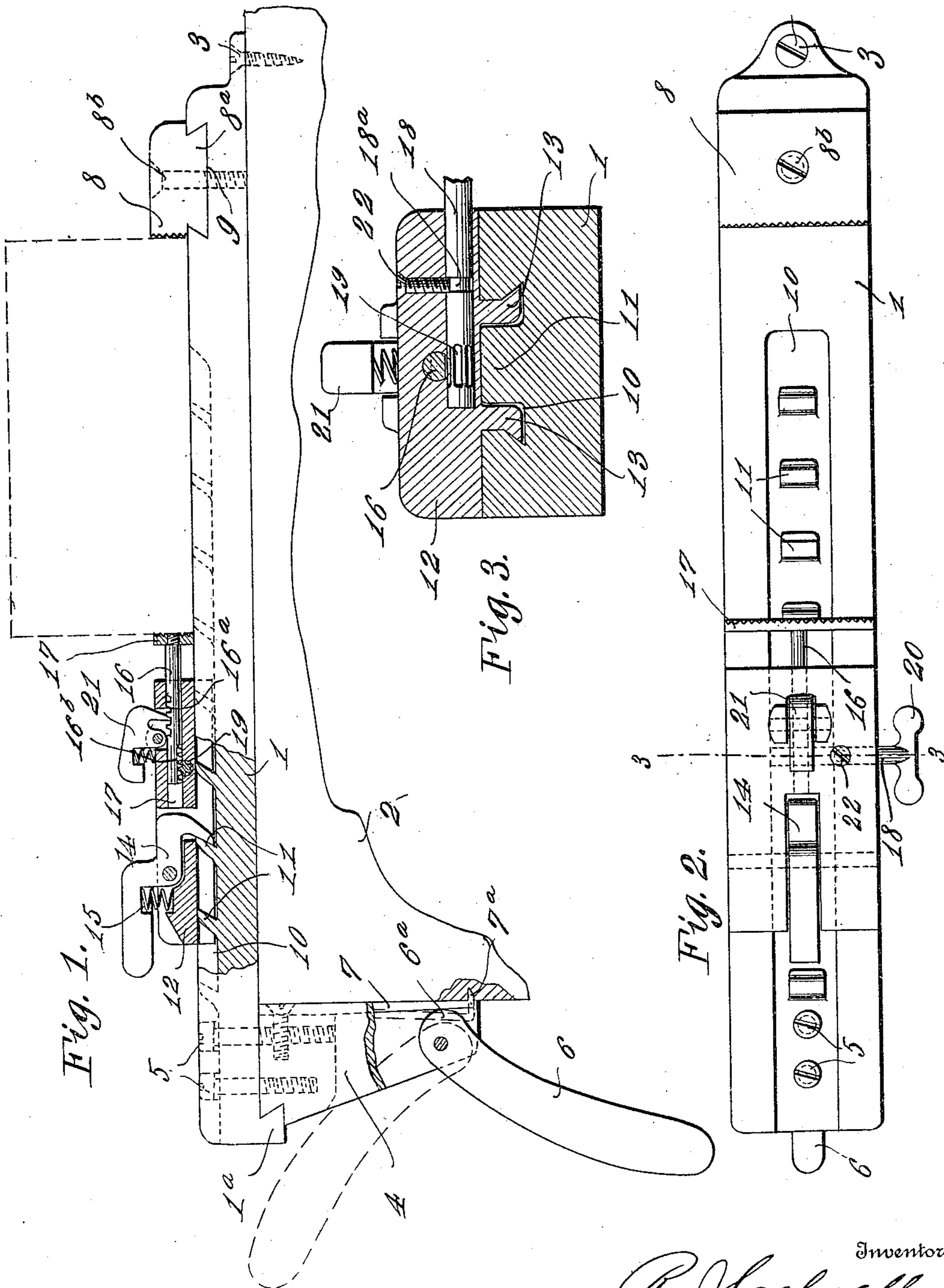


R. J. COLWELL.
BENCH CLAMP.

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945,914.



Witnesses

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ROBERT J. COLWELL, OF BRADDOCK, PENNSYLVANIA.

BENCH-CLAMP.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT J. COLWELL, a citizen of the United States, residing at Braddock, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Bench-Clamps, of which the following is a specification.

The primary object of this invention is to provide a simple but substantial form of clamp for work benches.

The invention resides mainly in the general construction of the clamp and securing means therefor, whereby the device may be readily attached and removed from benches, and in a peculiar clamping mechanism employed to clamp the work in position, said mechanism being particularly desirable for reasons which will appear more fully hereinafter.

For a full understanding of the invention, reference is to be had to the following detail description and to the accompanying drawings, in which—

Figure 1 is a view in elevation and partly in section, showing the invention as when applied to a support such as a bench; Fig. 2 is a top plan view of the clamp device alone, and Fig. 3 is a transverse section taken about on the line 3—3 of Fig. 2 and bringing out clearly the means for adjusting the auxiliary clamp member.

