

P. F. HOLMGREN.

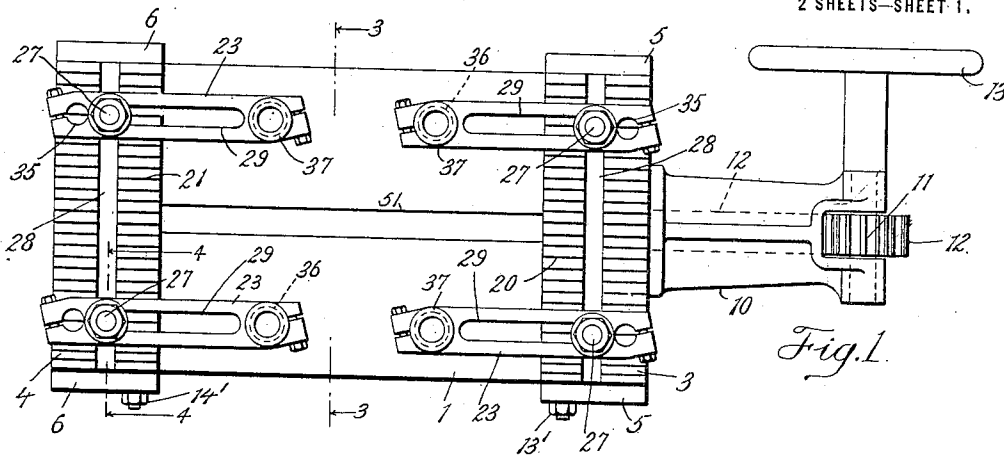
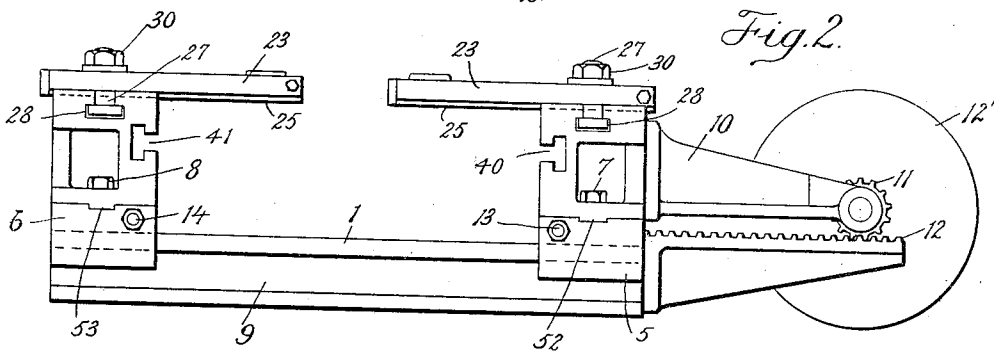
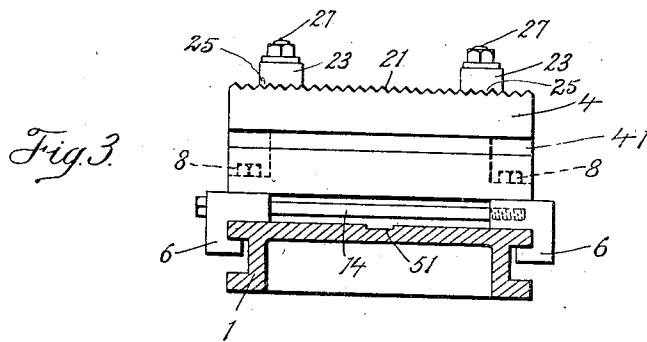
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2 SHEETS—SHEET 1.



INVENTOR
Per F. Holmgren
BY
Lewis J. Doolittle
ATTORNEY.

