A. DÉNES.

INSTRUMENT FOR CENTERING PURPOSES.

APPLICATION FILED APR. 16, 1912.

1,038,729.

Patented Sept. 17, 1912.

Fig.4.

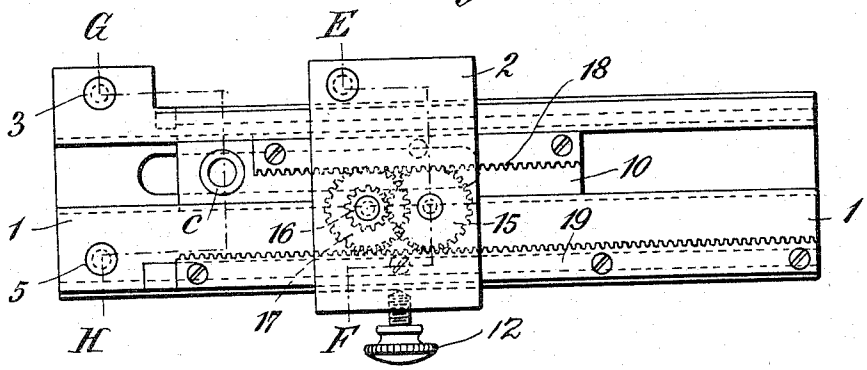


Fig.5.

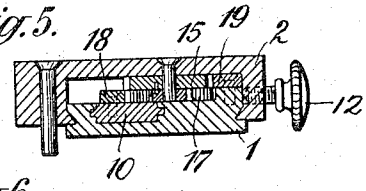


Fig.6.

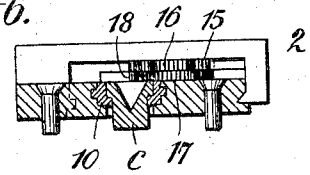


Fig.1.

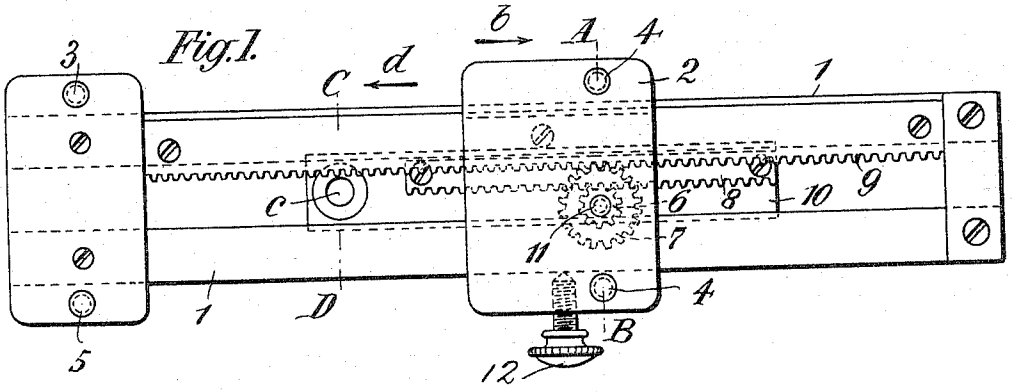


Fig.2.

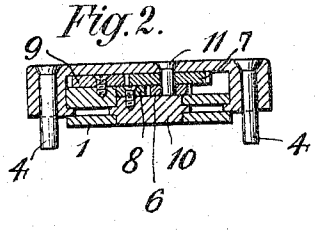
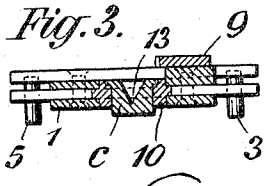


Fig.3.



Witnesses:-

Inventor

Aládar Dénes.

By

Attorneys

UNITED STATES PATENT OFFICE.

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INSTRUMENT FOR CENTERING PURPOSES.

1,038,729. Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed April 16, 1912. Serial No. 691,226.

To all whom it may concern:

Be it known that I, ALADÁR DÉNES, subject of the King of Hungary, residing at 14 Landsberger Allee, Berlin, Germany, have invented certain new and useful Improvements in Instruments for Centering Purposes, of which the following is a specification.

This invention relates to an instrument for centering blanks or marking the center of circular holes in order to have the blanks indexed to suit the adjustment in machine working.

