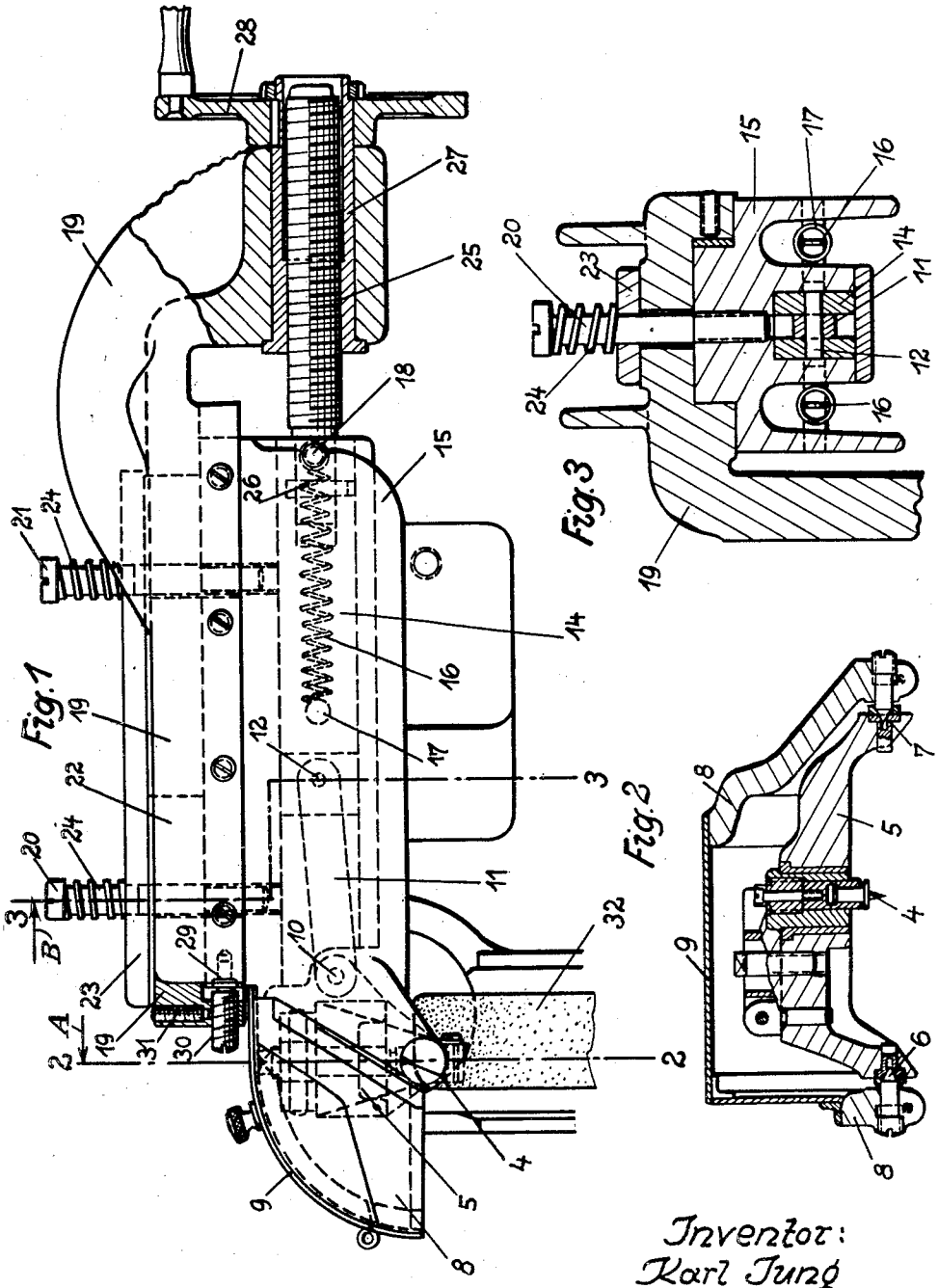
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DEVICE FOR SURFACING GRINDSTONES

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DEVICE FOR SURFACING GRINDSTONES

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This invention relates to a grindstone surfacing device intended for grindstones or grinding disks of the kind in which the circumferential surface, in axial direction, is composed of a straight line and of a curved line joining directly said straight one. The object of the invention is to accommodate the movement or movements of the surfacing tool accurately to the profile of the grinding disk, so that after the surfacing of the main or cylindrical portion of said disk the other or rounded portion is surfaced in immediate succession and perfectly automatically.

