(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 324 724**
A2

(12) # EUROPEAN PATENT APPLICATION

(21) Application number: **89810027.6**

(22) Date of filing: **12.01.89**

(51) Int. Cl.[4]: **B 25 B 5/10**

(30) Priority: **14.01.88 CH 166/88**

(43) Date of publication of application:
19.07.89 Bulletin 89/29

(84) Designated Contracting States:
BE CH DE ES FR GB IT LI NL SE

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(54) **Woodworkers clamp.**

(57) A woodworkers clamp is described having two clamping faces, the one face being part of an L-shaped arm and the other being mounted in a thread on a second arm, the second arm being slidably mounted on the first L-shaped arm, whereby rotation of the threaded portion tends to force the two clamping faces together. The improvement of the invention resides in providing either an internal socket or an external nut to which a spanner can be applied to generate additional rotational force to the handle of the second arm.

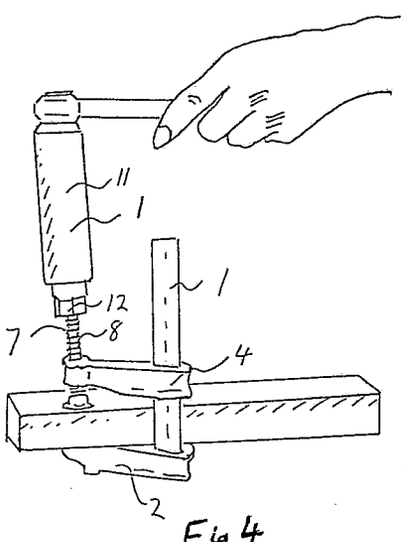


Fig 4

EP 0 324 724 A2

Description

WOODWORKERS CLAMP

This invention relates to a woodworkers clamp of the type where a hand grip is tightened by rotation to press two work pieces together.

There are very many instances, for example in carpentry (but also in building generally and other professions), where two work pieces must be held together. This may be merely so that the hands are free for another operation, or where the work pieces have been glued and must be held together until the glue has set. Considerable compression force may be desired during these operations. Usually such clamps have a round smooth handle and rotating force from the hand is used to tighten the clamp. In many cases it is not possible for the human hand to exert the desired rotating force on the handle. For example the operator may be a senior citizen not having sufficient force in his wrist or the hand of the operator may be wet and slippery.

In United States Patent No. 4162785 there is described a screw clamp for tightening mitre joints which uses two members with two engaging holes in parts to be mounted on a threaded rod.

In German Patent Specification No. 1928490 there is described a screw clamp for a paper stack which has a tightening nut provided with threaded collets for rapid engagement with a pressure beam.

It is an object of the invention to provide a woodworkers clamp wherein with little force additional pressure can be generated between the clamping faces of a woodworkers clamp.

It is a further object of the invention to provide such a clamp which is virtually as easy to manufacture as a conventional clamp.

It is a further object of the invention to provide such a clamp whereby the additional pressure can be generated using a woodworkers clamp and additional tools which are to be found in every carpenter's workshop.

The above and further objects of the invention are achieved by providing a woodworkers clamp having two clamping faces, the one face being part of an L-shaped arm and the other being mounted in a thread on a second arm, the second arm being slidably mounted on the first L-shaped arm, whereby rotation of the threaded portion tends to force the two clamping faces together, the improvement which resides in providing either an internal socket or an external nut to which a spanner can be applied to generate additional rotational force to the handle of the second arm.

In such a manner considerably greater force can be generated between the clamping faces, even though less strength is needed.

The invention will now be described by way of non-limiting example with respect to the accompanying drawings in which:-

Figure 1 shows a cross section of a clamp according to the instant invention,

Figure 1a shows a section along the line A - A of Figure 1,

Figure 1b shows a section along the line B - B of Figure 1,

Figure 2 shows a perspective view of the clamp of Figure 1 from above, holding a piece of wood,

Figure 3 shows a perspective view of the clamp of Figure 1 from underneath, holding a piece of wood,

Figure 4 shows the clamp of Figure 1 with a spanner inserted into the socket of the clamp, and,

Figure 5 shows the clamp of Figure 1 with an adjustable spanner gripping the nut of the clamp,

The clamp of the invention consists of an L-shaped arm 1 having a first clamping arm 2 having a clamping surface 3. The clamping surface is conventionally substantially flat, but may roughened for example by having a series of indentations thereon to assist in gripping of the work being clamped. The L-shaped arm also has smooth elongated portion usually at right angles to the clamping section 2. This substantially smooth portion may have one side surface 15 roughened by indentations or teeth.

