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MEANS FOR CONNECTING MACHINE PARTS

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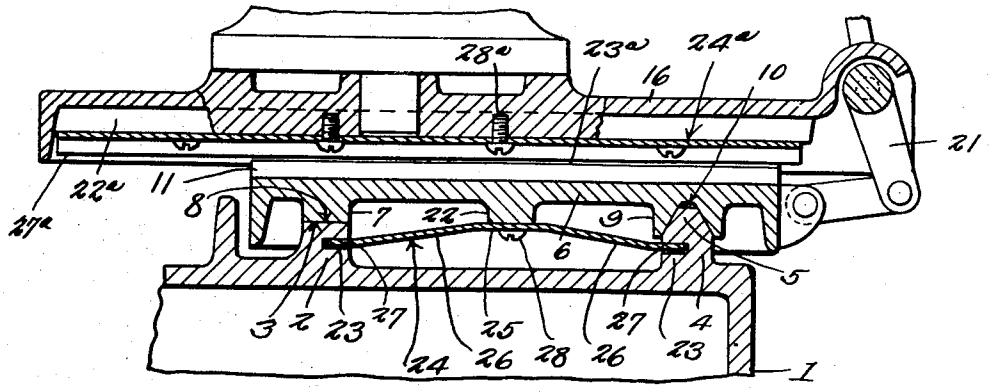


Fig. 1.

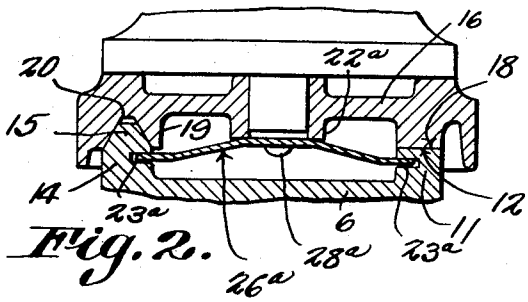


Fig. 2.

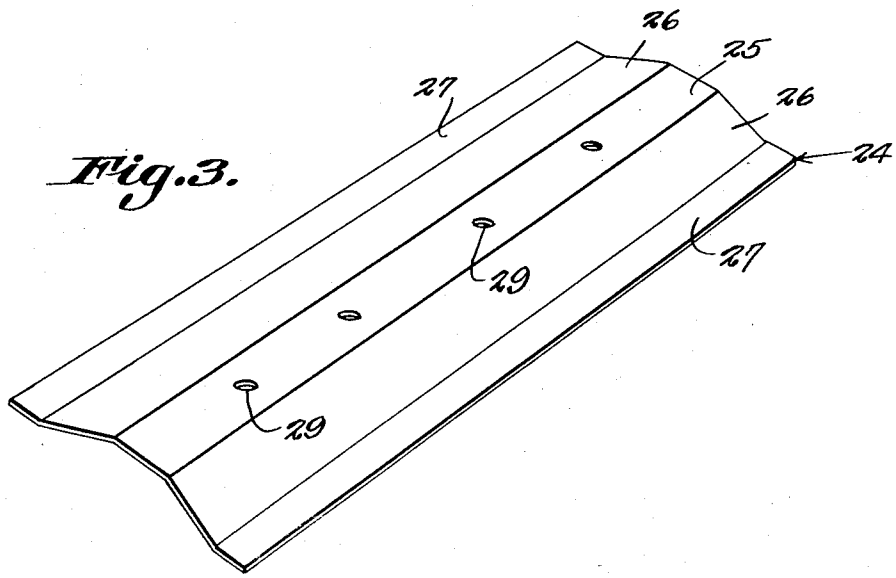


Fig. 3.

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MEANS FOR CONNECTING MACHINE PARTS

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4 Claims. (Cl. 308—3)

There are many machines in which a table has sliding movement with respect to a base, or wherein one table has sliding movement with respect to another, the movements referred to being straight-line sliding movements. The foregoing being understood, it may be stated that the present invention aims to provide a simple but effective means whereby machine parts of the kind specified may be held together for right line sliding movement.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:

Fig. 1 shows in vertical section, a portion of a machine equipped with the device forming the subject matter of this application;

Fig. 2 is a fragmental transverse section at right angles to Fig. 1;

Fig. 3 is a perspective view showing the spring plate which holds the relatively movable parts of the machine together in accordance with the present invention.

The device shown, described and claimed is adapted to be used on machines of widely different sorts, but by way of illustration, a portion of a machine for refacing the valves of internal combustion engines has been selected.

The machine embodies a base 1, provided with an upstanding rib 2 having a flat upper surface 3. The base 1 carries an upstanding rib 4, parallel to the rib 2, and having a tapered upper portion 5.