P. F. HOLMGREN.

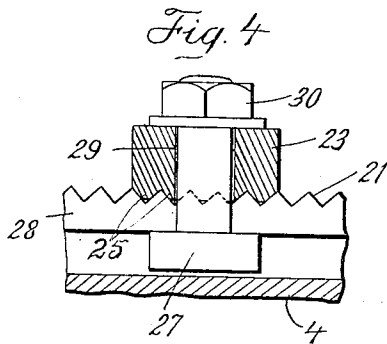
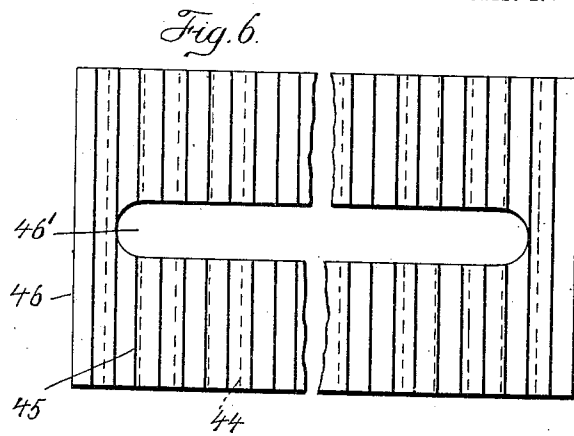
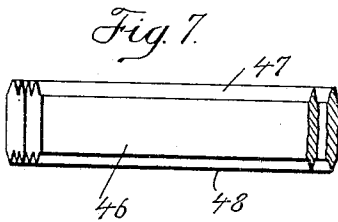
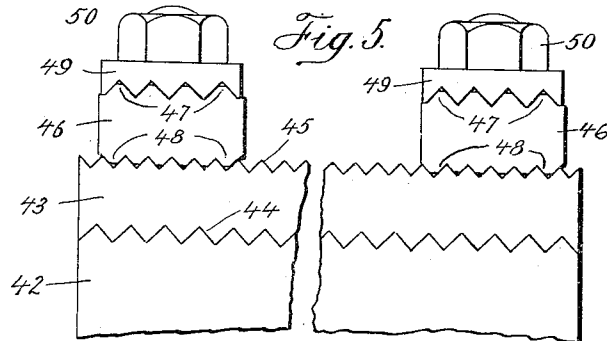
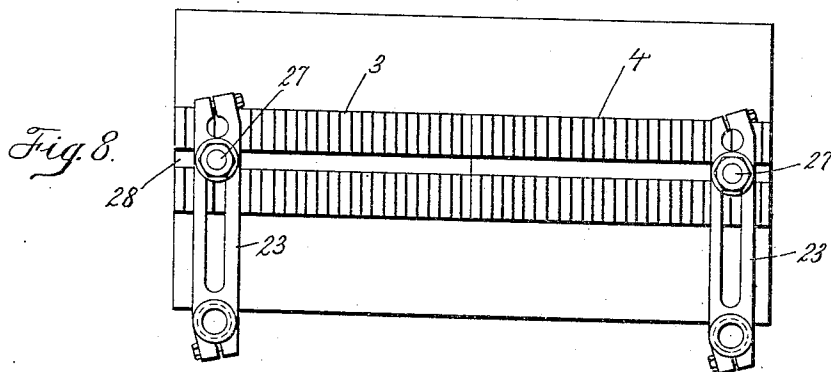
JIG.

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2 SHEETS—SHEET 2.



INVENTOR
P. F. Holmgren
BY
Lewis J. Doolittle
ATTORNEY

UNITED STATES PATENT OFFICE.

PER F. HOLMGREN, OF BROOKLYN, NEW YORK.

JIG.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that PER F. HOLMGREN, a citizen of the United States, and resident of Brooklyn, city of New York, county of Kings, and State of New York, has invented certain new and useful Improvements in Jigs, of which the following is a specification.

This invention relates to a jig intended primarily for use in the drilling of machine parts or other articles and has for an object to provide a jig which will be easily adjustable, both for use with different articles, to vary the position and spacing and also the size of the holes to be drilled.

A further object is to provide a jig of this type which may be easily and accurately adjusted and which will be of simple construction.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description taken in connection with the accompanying drawings, the various novel features of the invention being more particularly set forth in the appended claims.

In the drawings I have shown one embodiment illustrating the invention. Like parts in the several views have been given the same reference numerals.

Figure 1 of the drawings is a plan view of a drilling jig illustrating the invention. Fig. 2 is a side elevation thereof.

Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

Fig. 4 is an enlarged detail transverse section, taken on the line 4—4 of Fig. 1.

Fig. 5 is an enlarged detail fractional end elevation of the jig showing it provided with an attachment for adjustment.

Fig. 6 is a detail plan view of the plate with serrated surfaces forming part of the attachment shown in Fig. 5.

Fig. 7 is a side elevation of a portion of one of the modified centering bars used with the attachment shown in Fig. 5.

Fig. 8 is a plan view showing a modified arrangement of the centering bars and their supporting blocks.

As here shown, my improved jig compresses a bed plate 1 on which are mounted, in opposed relation to one another, a pair of blocks, 3 and 4, respectively, which form the jig walls, these blocks being relatively adjustable toward and away from one another. In the present instance, these blocks

have depending lugs 5 and 6 detachably secured thereto, as by the screws 7 and 8, and engaging in grooves 9 running longitudinally along the sides of the bed plate.

Projecting longitudinally of the jig from the block 3 is a bracket 10 having rotatably mounted in its end a gear pinion 11 which engages with a rack 12 secured to the bed plate 1. This pinion may be rotated by a hand wheel 12' and by this means the block 3 may be moved along the bed plate 1. Extending between the lugs 5 and 6 on each block are tie rods 13 and 14, these rods being threaded into the lugs on one side of the blocks and passing through the other lugs and having nuts 13' and 14' on their projecting ends. By tightening the nuts the lugs will be caused to bind against the sides of the bed plate and hold the blocks rigidly in position, the block 4 being normally held thus while the block 3 may also be so secured when desired.

The top surfaces of these blocks 3 and 4 are formed with teeth or serrations 20 and 21 running longitudinally of the jig, the teeth on one block being preferably in alignment with those on the other.

Mounted on these serrated surfaces are tool directing guide members, comprising a series of similar bars 23, which might be termed templet bars, provided on their under sides with longitudinally extending tongues 25. These tongues are of complementary form to the serrations and adapted to fit therein. These bars may be secured in place on the blocks 3 and 4 by any suitable means, such as the bolts 27, whose heads engage in T-slots 28 in the block 3 and whose shanks pass up through longitudinal slots 29 in the bars 23, nuts 30 being screwed on the ends of the bolts.

The bars 23 have their opposite ends provided with split openings, as at 35 and 36, these openings being adapted to have the usual bushings, as indicated at 37 in one end of the bars, mounted therein to guide the drills, the openings in opposite ends being preferably of different diameters, as shown, so that by turning the bars end for end different bushings adapted to accommodate drills of different sizes may be employed.

The teeth 20, 21 on the blocks 3 and 4 are spaced according to any desired scale, thus insuring very accurate adjustment of the bars 23 apart on the blocks transversely of the jig in setting the latter, as the interen-

gaging parts comprised by the teeth 20, 21 and tongues 25, assure of accurate placing and proper positioning of the bars on the blocks.

Moreover, once the bars have been set properly in a transverse direction, they can be moved longitudinally to the desired points, which may be determined by hand scale, or gage or other desired means, without affecting the transverse adjustment in any manner, rectilinear movement only in this direction being permitted. The serrations on the blocks constitute guides for the templet bars during longitudinal adjustment and prevent swinging movement thereof.

The work to be operated on may be held upon the bed plate between the blocks in any desired manner and, as the fixtures employed for this purpose will vary according to the work being operated on, I have not shown any of such fixtures in the drawings, although I have shown the opposing faces of the blocks provided with T-slots, 40 and 41, for securing certain fixtures in position. In Figs. 5, 6 and 7, I have shown an attachment by means of which varying spacing of the guiding teeth for the templet bars may be obtained. In this instance, I have shown a block 42, similar to the blocks 3 and 4, upon which a plate 43 rests and whose lower surface has serrations 44 similar to those on the block, the plate being slotted, as at 46', to accommodate the binding bolts for the templet bars. Any suitable means may be employed to fasten the plate to the block. The upper surface of the plate 43 has serrations 45 spaced according to a different scale. The templet bars, indicated at 46, have on one face tongues 47 spaced to fit the serrations in the block, and on the other side has tongues 48 spaced to fit the serrations 45 in the plate. In this case, the washers 49 interposed between the binding nuts 50 and the templet bars are grooved on their undersides, as shown, to fit the tongues on the bars, different washers being employed as the bars are reversed.

