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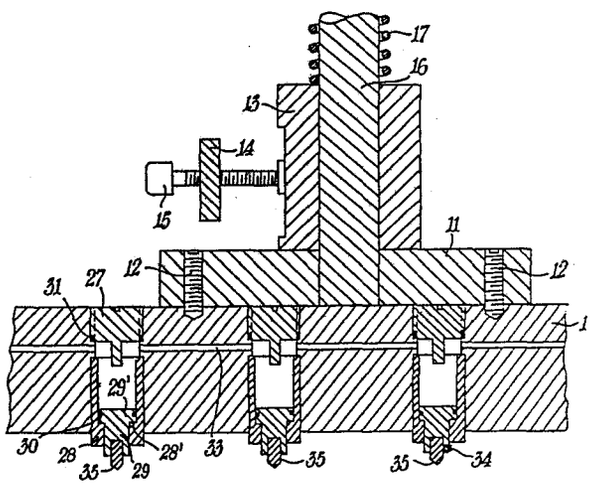
(54) Device for multiple engraving of medallions, plates or like, adapted to replace the single scriber or the conventional pantographs.

(57) A device for multiple engraving of medallions, plates or like adapted to replace the single scriber of the conventional pantographs, comprising a rectangular bar provided with a plurality of scribers, equispaced from one another, and hydraulic means for an equalized distribution of the pressure onto all the scribers, linked means rigidly connected, at one side, with said rectangular bar and, on the other side, with the frame of the pantograph for assuring a solid support of said rectangular bar and for performing with precision the traverse and penetration movements of the scribers, fastening means for rigidly fastening said rectangular bar to the movable arm of the pantograph and for manually exerting a desired pressure equally distributed on all the scribers by said hydraulic means within said rectangular bar and means for clamping on the pantograph items to be engraved in correspondence of the said scribers.



EP 0 136 268 A2

"Device for multiple engraving of medallions, plates or like, adapted to replace the single scriber of the conventional pantographs".

The present invention relates to a device for simultaneous engraving of a plurality of medallions, plates or like, adapted to replace the single scriber of the conventional pantographs.

Thus, the present invention refers to a device comprising an element having a plurality of scribers which may replace the single scriber of the conventional pantographs known in the art.

Therefore, the purpose of the invention is to provide a device having a plurality of scribers, adapted to be easily and quickly applied to any kind of the pantographs existing on the market, to replace the conventional single scriber.

The advantages of such a device may be easily perceived and consist in a contemporaneous engraving of a plurality of medallions, medals, plates or like, starting in the usual manner from a model which is followed by the tracing point of the pantograph.

Thus, this multiple reproduction has the advantage of a remarkable increase of the production with respect to the conventional pantographs in the same working time.

The number of the scribers, which may be arranged in said engraving element, may be very high, but in practice owing to some requirements of technical nature, it should not exceed 15 scribers, since said scribers should perform the engraving work with the same precision of the single scriber of the known pantographs.

It is, thus, a further object of the present invention to perform said multiple engraving element so that each scriber thereof exercites on the item to be engraved the same penetration force starting from the central scribers up to peripherical ones.

This equalized distribution of the engraving force is obtained by a system of equidistribution of the hydraulic pressure on all the scribers within the multiple engraving element.

The items to be engraved, such as medals, medallions, plates or like, in a number obviously corresponding to that of the scribers, are firmly fastened onto the pantograph table by means of two fastening elements, each fixed onto one of two approachable jaws of the pantographs, each of said fastening elements being provided with projections or like, which form, together with those of the other fastening element, seats in which are locked the items to be engraved.

The invention will be now disclosed with reference to an embodiment shown in the enclosed drawings, in which:

Fig.1 is a top view of the multiple engraving element according to the invention, with fastening and horizontal traverse means;

Fig.2 shows a sectional view along the line A-A of Fig.1;

Fig.3 is a front view of the multiple engraving means;

Fig.4 shows a side view of the multiple engraving means;

Fig.5 is a partial section of the multiple engraving element with means for fastening this element to an arm of the pantograph;

Fig.6 shows a partial section view along the line B-B of Fig.5 and

Fig.7 is a partial top view of the two fastening bar for items to be simulteneously engraved.

