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## EUROPEAN PATENT APPLICATION

⑬ Application number: 86305930.9

⑮ Int. Cl.: B 25 B 13/24

⑭ Date of filing: 01.08.86

⑯ Priority: 16.08.85 GB 8520613

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⑰ Date of publication of application: 04.03.87  
Bulletin 87/10

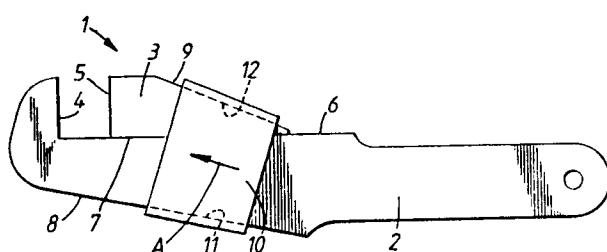
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⑲ Designated Contracting States: AT BE CH DE FR GB IT LI  
LU NL SE

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⑳ **Adjustable spanner.**

⑳ An adjustable spanner comprises first (2) and second (3) jaw members defining respectively first and second substantially parallel jaw faces (4, 5) the distance between which is adjustable by relative sliding of the jaw members. A first wedge face (8) is defined on the first jaw member (2) and a second wedge face (9) is defined on the second jaw member. A locking member (10) having wedge faces (11, 12) complementary to the wedge faces of the jaw members, is slidable to the jaw members to bring the wedge faces of the locking member (10) into engagement with the wedge faces (8, 9) of the jaw members (2, 3) to prevent by wedging action the separation of the jaw faces (4, 5).



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ADJUSTABLE SPANNER

This invention relates to an adjustable spanner.

According to one aspect of the present invention there is provided an adjustable spanner comprising: first and second jaw members defining respectively first and second substantially parallel jaw faces, the jaw members being slidable relative to each other to adjust the distance between the jaw faces; a first wedge face defined on the first jaw member; a second wedge face defined on the second jaw member; and a locking member having wedge faces complementary to the wedge faces of the jaw members, the locking member being slidable relative to the jaw members to bring the wedge faces of the locking member into engagement with the wedge faces of the jaw members to prevent by wedging action the separation of the jaw faces.

The preferred embodiment of the invention comprises three mutually slidable members, and the adjustable spanner can be set to any desired size by sliding the jaw members relative to each other to set the desired spacing between the jaw faces, and sliding the locking member into engagement with the wedge faces of the jaw members to lock the jaw members against separation of the jaw faces.

In the preferred embodiment of the invention the wedge faces of the jaw members define a small acute angle to each other, and the spanner is adjustable from the

widest towards the narrowest setting thereof by applying finger pressure to the locking member thereby causing the locking member to move the second jaw member relative to the first jaw member. Preferably, the second jaw member 5 is spring biased relative to the first jaw member in a direction tending to separate the jaw faces, and the jaw members are therefore movable relative to each other in a direction tending to separate the jaw members by applying finger pressure to the locking member to move it 10 in a sense permitting the spring bias to separate the jaw members.

The invention will be better understood from the following description of a preferred embodiment thereof, given by way of example only, reference being had to the 15 accompanying drawings wherein:

Figure 1 shows in side and end elevation the components of the adjustable spanner; and

Figure 2 shows the adjustable spanner in an assembled state.

20 The adjustable spanner 1 comprises a first jaw member 2 and a second jaw member 3 which define respective substantially parallel jaw faces 4,5. The jaw members 2,3 have respective surfaces 6,7 in sliding engagement whereby the jaw member 3 may be slid along the surface 6 of the 25 jaw member 2 in order to vary the spacing between the jaw faces 4,5.

A first wedge face 8 is provided on the first jaw member, and a second wedge face 9 is provided on the second jaw member. The wedge faces 8,9 define an 30 included angle of  $11.25^\circ$ . A locking member 10 has internal wedge faces 11,12 which define the same included angle as the wedge faces 8,9. The locking member 10 can accordingly be positioned as illustrated in Figure 2 with the wedge face 11 in full face engagement with the wedge face 35 8, and the wedge face 12 in full face engagement with the

wedge face 9. In this position, the jaw members 2,3 are locked against movement in the direction tending to separate the jaw faces 4,5.

