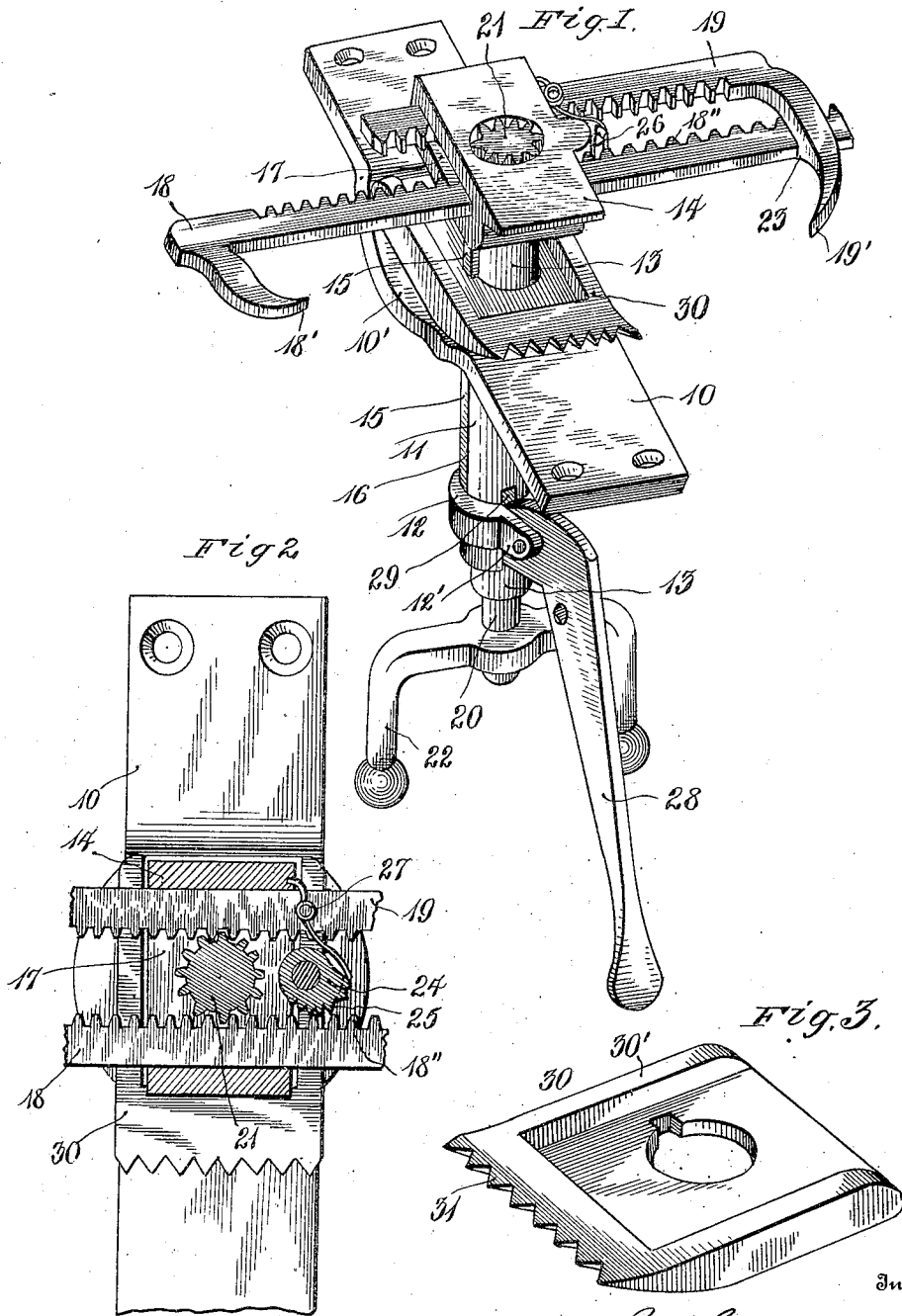


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BENCH CLAMP.

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UNITED STATES PATENT OFFICE.

ISAAC SOLBERG, OF STAMFORD, SOUTH DAKOTA.

BENCH-CLAMP.

No. 909,469.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ISAAC SOLBERG, a citizen of the United States, residing at Stamford, in the county of Stanley and State of South Dakota, have invented certain new and useful Improvements in Bench-Clamps, of which the following is a specification.

This invention relates to that class of devices used by bench workmen, such as carpenters, for the purpose of holding work while being operated upon.

More particularly this invention pertains to a bench clamp or dog which, while being simple in construction and operation, is most effective for holding the board or piece of timber while being dressed, and furthermore which is not likely to become out of order.

For a full understanding of the invention, including its construction and characteristic advantages, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a general perspective view of the invention; Fig. 2 is a partial plan of the jaw arms and cooperating parts, the head being in section, and Fig. 3 is a detail of the auxiliary jaw.

Throughout the following description and in the several figures of the drawings similar parts are referred to by corresponding reference characters.

The invention in its practical embodiment comprises a socket piece 10 which is designed to be located permanently in the top of the bench, and is provided with a depression 10' intermediate of its ends. The upper surface of the socket member lies flush with the surface of the bench. Extending downward from the depressed portion 10' and extending below the top of the bench is a split sleeve 11, made preferably integral with the said socket member at its upper end. At or near the lower end of the said sleeve is arranged a collar 12 provided with ears 12' for a purpose which will presently appear.