In the embodiment shown in Figs.1 and 6 the multiple engraving element 1 consists of a bar 10, having a rectangular cross section and provided with ten engraving points or scribers 2 which are equispaced from one another. A plate 3 is rigidly connected with the element 1 and has two oblong slots 4, into which it is fastened by means of a nut screw 5 a bar 6 making part of an articulated assembly adpted to follow the traverse and penetration movements of the scribers 2.

The assembly includes also a bar 7 having two side slots 7' for fastening it to the pantograph frame.

As it may be better seen in Fig.2, said bar 7 has two parallel side projections 7" connected by ball bearings 8 with two parallel staffs 9 in turn connected by ball bearings with two parallel end projections 6' of the bar 6 by two parallel levers 10.

As it may be easily perceived, the provision of the ball bearings 8 at the articulation points of the articulated traverse and penetration assembly allows both to follow with the maximal sensitivity and precision the movements of the conventional tracing point of the pantograph and attain a firm support of the bar 1.

As it may be seen in Figs.5 and 6, the multiple engraving element 1 is fastened to a movable arm of the pantograph, at the

place of the single scriber, by means of a plate 11 firlmy connected by screws 12 with said element 1. On the plate 11 a block 13 freely abuts, said block being fastened to said movable arm of the pantograph by a lock plate 14 pressed onto one side of the movable arm by means of two screws 15 which are screwed into the block 13 through the arm so as to firmly press it onto the other side of said arm.

The block 14 has a central hole into which a round rod 16 is inserted, which bar is movable, in opposition to that of the conventional pantographs. Around the portion of the rod 16, projecting upwards from the block 13 a strong helicoidale spring 17 is arranged, which abuts at its lower end on the block 13 and at its upper end on a circular portion of a lever 18 inserted on the rod 16 and pivoted thereon by a pivot pin 19. At the end of the short arm of the lever a small rod 20 is pivoted, the lower end of which is pivoted on a projection 21 rigidly connected with the block 13.

At the end for the other arm of the lever 18 a ball handgrip 22 is fastened, which is used during the multiple engraving for pressing the scriber element onto the items to be engraved through the movable rod 16 which may exert a pressure on the element 1 owing to that the other end of the lever 18 is fastened to the block 13 which in turn is firmly secured on the movable arm of the pantograph.

The items to be engraved are fixed between two rods 23, shows in Fig.7, each of which is fastened to one of two jaws of

the pantograph by means of screws 24. Each rod 23 carries a plurality of circular supports 25, on which are fastened small discs 26 of rubber or like. The item to be engraved is locked between the pairs of the contiguous discs 26 of the jaws.

The single scribers 2 are inserted into respective holes of the multiple engraving element 1, preferably of aluminium, and consist of a plug 27 screwed into the upper threaded portion of said hole, a bronze bushing 28 inserted (shrinked) into the lower portion of said hole and carrying in its inside a steel pin 29, the disc shaped end 29' of which abuts on the ring shaped projection 28' of the bushing 28.

The seal of said pin 28 is attained by means of an O-ring 30 and a gasket 31 seals the plug 27.

Into a hole at the end of the pin 29, projecting from the bushing 28, an engraving diamond 35 is fastened by a screw 34.

The holes of the scribers, which are connected one with another by a longitudinal channel 33, contain hydraulic oil which assures the equalized distribution of the pressure on all the scribers.

The operation of the multiple engraving is similar to that of the single engraving. Between said two support rods 23 there are secured ten medallions 36 to be engraved by a pantographic reduction for example by the word ROMA starting from the model of this word in a greater scale.

The tracing point is guided by a hand of the operator on the word traced in the model, whereas all the scribers abuting in an

initial position on the respective medallions and slightly pressed thereon by the handgrip 22 pushed by the other hand of the operator follow the tracing point and engrave on the medallions the desired word or like.