Finger pressure applied to the locking member 5 10 generally in the direction of the arrow A will cause the jaw member 3 to slide along the surface 6 of the jaw member 2 to reduce the spacing between the jaw faces 4,5.

Preferably, the jaw member 3 includes a generally T-shaped slot 13 in which is received a generally T-shaped 10 pin 14 secured to the jaw member 2. A compression spring is installed between the blind end 15 of the slot 13 and the pin 14 to bias the jaw member 3 relative to the jaw member 2 in a direction tending to separate the jaw faces 4,5. Accordingly, finger pressure applied to the locking 15 member 10 in a direction opposite to that of arrow A moves the locking member away from the jaw face 4 and permits the compression spring to move the jaw member 3 in a direction tending to separate the jaw faces 4,5.

CLAIMS:

1. An adjustable spanner comprising first (2) and second (3) jaw members defining respectively first and second substantially parallel jaw faces (4,5), characterised in that the jaw members are slidable relative to each other to adjust the distance between the jaw faces (4,5), and in that: a first wedge face (8) is defined on the first jaw member (2); a second wedge face (9) is defined on the second jaw member (3); and a locking member (10) having wedge faces (11,12) complementary to the wedge faces of the jaw members, is slidable relative to the jaw members to bring the wedge faces (11,12) of the locking member into engagement with the wedge faces (8,9) of the jaw members (2,3) to prevent by wedging action the separation of the jaw faces (4,5).

15 2. An adjustable spanner according to claim 1, characterised in that the wedge faces (8,9) define a small acute angle to each other and the spanner is adjustable from the widest towards the narrowest setting thereof by applying finger pressure to the locking member (10) thereby causing the locking member to move the second jaw member (3) relative to the first jaw member (2) to reduce the spacing of the jaw faces.

25 3. An adjustable spanner according to claim 2, characterised in that said small acute angle is substantially 11°.

4. An adjustable spanner according to any preceding claim, characterised in that the jaw members are in sliding engagement via mutually engaging substantially flat surfaces (6,7) which are perpendicular to the jaw faces, and wherein the wedge faces (8,9) of the first and second jaw members subtend substantially equal angles to said flat surfaces.

5. An adjustable spanner according to any preceding claim, characterised in that the second jaw member (3) is spring biased relative to the first jaw member (2) in a direction tending to separate the jaw faces, whereby the 5 jaw members are movable relative to each other in a direction tending to separate the jaw faces by applying finger pressure to the locking member (10) to move it in a sense permitting the spring bias to separate the jaw faces.

10 6. An adjustable spanner according to claim 5, characterised in that the second jaw member (3) is retained on the first jaw member (2) by means of a generally T-shaped pin (14) which is secured to one of the jaw members with the head of the pin captively retained in a generally 15 T-shaped slot (13) formed in the other of the jaw members.

7. An adjustable spanner according to claim 6, characterised in that the generally T-shaped pin (14) is secured to the first jaw member (2) and the said spring bias 20 is provided by a compression spring which is located within said generally T-shaped slot (13) in the second jaw member (3) and reacts between the generally T-shaped pin and the second jaw member.

25 8. An adjustable spanner according to any preceding claim, characterised in that the locking member (10) is of box-like configuration with first and second opposed side walls which define the wedge faces of the locking member, and third and fourth side walls which interconnect the first 30 and second side walls to form a box within which the jaw members are received.

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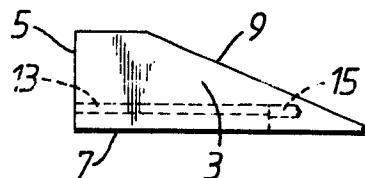


FIG. 1A.

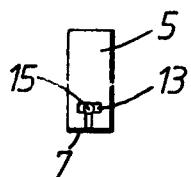


FIG. 1B.

