UNITED STATES PATENT OFFICE.

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COMBINED CLAMP AND WRENCH.


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To all whom it may concern:

Be it known that I, PAUL BOCHENEK, a subject of the Emperor of Austria, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Combined Clamp and Wrench, of which the following is a full, clear, and exact description.

10 The object of the invention is to provide a section of an improved combined clamp and wrench arranged for convenient use as a hand clamp, bench clamp, monkey wrench, pipe wrench or like tool. Another object is to permit the user to conveniently hold and manipulate the clamp and wrench. Another object is to construct the tool of comparatively few parts not liable to get easily out of order.

20 With these and other objects in view, the invention consists of certain novel features of construction, as hereinafter shown and described and then specifically pointed out in the claim.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the tool arranged as a bench clamp, parts being shown in section;

Fig. 2 is a similar view of the same with parts in section and arranged as a pipe wrench;

Fig. 3 is a sectional plan view of the same on the line 3-3 of Fig. 1; and

Fig. 4 is a side elevation of a modified form of the bench clamp and wrench.

The shank 10 of the combined clamp and wrench is provided at one end with a fixed jaw 11, and along the inner edge of the shank 10 are arranged gripping teeth 13 adjacent the fixed jaw 11 and rack teeth 12 extending from the end of the gripping teeth 13 to near the end of the shank, as plainly indicated in Figs. 1 and 2. On the shank 10 is mounted to slide lengthwise the bearing 14 of a movable jaw 15 adapted to coact with the fixed jaw 11. An operating screw 16 is journaled on the movable jaw 15 and engages the rack teeth 12 to permit of moving the jaw 15 toward or from the fixed jaw 11 according to the direction in which the operating screw 16 is turned at the time by the user.

One of the jaws is provided with an adjustable cheek 20, for instance, as shown in Fig. 1, this cheek 20 is pivoted at 11 on the movable jaw 15, while, as shown in Fig. 4, the cheek 20 is pivoted at 21 on the fixed jaw 11. The cheek 20 is provided with a socket 22 engaged by a ball 23 formed on one end of a screw 24 screwing in the corresponding jaw 15 or 11, as indicated in Figs. 1 and 4. The screw 24 is provided with a suitable head 25 adapted to be taken hold of by the operator to screw the screw forward or backward to swing the cheek 20 from its normal position as shown in Fig. 1, into an inclined position, as shown in Fig. 2, or back from the latter to the normal position.

When the cheek 20 is in the normal position shown in Fig. 1 its face is parallel to the face of the jaw 11, and in this position the tool can be used as an ordinary hand clamp or a monkey wrench. When it is desired to use the tool as a pipe wrench then the cheek 20 is swung into inclined position relative to the other jaw to coact with such jaw and the gripping teeth 13 with a view to securely grip a pipe or a similar round article, as will be readily understood by reference to Fig. 2.

In order to prevent the ball 23 from becoming accidentally disconnected from its socket 22, the cheek 20 is provided at opposite sides of the socket 22 with cut-out portions 26 to provide thin walls, which are upset as indicated at 27 in Fig. 3, to engage the ball adjacent the screw 24 to prevent the ball from accidentally leaving the socket 22. The face of the cheek 20 is preferably provided with a lengthwise extending V-shaped groove 28 to permit of conveniently gripping small, round articles between the jaw 11 and the walls of the groove 28.

In order to permit convenient handling the tool or attaching it to a bench, table or other support use is made of a convertible handle and attaching device 30 arranged as follows: The bearing 14 is provided at the outer side with a boss 29 in which is secured a rod 31 provided at its outer end with a screw thread 32 and on which fits a sleeve 33 having a bore 34 provided at one end with a screw thread 35 screwing on the thread 32 of the rod 31. When the sleeve 33 is in position on the rod 31, as shown in Fig. 2, then the rod and sleeve form a convenient handle for the operator to take hold of while manipulating the tool as an.
ordinary hand clamp with the cheek 20 in the position shown in Fig. 1, and when using it as a pipe wrench with the cheek 20 inclined as shown in Fig. 2. When it is desired to use the tool as a bench clamp then the sleeve 33 is unscrewed from the rod 31 and the washer 36 is removed from the rod, and then the rod 31 is engaged with a hole 41 formed in a bench, table or other support 40, as indicated in Fig. 1. The washer 36 is then reengaged with the rod 31 and the sleeve 33 is now reversed and screwed on the threaded end 32 of the rod 31, and against the washer 36, to clamp the bearing 14 firmly on the top of the support 40. The tool is now in position for use as a bench clamp or a vise, and on turning the operating screw 16 the shank 10 with its movable jaw 11 is moved lengthwise to clamp the desired article between the jaws. It is understood that after an article is placed between the jaw 11 and the cheek 20, the jaw 15 is moved up by turning the operating screw 16, and then the cheek 20 may be inclined by adjusting the screw 24 to obtain a firm final clamping of the article between the jaw 11 and the cheek 20. The same action takes place when the cheek 20 is pivoted on the fixed jaw 11 instead of the movable jaw 15, that is, final clamping adjustment is made by the operator turning the screw rod 24 to move the cheek 20 into slightly inclined position.

From the foregoing it will be seen that the tool can be readily used as a hand clamp, bench clamp, monkey wrench, pipe wrench or the like, and the tool can be readily manipulated by the use of the handle or fastened to a bench or other support, as above described.

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

A combined clamp and wrench comprising a shank provided with a fixed jaw and with gripping teeth along one edge adjacent the said fixed jaw and with rack teeth along the remainder of the said shank edge, a movable jaw slideable on the said shank and provided with an operating nut engaging the said rack teeth for adjusting the movable jaw to operating position relative to the said gripping teeth, a cheek pivoted on one of the said jaws and adapted to coat with the other jaw and the said gripping teeth, an adjusting screw screwing in the said jaw on which the cheek is pivoted, the said screw having a ball and socket connection with the said cheek, a threaded rod projecting at right angles from the bearing of the movable jaw, and an internally threaded sleeve screwing on said rod, the rod and sleeve forming a handle or serving as means for clamping the tool to a bench.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."