The present invention has been disclosed with reference to a preferred embodiment thereof, but it is understood that several changes and modifications may be carried out without departing from the general scope of the invention itself.

CLAIMS

1. A device for multiple engraving of medallions, plates or like adapted to replace the single scriber of the conventional pantographs, characterized in that it comprises a bar having a rectangular cross section and provided with a plurality of scribers, equispaced from one another, and hydraulic means for an equalized distribution of the pressure onto all the scribers, linked means rigidly connected, at its one side, with said rectangular bar and, at the other side, with the frame of the pantograph for assuring a solid support of said rectangular bar and for performing with precision the traverse and penetration movement of the scribers, fastening means for rigidly fastening said rectangular bar to the movable arm of the pantograph and for manually exerting a desired pressure equally distributed on all the scribers by said hydraulic means within said bar and means for clamping on the pantograph items to be engraved in correspondance of the said scribers.

2. A device as claimed in claim 1, characterized in that each of said scribers is placed in a circular hole provided in said rectangular bar and consists of a plug threaded into the upper portion of said hole, with the interposition of a sealing gasket, a bushing inserted into the lower portion of said hole, a pin having a disc shaped head abutting on an annular projection of said bushing and a lower end downwardly projecting from said bushing, said lower end of the pin having a hole containing an engraving diamond, all the holes being connected with one another by a longitudinal channel

for an equalized distribution of the hydraulic oil on all the scribers.

3. A device as claimed in claim 1, characterized in that said articulated support means has a first and a second rod respectively fastened to said rectangular bar and to the pantograph, said first and second rods being connected therebetween at their ends by means of two staffs or traces articulated to one another and to said first and second rods by means of ball bearings.