Slidably mounted on said elongated portion is a sliding arm 4 of a second clamping piece having a second clamping surface 6 which like the first clamping surface may also be roughened. The two clamping surfaces 3, 6 are arranged substantially parallel to each other. The second clamping surface is mounted rotatably on the end of a threaded spindle 7 equipped with an external thread 8. This spindle passes through an internally threaded hole in the clamping arm 4. The spindle is attached to a handle 11 such that rotation of the handle in a clockwise direction (as viewed from above) tends to force the clamping faces together and rotation in the opposite direction moves the clamping faces away from each other.

The handle attached to the second clamping surface is equipped with means to receive a lever so that added rotational force can be applied to force the clamping faces together. Said means to receive a lever can for example either be a socket 13 or an external nut shaped portion 12. The socket or nut may be of any conventional shape suitable to receive a spanner or key. This shape may for example be square, hexagonal or polygonal. Spanners of known type can be applied to either means to receive a lever and the spanner rotated in conventional manner.

Other embodiments of the invention will be apparent to the man skilled in the art and the invention is to be deemed to include such modifications. Such variations are to be understood to be encompassed by the appended claims.

Claims

1. In a woodworking clamp the improvement which consists in providing a socket or nut portion on or in the handle for the purpose of applying a spanner thereto to obtain increased clamping force between the clamping surfaces.

2. In a woodworkers clamp having two clamping surfaces, the one face being part of an L-shaped arm and the other being mounted in a thread on a second arm, the second arm being slidably mounted on the first L-shaped arm, whereby rotation of the threaded portion tends to force the two clamping faces together, the improvement which resides in providing either an internal socket or an external nut to which a spanner can be applied to generate additional rotational force to the handle of the second arm.