Referring to the accompanying drawing, Figure 1 is a plan view of the instrument, Fig. 2 a cross-section on line A B of Fig. 1 viewed in the direction of the arrow *b*, Fig. 3 a cross-section on line C D of Fig. 1 viewed in the direction of the arrow *d* and Fig. 4 shows a modification of the instrument. Figs. 5 and 6 are sections on line E, F and G, H of Fig. 4.

The slide casing 1 (Figs. 1–3) carrying two pins 3 and 5 is constructed as a guide frame formed with suitable tracks along which the slide 2 is movable by hand. The inner slide or rule 10 is also arranged to slide axially along the casing or frame 1 and is provided with the center mark *c*. It is automatically moved on its guiding track through the medium of a gear 6, 7 referred to later on. The track line of the center mark *c* is the medial perpendicular of the connecting line between the pins 3 and 5 provided on the frame 1. A gear composed of a pair of pinions 6 and 7 engaging with racks 8 and 9 respectively is pivotally mounted on the slide 2, the pivot 11 serving for both pinions 6 and 7 united together. During the longitudinal adjustment of the slide 2, the pinion 7 takes up the rolling motion from the rack 9 fixed to the frame 1 and this motion is imparted to the sliding rule 10 by means of the pinion 6 gearing with the rack 8 and having the gearing ratio of 1:2 with respect to the pinion 7. The rack 8 is secured to the movable rule 10. The slide 2 carries one or two pins 4, 4 arranged as counterparts to the pins 3 and 5 of the frame 1. By the operative connection of the parts, the effect is attained that the movement or adjustment of the rule 10 takes place at half the speed or ratio of the slide 2 when moved by hand, so that the position of the center mark *c* halves the distance between the pins 3 and 5 on the frame 1 and the pin or pins 4 on the slide 2. The pins 3, 5 and 4 in any position determine the periphery of a circle, whose true center is given by the center mark *c*. This latter may be provided with a centering hole 13 (as shown in Fig. 3) or adapted to serve otherwise as center mark.

When it is intended to use the apparatus, it should be placed upon the blank or work, the two pins 3 and 5 on the frame should abut against the peripheral contour of the circular hole or body and the slide 2 moved so far until pin 4 abuts against the opposite side of the periphery, whereupon the parts are fixed by means of the set screw 12, the center mark *c* then pointing to the center of the circle determined or encompassed by the three or four pins.

Fig. 4 shows similarly to Fig. 1 a modified arrangement of the instrument. A different gear mechanism is substituted for the pinions 6, 7 and consists of pinions 15, 16, 17 arranged in such a manner that the intermediate pinion 15 intermeshes with the rack 19 of the frame 1 and that the pinion 16 is driven by the said intermediate pinion 15 so as to impart the motion to the associate pinion 17 engaging with the rack 18. In this case, too, the gearing ratio is 1:2 and the center mark *c* is automatically centered with respect to the peripheral contour determined or encompassed by the pins.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim and wish to secure by Letters Patent is:—

1. In an instrument of the character specified, the combination with a guide frame provided with means for engaging the periphery of an object, of a slide adjustable relatively to said frame and provided with means for engaging the periphery of an object, a center mark movable in said frame, and means for automatically moving said center mark one half the distance moved by said slide.

2. In an instrument of the character specified, the combination with a guide frame provided with fixed means for engaging the periphery of an object, of a slide adjustable, in said frame and provided with means for engaging the periphery of an object at a point opposite said fixed means, a slide rule provided with a center mark, and gearing

operable by the movement of said slide for moving said slide rule and center mark one half the distance moved by said slide.

3. In an instrument of the character specified, the combination with a guide frame provided with means for engaging the periphery of an object, of a slide adjustable in said frame and provided with means for engaging the periphery of an object, a slide rule provided with a center mark, a gear member carried each by the frame and the slide rule, and complementary gear members carried by said slide whereby, upon movement of the latter, the slide rule and center mark are moved one half the distance moved by the said slide.

4. In combination with a centering instrument, a track forming frame, a slide adjustable by hand and guided along the said frame, both frame and slide being provided with suitable symmetrically disposed abutting pins, a rule adapted to slide and to be adjusted along the frame and carrying the center mark, a gear connected with the slide and having its pinions intermeshing with racks, fixed to the frame and rule respectively, the gearing ratio being 1:2, so as to cause the center mark to be self-adjusted by such gear to the central position between the abutting pins, substantially as described and shown.

In testimony whereof I affix my signature in presence of two witnesses.

ALADÁR DÉNES.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.