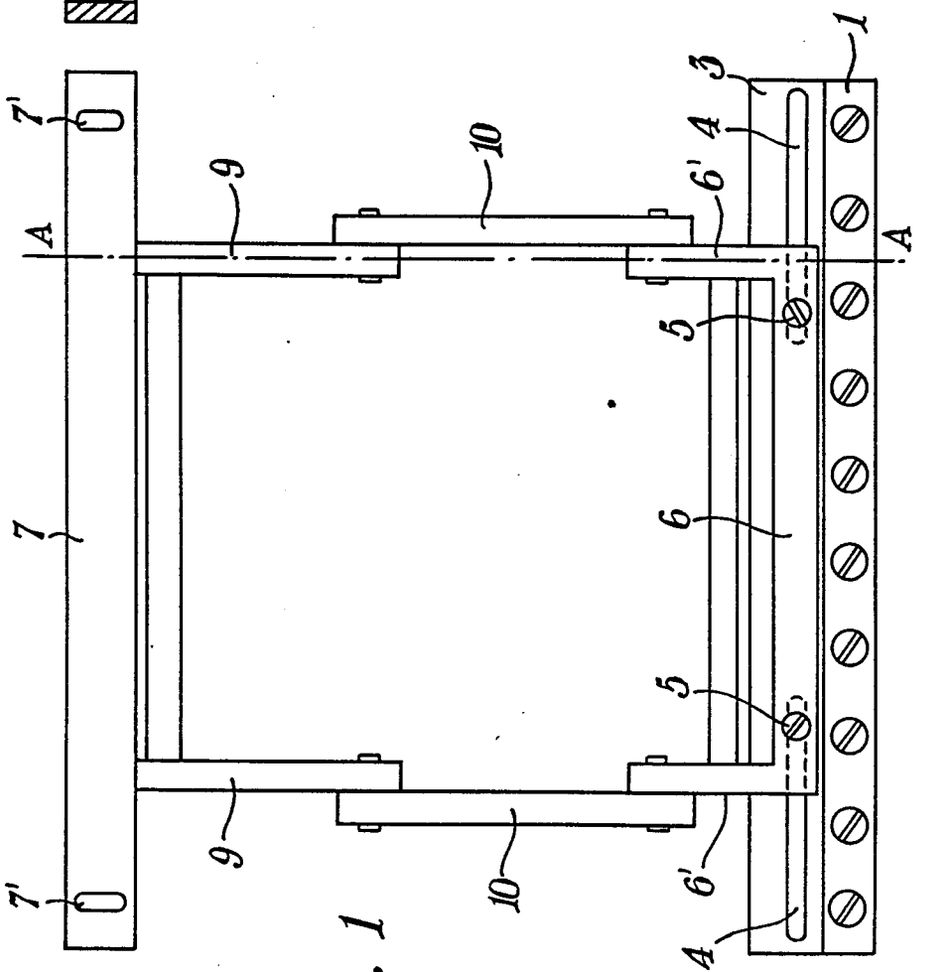


Fig. 1

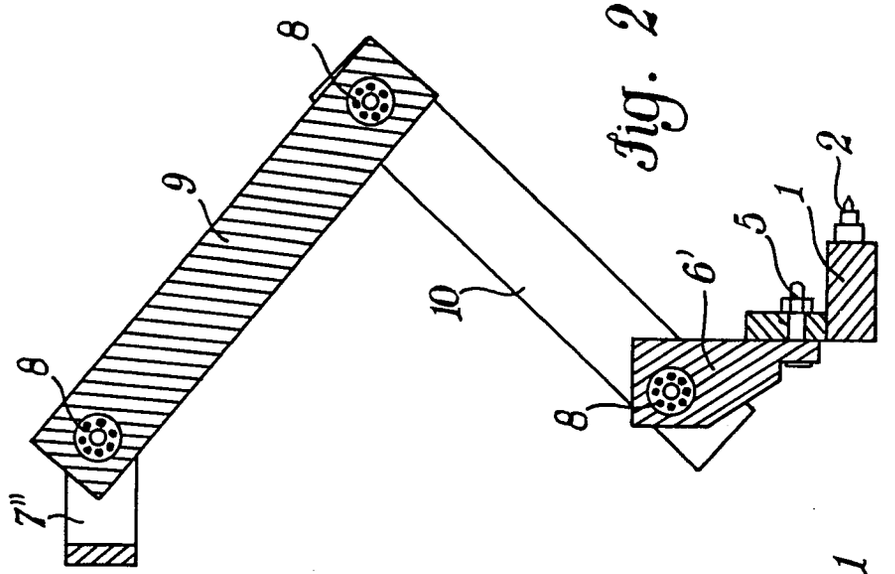


Fig. 2

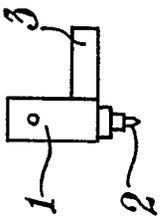