The invention is illustrated diagrammatically and by way of example on the accompanying drawings on which Figure 1 is a side-view, partly in section, of a grindstone surfacing device designed according to my invention; Fig. 2 is a section in the plane 2—2 of Fig. 1 taken in the direction of the arrow A, and Fig. 3 is a section in the plane 3—3 of Fig. 1 taken in the direction of the arrow B.

On the drawings, 4 (Figs. 1 and 2) is a diamond which is the surfacing member proper. It is adjustably mounted in known manner in a transverse member 5 supported in a casing 8 forming the front portion of a slide 15. The member or tool carrier 5 is supported on pivots or between centres 6 and 7 in such a manner that it can be turned or rocked thereon. The top of the casing 8 is preferably closed by a hood 9 in order to prevent the entrance of dust. The member 5 is connected by a link 11 and by pivots 10 and 12 (Figs. 1 and 3) with a slide 14 longitudinally shiftable in said slide 15; the two slides are connected with one another by springs 16 located in recesses of the slide 15 and connected by pins 17 with it, whereas a pin 18 passing through the slide 14 is connected with the other ends of said springs.

The slide 15 is supported in a stationary casing 19 and longitudinally shiftable therein. From the slide 15 extend upwardly through slots 22 two bolts 20 and 21, the projecting portions of which are surrounded with springs 24 bearing upon a plate 23 slidably supported on the casing 19. The springs draw the bolts upwardly whereby the slide 15 into which their lower ends are screwed is held closely against the upper wall of said casing. Behind the slide 14 a threaded spindle 25 is provided and bears against the rear end of said slide, or engages a rear bore of it with a pivot-like projection, as is the case in the constructional form shown by way of example. The slide 14 and said pivot are connected with one another by means of a key 26, as shown. The spindle 25 is supported in a stationary nut 27 located in the rear end of the casing 19. The nut can be rotated and, thus, the spindle 25 be axially moved forwards or backwards by means of a hand-wheel or hand-crank 28, the spindle 25 being prevented from turning in consequence of its connection with the slide 14 by means of the pin 26.

The slide 15 is provided with an abutment member 29 which consists, in the example shown, of a pin inserted into the front end of said slide. The pin 29 co-operates with another pin or abutment member 30 arranged adjustably in the front face of the casing 19; the pin 30 can be fixed in its adjusted position by a threaded pin or screw 31.

The manner of operation of the device is as follows:

The grinding disk to be surfaced (indicated by dotted lines at 32 in Fig. 1) has a cylindrical circumferential surface and a rounded edge at one of its faces. After the device has been properly adjusted with respect to the grinding disk, the crank or disk 28 is rotated so that the spindle 25 is pressed against the slide 14 and shoves it forwardly, but as this slide is connected with the other slide (15) by the springs 16 also this other slide is moved forwardly.