The dog proper consists of a shank 13 which projects downwardly through the socket member and sleeve aforesaid, and is provided at its upper end with a head 14. The shank is provided with a feather or rib 15 which operates within a slot 16 of the aforesaid sleeve, whereby the shank is guided in its vertical movement but prevented from rotation within the sleeve. The

head 14 is of peculiar construction, being provided with a transverse slot 17 extending therethrough and within which operate the arms or two gripping jaws. One of the jaws 18 having a point 18' is provided with rack teeth 18'' at its outer edge, and the other jaw 19 having a point 19' is provided with teeth on its inner margin, the rack teeth of the two jaws projecting toward each other and in the same plane. The head 14 furthermore is provided with a vertical hole within and through which extends an operating rod or shaft 20 having at its upper end a pinion 21 which meshes with the rack teeth in the aforesaid jaws. The said shaft 20 extends downwardly through the shank 13, and is provided at its lower end with any suitable operating means, such as a crank 22 whereby the shaft 20 may be rotated in either direction for the purpose of causing the points of the jaws to approach or separate. The jaw 19 is provided with a projection 23 which serves as a guide for the bar of the jaw 18. The head 14 may be provided if desired with a pawl 24 having teeth 25, and so pivoted that it may be moved into engaging relation with the teeth of one of the racks, such as indicated at 18'' for the purpose of preventing displacement of the jaws when once set. The pawl is provided preferably with a finger piece 26 whereby it may be operated. A spring 27 may be employed if desired to cause the pawl to move in one direction, as in a position to lock the racks, and in order to release the same the operator may draw the same against the tension of the spring.

The work holding dog may be lifted to any desired elevation and there clamped by any suitable means. The means herein shown consists of a cam-shaped locking lever 28, pivoted between the aforesaid ears. The cam portion of this lever is adapted to bear frictionally against the shank 13 through a slot 29 in the sleeve, and whereby the dog through its shank will be held in adjusted position. After adjustment of the dog as to elevation, the board or other piece of work will be put in position and thereafter the jaws are caused to approach each other by means of rotation of the shaft 20 and whereby the jaws 18 and 19 will positively embrace the said work holding it against the head 14. When not in use the head 14 may be dropped within the depression 10' of the socket piece, or if desired

may be withdrawn and placed elsewhere out of the way. The bars of the jaws may be made of any desired length, dependent upon the work to be done, or jaws of different lengths may be provided and which
5 may be interchanged if desired.

In order to adapt the present invention for the purpose of holding a plank or piece of work on edge while jointing it an additional jaw 30 is desirable. This member
10 consists, generally speaking, of a flat plate having a hole therethrough through which the shank 13 and its rib may pass, and provided further with lateral parallel flanges
15 and a front serrated gripping edge 31. The teeth of this edge 31 extend slightly upward from the general horizontal plane of the member 30 and whereby the lower edge of the work will be securely held from lateral
20 movement in connection with the grip of the aforesaid jaws. It will be understood that the auxiliary jaw 30 will be prevented from rotation by means of the rib 15 and also by cooperation of the flanges 30' with the lateral
25 edges of the head 14.

It will be understood that the device may be made of any suitable dimensions and materials, and that the details of construction may be varied to a great extent without departing from the spirit of the invention as
30 hereinafter claimed.

From Fig. 1 it will be noted that the shaft 20 extends sufficiently far below the lower end of the sleeve 13 as to allow vertical
35 sliding movement of the shaft with the pinion 21 connected thereto. By thus lifting the pinion 21 out of engagement with the racks of the jaws 18 and 19, the jaws may be moved freely in the slot 17 for the
40 purpose of quick adjustment, as for instance when setting the device for a narrow board after it has been used for a broad one, or the reverse. After such preliminary adjustment, the pinion will be reengaged with
45 the racks for the purpose of final adjustment as before described.

Having thus described the invention, what is claimed as new, is:

1. The hereindescribed bench clamp comprising, in combination, a socket member

provided with a downwardly projecting sleeve having a groove; a dog comprising a transversely slotted head and a downwardly projecting shank having a rib cooperating with the aforesaid groove, a pair of jaws
55 operating transversely in the aforesaid slot of the head, and means operating through the aforesaid shank for causing said jaws to embrace the work.

2. In a bench clamp, the combination of a
60 socket member having a downwardly projecting sleeve, a dog comprising a head and a hollow shank projecting downwardly through the aforesaid sleeve, means whereby the dog may be prevented from longitudinal or rotary movement within said sleeve,
65 a pair of jaws operating in the same horizontal plane through said head, and means including a rotary shaft for causing the jaws to approach each other or separate.
70

3. In a bench clamp, the combination of a main support having a downwardly depending sleeve, a dog including a head having a transverse slot and a downwardly projecting shank projecting through the sleeve
75 aforesaid, a pair of jaws operating through the head slot, each of the jaws having rack teeth, a vertical operating shaft extending through the aforesaid shank, a pinion at the upper end of said shaft meshing with
80 the aforesaid racks, means for turning the shaft, and means for locking the jaws in set position.

4. In a bench clamp, the combination of a socket member, a dog having a head and a
85 shank extending through said socket member, a pair of jaws cooperating with said head, means extending through said shank and cooperating with said jaws to move the latter, and an auxiliary jaw located between
90 the aforesaid head and the socket member and provided with a gripping edge, for the purposes set forth.

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

ISAAC SOLBERG.

Witnesses:

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