In Fig. 8 I have shown a modified manner in which the blocks 3 and 4 may be arranged on the bed plate. The blocks are here placed in alinement on the bed plate 1 end to end instead of facing toward one another. In this arrangement the lugs 5 and 6 are removed from the blocks and the blocks may be secured in position by threading the screws 7 and 8 into suitable holes in the bed plate which may be provided with a groove 51 to receive tongues 52, 53 on the blocks to hold the latter in alinement.

The manner of using the jig will, it is thought, be apparent from the foregoing description, the templet bars being moved transversely over the teeth to the desired spacing or positioning that the holes are to have in one direction and then moved longi-

tudinally until the bushings are in the proper position over the work, it being impossible for the bars to move from their transverse positioning while the longitudinal adjustment is effected.

As various changes might be made in the construction and application of the device without departing from the spirit of the invention the right is reserved to all changes and modification as come within the scope of the appended claims.

What I claim is:—

1. In a jig, in combination, a templet member, a support on which said member is mounted, said support presenting a plurality of positioning devices for said templet member spaced transversely according to a predetermined scale and adapted to permit of longitudinal adjustment of the templet member thereon.

2. In a jig, in combination, a block provided with tool directing means, a templet bar mounted directly on said block, said block and bar having inter-engaging parts adapted to permit of adjustment of said templet bar both transversely and longitudinally of itself, said inter-engaging parts preventing transverse movement of the tool directing means on the templet bar during longitudinal adjustment thereof.

3. In a jig, in combination, a bed plate, a pair of opposed blocks mounted thereon and adapted to confine the work to be operated on therebetween, longitudinally and transversely adjustable templet bars upon said blocks, said bars projecting over the space between the blocks.

4. A jig comprising, in combination, a bed plate, a pair of opposed blocks thereon, said blocks being relatively adjustable toward and away from one another, and templet bars upon said blocks, said blocks and bars having cooperating teeth spaced according to a predetermined scale.

5. In a jig, in combination, a bed plate, a pair of opposed blocks adapted to confine the work to be operated on therebetween, a plurality of templet bars upon said blocks, means whereby a positive positioning of a templet bar on one block in alinement with a templet bar on another block may be effected, said means permitting longitudinal adjustment of said templet bars on said blocks.

6. A jig comprising, in combination, a bed plate, a block thereon, and a plurality of templet bars upon said block, said block and bars having interengaging parts whereby relative positioning of the bars transversely of themselves according to a predetermined scale may be effected, said interengaging parts permitting longitudinal adjustment of the templet bars.

7. A jig comprising, in combination, a bed plate, a block thereon, and a plurality

of templet bars upon said block, the top surface of said block being formed with serrations and said templet bars having complementary parts whereby spacing of the bars according to a predetermined scale may be effected.

8. A jig comprising, in combination, a bed plate, a pair of similar blocks thereon, said blocks being adapted to be arranged in alinement or in opposed angular positions with relation to one another on said bed plate, and templet bars mounted upon said blocks.

9. In a jig, in combination, a templet bar, a support on which said bar is mounted, said support presenting a plurality of guides spaced transversely according to a predetermined scale and adapted to receive said templet bar, said templet bar being longitudinally adjustable in said guides, and said guides being adapted to retain said bar against transverse or swinging

movement during said longitudinal adjustment.

10. In a jig, in combination, a templet bar, and means for varying the position of said bar in the jig, for the purpose set forth, said means including a block having a serrated face, and complementary parts upon said templet bar adapted to engage said serrated face.

11. A jig comprising, in combination, a bed plate, a pair of opposed blocks thereon, the top surfaces of said block being formed with serrations spaced according to a predetermined scale, the serrations on one block being in alinement with the serrations on the other block, and a plurality of similarly formed templet bars mounted upon said blocks and having longitudinally extending tongues engaging said serrations.

Signed at city, county, and State of New York, this 14th day of October, 1916.

PER F. HOLMGREN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."