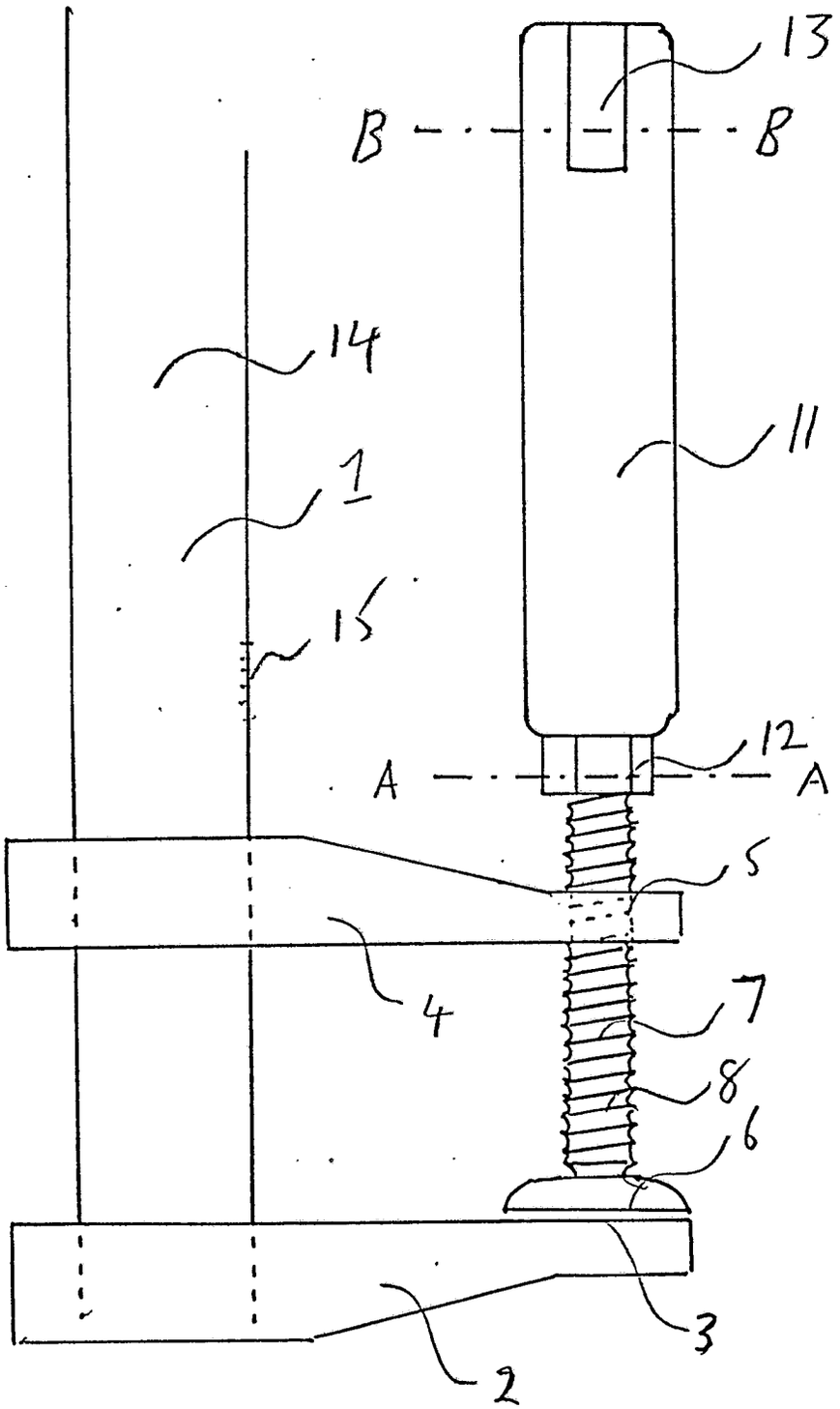


Fig 1