Throughout the following detail description, and on the several figures of the drawings similar parts are referred to by like reference characters.

In carrying out the invention a clamp device constructed in accordance therewith comprises a base 1 which is adapted to be supported upon the bench 2, or other suitable support, and secured thereto by means of a screw or similar fastening 3 at one end of the base, the opposite end of the base being provided with a block 4 detachably secured thereto on its under side by means of fastenings 5. The block 4 has a groove in its upper outer portion receiving an angular flange 1^a projecting downwardly from the outer end of the base 1, and mounted on the block 4 at its lower end is a clamping lever 6 provided with a cam 6^a adapted to engage the inner side of a spring plate 7 attached to the inner side of the block 4, to force the tooth 7^a of the plate into engagement with the support 2.

By the above means the base 1 which car-

ries the clamping mechanism for direct co-operation with the work, is rigidly attached to the support 2 but adapted for quick removal in a manner which will be readily apparent.

A rest 8 having a dove-tail extension 8^a on its lower side, is mounted on the inner end of the base 1, said extension 8^a being received in a transverse dove-tail seat 9 in the upper side of the base. A screw 8^b is employed to secure the rest 8 in position. It may be noted that the rest 8 may be readily detached and a larger rest substituted therefor, or one having a larger bearing surface, and in like manner the block 4 may be removed to permit of applying a larger block to the base 1 in substitution therefor.

The clamping mechanism embodied in the invention is mounted upon the upper side of the base 1, said base being provided in its upper surface, and longitudinally thereof with a dove-tail groove 10 in the central portion of which are located teeth 11 inclining toward the inner end of the base and arranged at intervals. A sliding clamp 12 is mounted on the base and has spaced longitudinal ribs 13 in its under side, said ribs being seated in those portions of the groove 10 on opposite sides of the teeth 11, and the lower portion of the ribs projecting laterally to interlock in the groove 10 in an evident manner. It will be apparent, therefore, that the clamp block 12, though it has interlocking engagement with the base 1, is free to slide on said base, being held in positions of preliminary clamping adjustment by a pivoted dog 14 mounted thereon and held normally in engagement with a selected one of the teeth 11 by means of a spring 15.

The clamp block 12 carries an auxiliary clamping means designed to take up looseness or play between the work and the clamp block 12 after preliminary adjustment of the block 12. The auxiliary clamping means includes an auxiliary clamp member 16 mounted in an opening 17 formed longitudinally in the inner portion of the block 12, said member 16 having teeth 16^a on its upper side and teeth 16^b in its lower side. A clamp plate 17 is carried by the outer end of the clamping member 16, the latter being slidable longitudinally of the block 12. Clamping movement of the member 16, and reverse movement are effected by a small

shaft 18 mounted in a transverse opening in the block 12 and having teeth 19 to engage the teeth 16^b of the member 16. A handle 20 on the outer end of the shaft 18 permits of readily turning the same to move the member 16 in either direction and a locking dog 21 pivoted to the inner portion of the block 12 is adapted to engage the teeth 16^a to lock the member 16 in an adjusted position. Displacement of the shaft 18 is prevented by a screw 22 entering the upper portion of the block and extending at its lower end into an annular groove 18^a of the shaft 18 as shown clearly in Fig. 3.

The facility with which the clamping means comprising the invention may be operated, adjusted, and removed, affords advantages of more than usual merit in relation to devices of this type.

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

1. In a bench clamp, the combination of a base, means for securing the inner end of the base to a support, a detachable block on the outer end of the base and projecting downwardly therefrom, a spring plate secured to said block and having a tooth to engage the support, a cam lever pivoted to the block and having its cam arranged to engage the tooth plate, and clamp mechanism mounted on the base to engage the work.

2. In a bench clamp, the combination of a base, means for securing the inner end of the base to a support, a detachable block on the

outer end of the base and projecting downwardly therefrom, a spring plate secured to said block and having a tooth to engage the support, a cam lever pivoted to the block and having its cam arranged to engage the tooth plate, the base being provided with teeth at intervals longitudinally thereof, a clamp block slidable on the base, a dog mounted on the block to engage the teeth and hold the block at preliminary adjustments, and an auxiliary clamp member carried by the sliding block.

3. In a bench clamp, the combination of a base provided with teeth at intervals on its upper portion, a clamp block interlocking with the base and slidably mounted thereon, means carried by said block for engagement with the teeth to hold the block at a preliminary adjustment, a sliding clamping member carried by the clamp block, means for locking said member in an adjusted position, said sliding member being provided with teeth longitudinally thereof, a shaft having a tooth portion for engagement with the teeth of the clamping member, and means for turning the shaft to operate the clamping member.

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

ROBERT J. COLWELL.

Witnesses:

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