Fig. 4

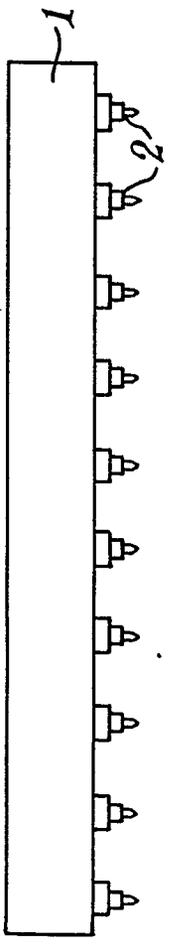


Fig. 3

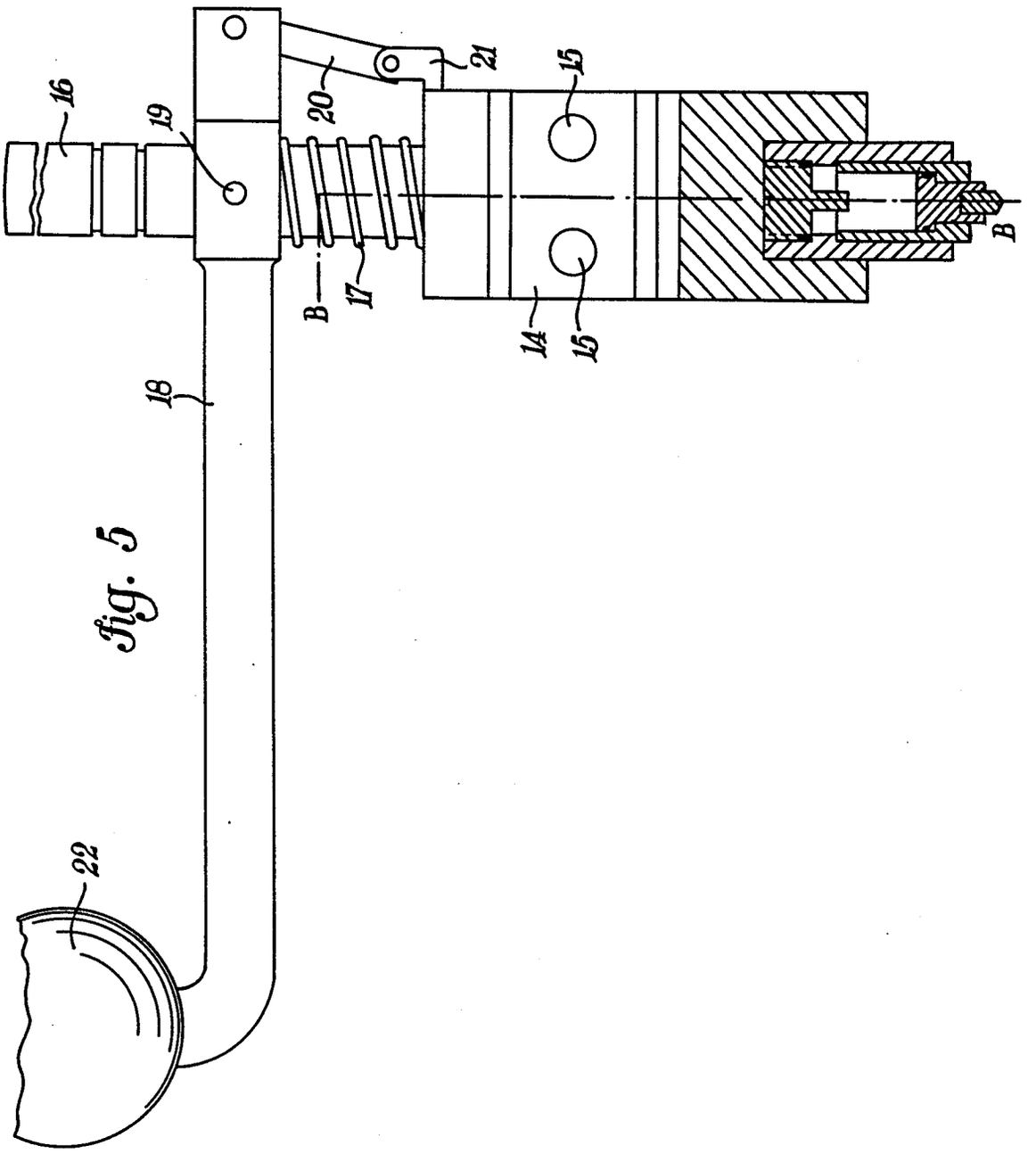
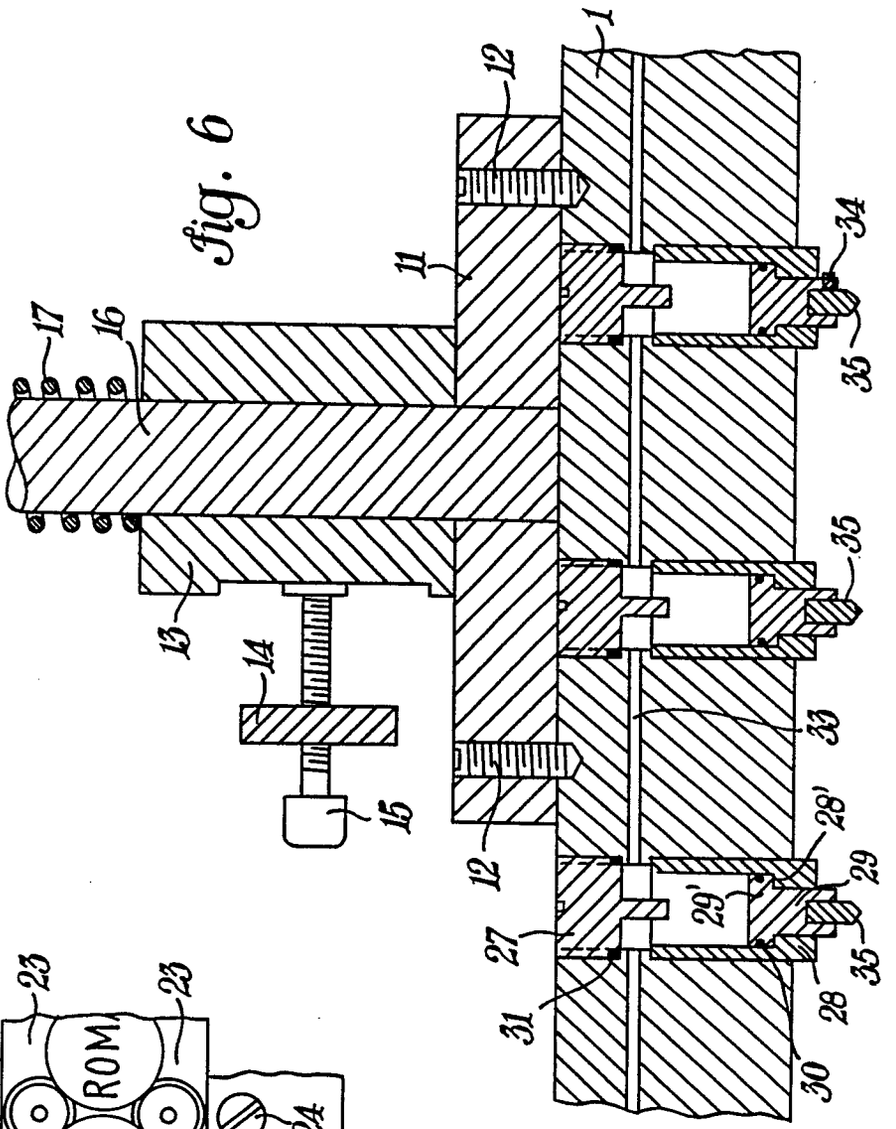