The numeral 6 designates an intermediate table, having a depending outer rib 7, equipped with a flat lower surface 8, adapted to cooperate with the flat upper surface 3 of the rib 2 on the base 1. The intermediate table 6 is provided with a depending outer rib 9, parallel to the rib 7, and supplied with an inverted V-shaped groove 10, which receives the tapered upper portion 5 of the rib 4 on the base 1, the intermediate table 6 thus being guided for straight line sliding movement on the base 1. The intermediate table 6 has an upstanding rib 11, which may be arranged at right angles to the ribs 4 and 2 of the base 1. The rib 11 of the intermediate table 6 has a flat upper surface 12. The table 6 is provided with an upstanding rib 14, parallel to the rib 11, and having a tapered upper portion 15.

The upper table is marked by the numeral 16, and has a depending outer rib 17, the flat lower surface 18 of which cooperates with the flat upper surface 12 of the rib 11 on the intermediate table 6. The upper table 16 is provided with a depending outer rib 19, parallel to the rib 17, and supplied with an inverted V-shaped groove 20 which receives the part 15 of the rib 14 on the intermediate table 6. The means for producing relative right line reciprocation between the table 16 and the table 6 is marked by the numeral 21, and the table 6 can slide on the ribs 4 and 2 of the base 1, in a direction generally at right angles to the direction in which the upper table 16 is reciprocated on the intermediate table 6.

By the construction above described, in a valve refacer or in any other machine capable of employing the base and table construction above referred to, provision is made for holding the parts together for straight-line relative reciprocation, but no means is provided for holding them together against vertical separation. In the solution of that problem, the intermediate table 6 is provided with a depending intermediate rib 22, located between the ribs 9 and 7. Grooves 23 are formed in the inner surfaces of the ribs 2 and 4 of the base 1.

Recourse is had to a spring plate 24, preferably made of brass. The plate 24 is shown in detail in Fig. 3, and Figs. 1 and 2 show that, generally stated, the spring plate 24 may be described roughly as being bowed transversely. The plate 24 has a flat, central longitudinal portion 25, of about the same width as the depending intermediate rib 22 on the table 6 and fitted thereagainst, securing elements 28, such as screws, passing through openings 29 in the part 25 of the plate 24, to hold the plate on the rib 22 of the table 6. The plate 24 comprises downwardly inclined wings 26, provided at their outer edges with flat flanges 27 which are disposed approximately in a common plane. The flanges 27 of the plate 24 are received in grooves 23 of the ribs 4 and 2 of the base 1. When the securing elements 28 are tightened up, they put the plate 24 under sufficient tension so that, as shown in Fig. 1, the flanges 27 of the plate 24 bear against the upper walls of the grooves 23 in the ribs 4 and 2 of the base 1, and, thus, the table 6 is held down on the base 1 for straight-line sliding movement. The base 1, the intermediate table 6, and

the upper table 16 are made of some material other than brass, and because the plate 24 is made of brass, friction is reduced considerably.

The upper table 16 is held on the intermediate table 6 in the way hereinbefore described. So far as the upper table 16 and the intermediate table 6 are concerned, they may be dismissed with the statement that parts hereinbefore described, in connection with the intermediate table 6 and the base 1, are designated by numerals previously used, with the suffix "*a*".

The structure shown in the drawing, hereinbefore described, and hereinafter claimed, has been thoroughly tested out by commercial use during a period beginning less than two years prior to the filing of this application, and has been found to be thoroughly practical and satisfactory.

Having thus described the invention, what is claimed is:

1. In a machine comprising members having relative movement with respect to each other, said members being provided with pairs of parallel slidably-engaged parts forming a structure embodying means for constraining said movement to a right line, a spring plate located between said machine members and held in its intermediate portion on one of the machine members, under tension arising from the inherent resiliency of the plate, the plate having its outer edge portions slidably mounted in both of said engaged parts of the pair which is carried by the other of the machine members.

2. A machine comprising members having relative movement with respect to each other, said members being provided with pairs of slidably interengaged ribs which constrain said movement to a right line, the ribs of one machine member being provided with grooves upon their inner sides, and a spring plate located between said machine members and held in its intermediate portion on the other of the machine members, under tension arising from the inherent resiliency of the plate, the plate having its outer portions slidably received in the grooves of both ribs of the pair on said one machine member.

3. A machine comprising members having relative movement with respect to each other, said members being provided with slidably interengaged outer ribs which constrain said movement to a right line, the ribs of one machine member being provided with grooves upon their inner sides, the other machine member being provided with an intermediate rib, and a spring plate located between the machine members and supported intermediately throughout its entire length on the intermediate rib, and under tension arising from the inherent resiliency of the plate, the outer portions of the plate being slidably received in the said grooves.

4. A machine comprising relatively slidable members, means for constraining said members to a right line movement, said means comprising two parallel parts on each of the machine members, and a spring plate located between the machine members and secured in its intermediate portion to one machine member, under tension arising from the inherent resiliency of the plate, the plate having its outer portions slidably engaged with both of said parallel parts on the other machine member.

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