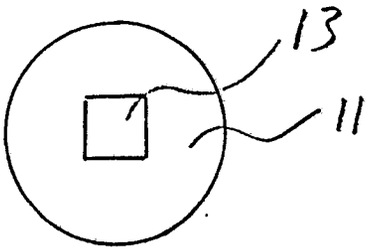
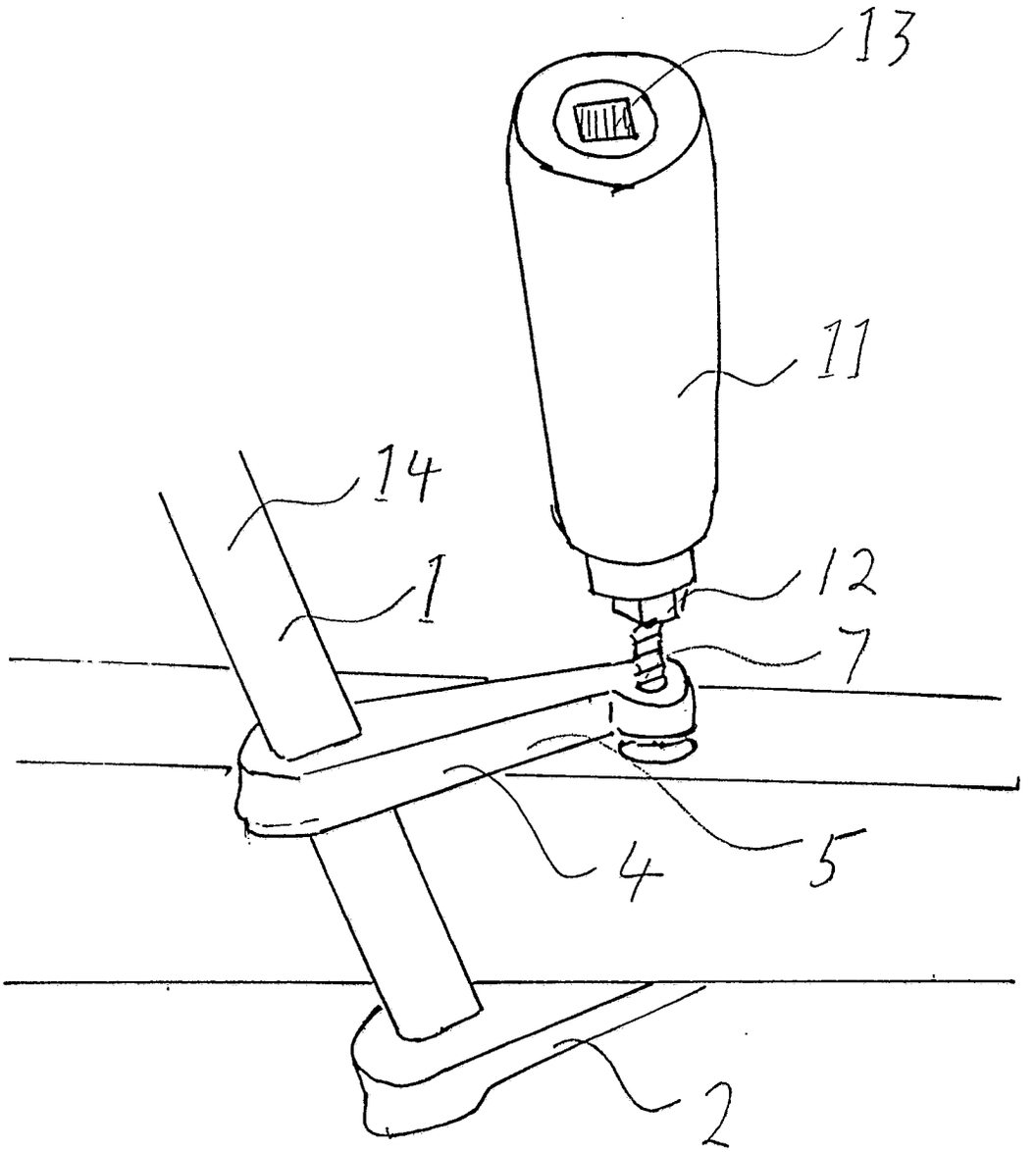