The casing 8 in which the tool carrier 5 is housed and which forms the front portion of the slide 15, as has already been stated, is preferably made integral with this slide. When this slide is moved forwards by the means just stated, also the casing 8 and with it the tool carrier 5 are moved forwards and, therefore, the cylindrical circumferential main portion of the grinding disk is surfaced by means of the diamond 4. The diamond is moved forward by the means described until the entire main circumferential surface of the grinding

disk has been surfaced, when the parts will have arrived in the position shown in Fig. 1. This is, thus, the position, in which the abutment member 29 has contacted with the abutment member 30, in consequence whereof the slide 15 with its front portion or casing 8 and the tool carrier 5 can no more be further moved forwards. If now the crank or disk 28 is rotated further, the slide 14 will be moved forward within the slide 15 and against the action of the springs 16. This motion is transmitted to the tool carrier 5 by the medium of the link 11 so that the tool carrier and the tool are turned on the centres 6 and 7 whereby the operating end of the tool is caused to move in a circular path corresponding to the rounded edge of the grinding disk which is, thus, surfaced, as desired. The curved path of the operating portion of the diamond is a direct succession of the former rectilinear path of the same. The rounded edge of the grinding disk is that on the left in Fig. 1.

I wish it to be understood that I do not limit myself to all details of the device shown in the drawings merely by way of example. Thus, for instance, the slides, instead of being guided by prismatic members, and by feathers in grooves, may be guided by dove-tailed members, and instead of the springs weights may be used as substitutes for them. Furthermore, the device can be designed also for the surfacing of grinding disks having one of its edges conically shaped. In such a case nothing else is necessary but to arrange the axial direction of the device in a corresponding angle with respect to the axis of the grinding disk.

I claim:—

1. A device for the surfacing of grindstones, the outer contour line of which consists of a circular curve joining a straight line, said device comprising, in combination, a surfacing tool, a rocking member to which it is attached, a casing in which said rocking member is supported, a slide with which said casing is connected, a second slide shiftable with respect to the first-mentioned slide; elastic means connecting the two slides with one another, a link connecting said second slide with said rocking member, a casing in which said slides move, and means for moving both slides and being common to them, said arrangement and combination of parts being adapted to operate substantially as set forth.

2. A device for the surfacing of grindstones, the outer contour line of which consists of a circular curve joining a straight line, said device comprising, in combination, a surfacing tool, a rocking member to which it is attached, a casing in which said rocking member is supported, a slide with which said casing is connected, a second slide shiftable with respect to the first-mentioned slide and arranged in it; elastic means connecting the slides with one another; a casing in which said slides move; means for moving both slides; abutment members provided in said casing and on one of said slides and so arranged as to be adapted to contact with one another, said arrangement and combination of parts being adapted to operate substantially as set forth.

3. A device for the surfacing of grindstones, the outer contour line of which consists of a circular curve joining a straight line, said device comprising, in combination, a surfacing tool, a rocking member to which it is attached, a slide with which said member is connected, a second slide shiftable with respect to the first-mentioned slide; elastic means connecting the two slides with one another, a link connecting said second slide with said rocking member, a casing in which said slides move and means for moving both slides and being common to them, said arrangement and combination of parts being adapted to operate substantially as set forth.

4. A device for the surfacing of grindstones, the outer contour line of which consists of a circular curve joining a straight line, said device comprising, in combination, a surfacing tool, a rocking member to which it is attached, a slide with which said member is connected, a second slide shiftable with respect to the first-mentioned slide; elastic means connecting the two slides with one another, a link connecting said second slide with said rocking member, a casing in which said slides move, means for moving both slides and being common to them and an abutment member arranged in said casing and co-operating with said slide and limiting its sliding movement, said arrangement and combination of parts being adapted to operate substantially as set forth.

5. A device for the surfacing of grindstones, the outer contour line of which consists of a circular curve joining a straight line, said device comprising, in combination, a surfacing tool, a rocking member to which it is attached, a slide with which said member is connected, a second slide shiftable with respect to the first-mentioned slide; elastic means connecting the two slides with one another, a link connecting said second slide with said rocking member, a casing in which said slides move, means for moving both slides and being common to them, an abutment member arranged on said first slide and another abutment member arranged on said casing and co-operating with said first mentioned abutment and limiting the sliding movement of the first mentioned slide, said arrangement and combination of parts being adapted to operate substantially as set forth.

In testimony whereof I affix my signature.

KARL JUNG.