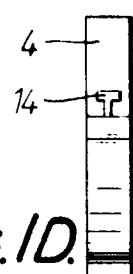


FIG. 1D.

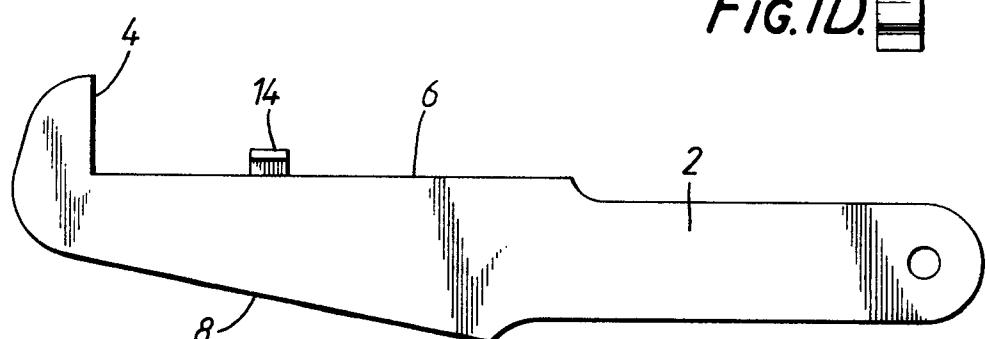


FIG. 1C.

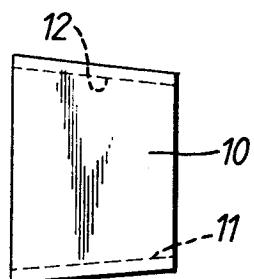


FIG. 1E.

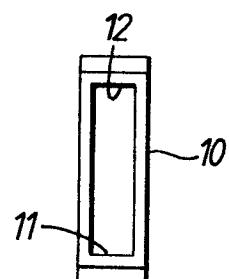


FIG. 1F.

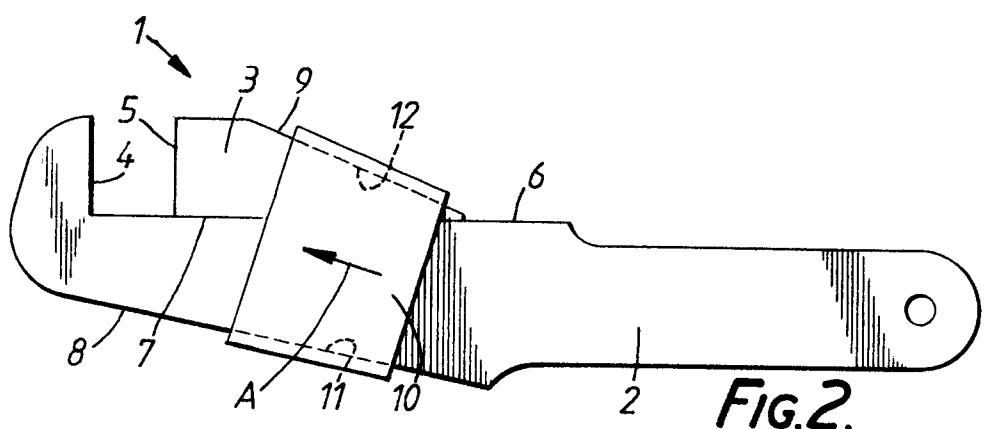


FIG. 2.



## EUROPEAN SEARCH REPORT

DOCUMENTS CONSIDERED TO BE RELEVANT			EP 86305930.9
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	WO - A1 - 80/00 324 (VIDAL) * Totality *	1-5,8	B 25 B 13/24
A	* Totality *	6,7	
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X	US - A - 1 427 918 (C.H. STAUFFER) * Fig. 1-5 *	1-5,8	
A		6,7	
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X	US - A - 890 146 (J.R. LONG) * Fig. 1-5 *	1-5,8	
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			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			B 25 B 13/00
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
VIENNA	18-11-1986	BENCZE	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			