Fig 1b

Fig 1a

Fig 2



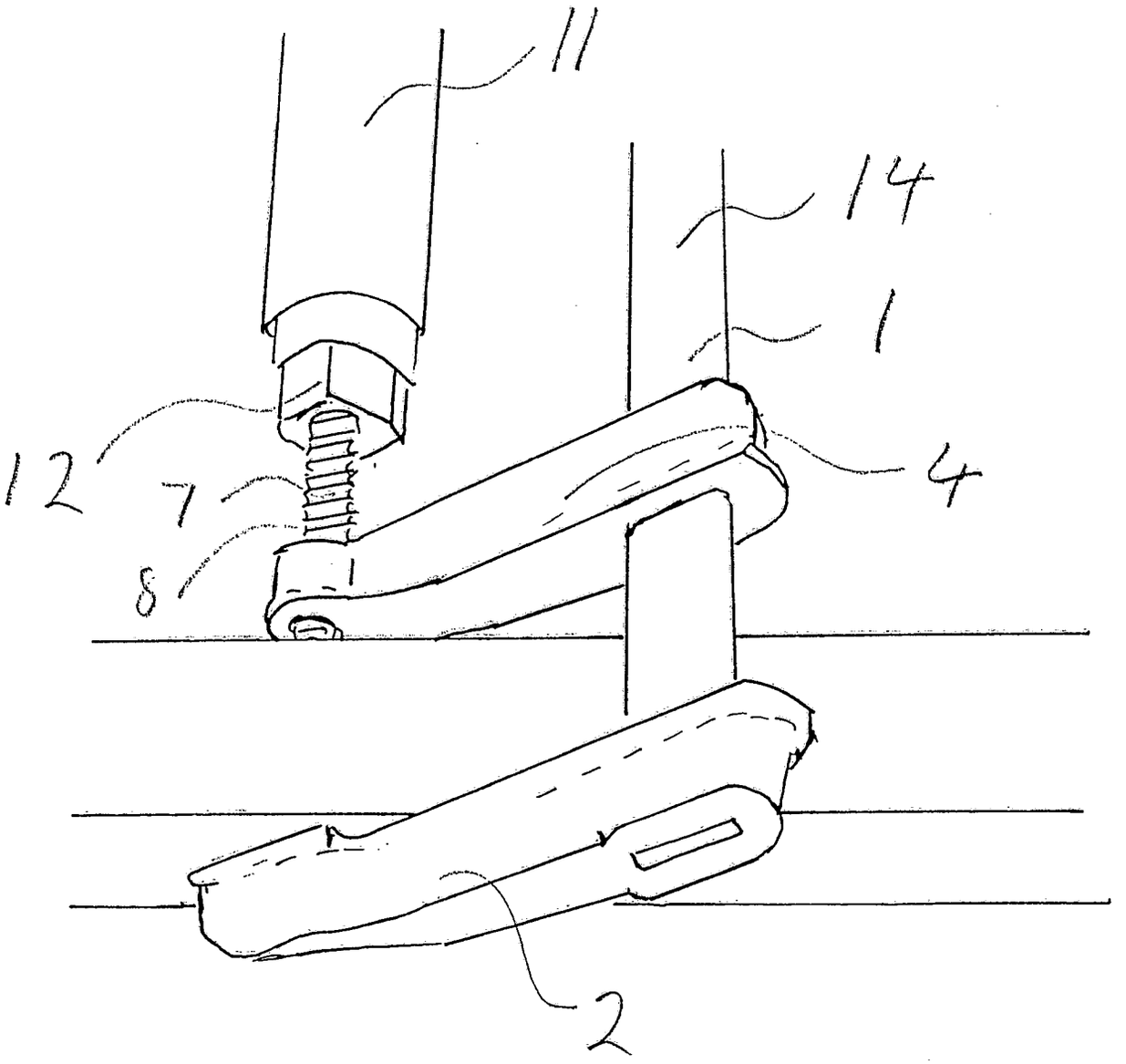


Fig 3

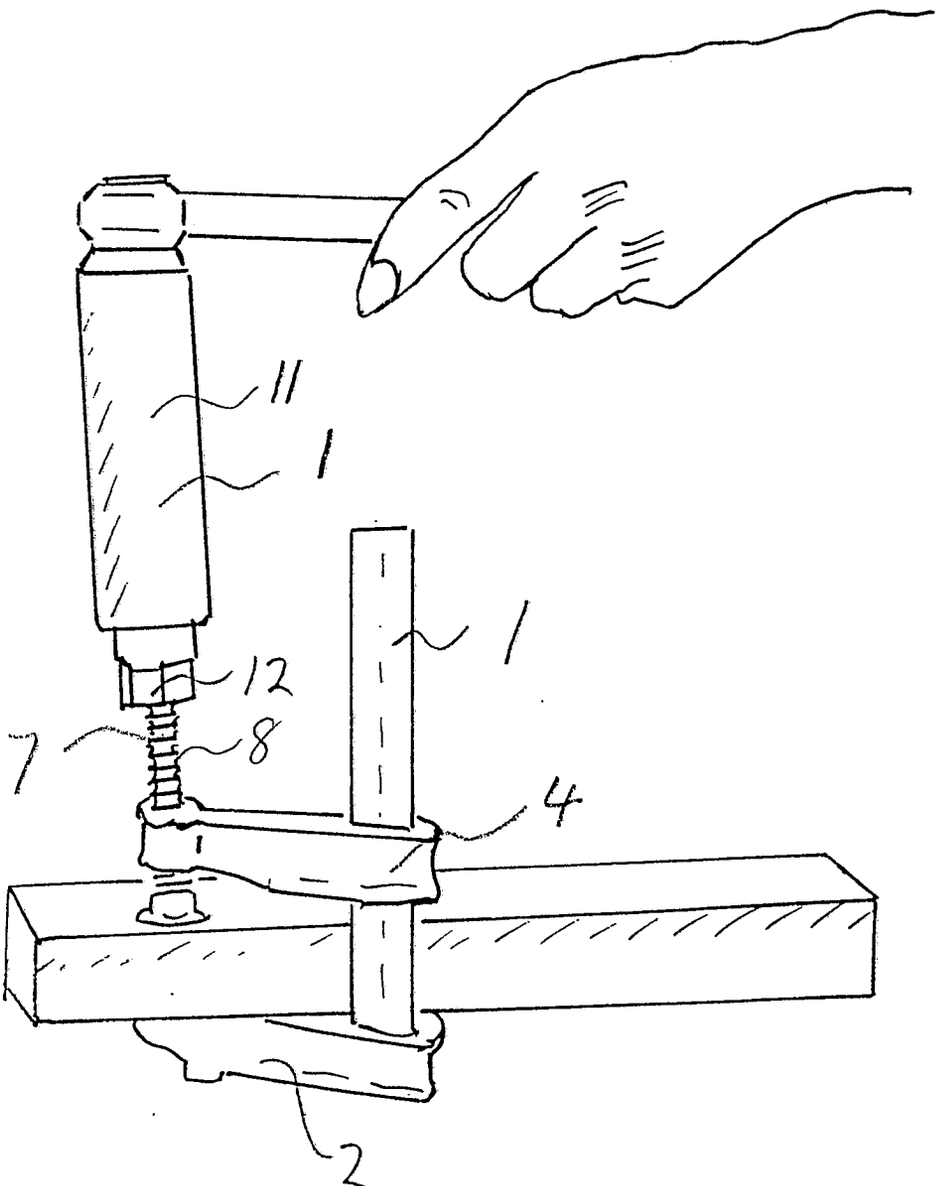


Fig 4

Fig.5