Fig. 5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12
11
34
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17
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28'
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29'
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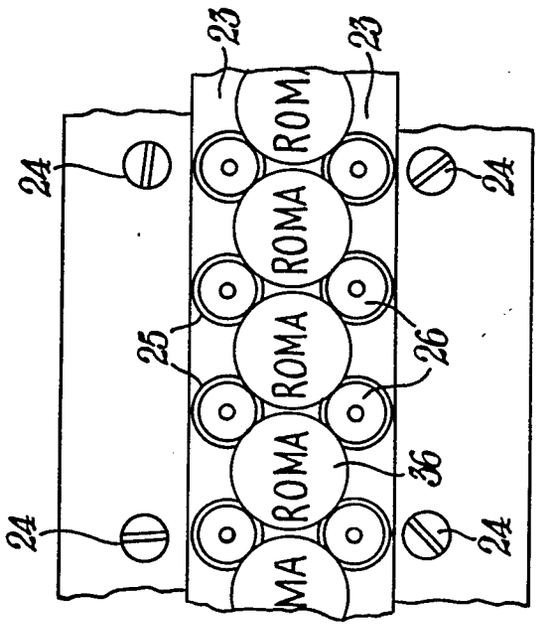
30

Fig. 6


23
23
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ROMA
ROMA
ROMA
ROMA
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36
24
24

Fig. 7