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BY A. P. C.

G. E. CUTTAT
LATHES FOR METAL JOBS
Filed March 27, 1941

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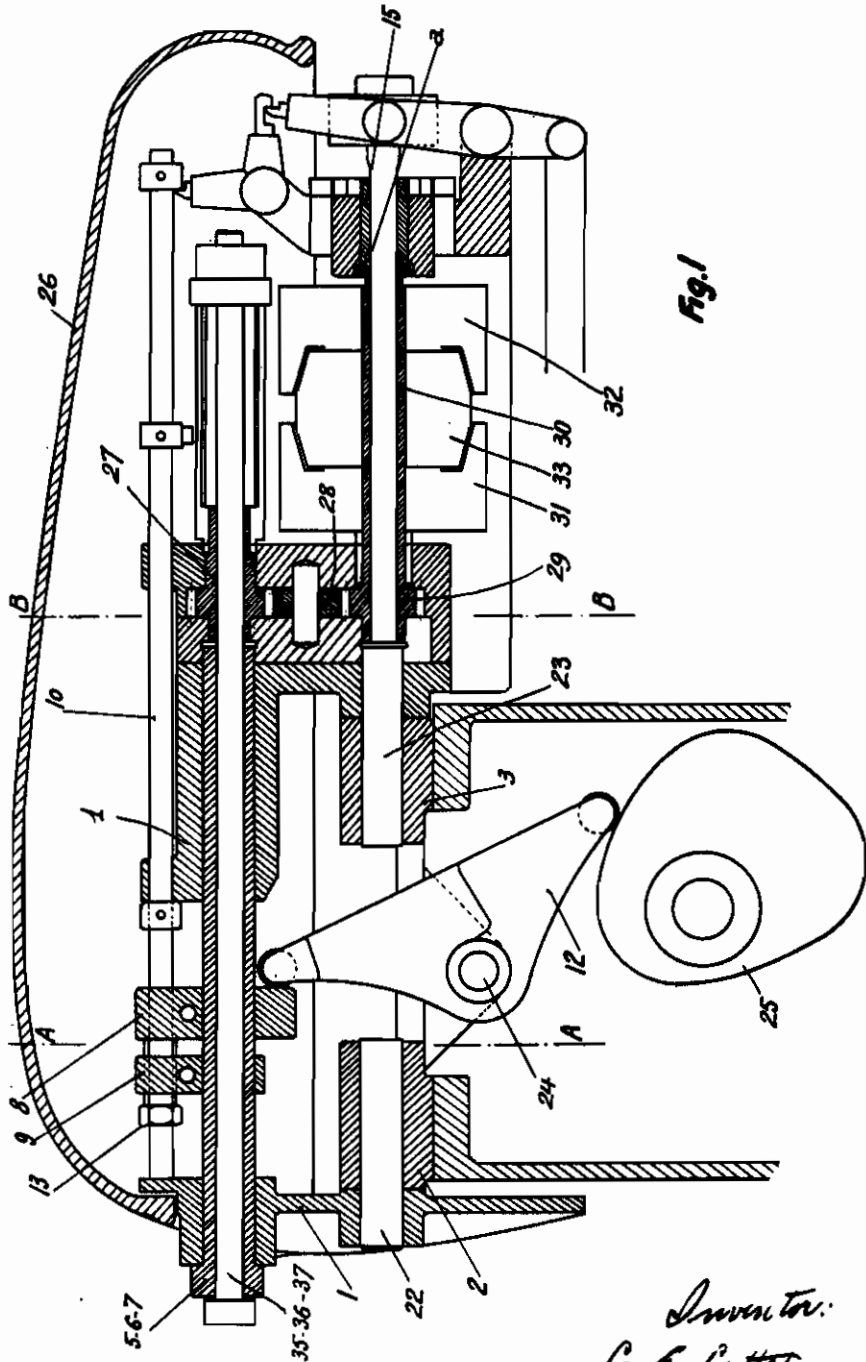


Fig. 1

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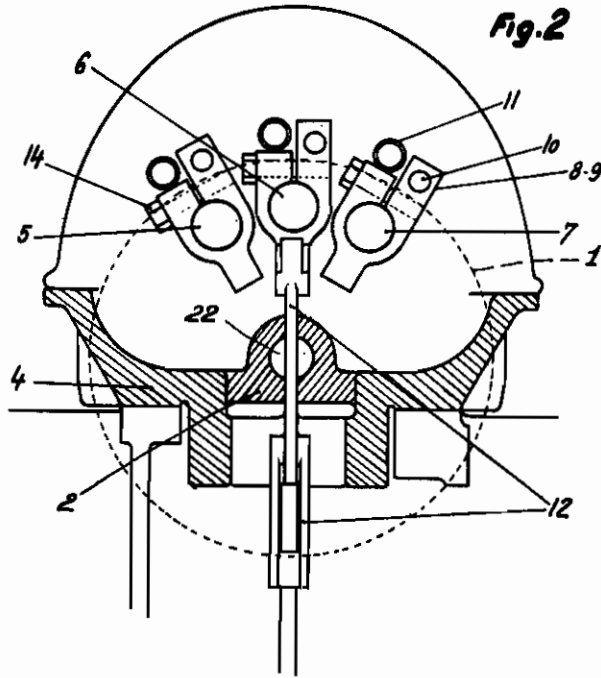
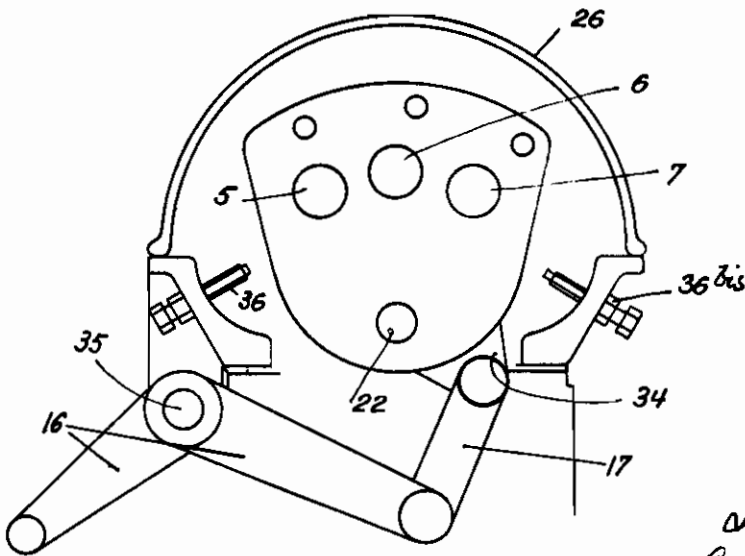


Fig. 4

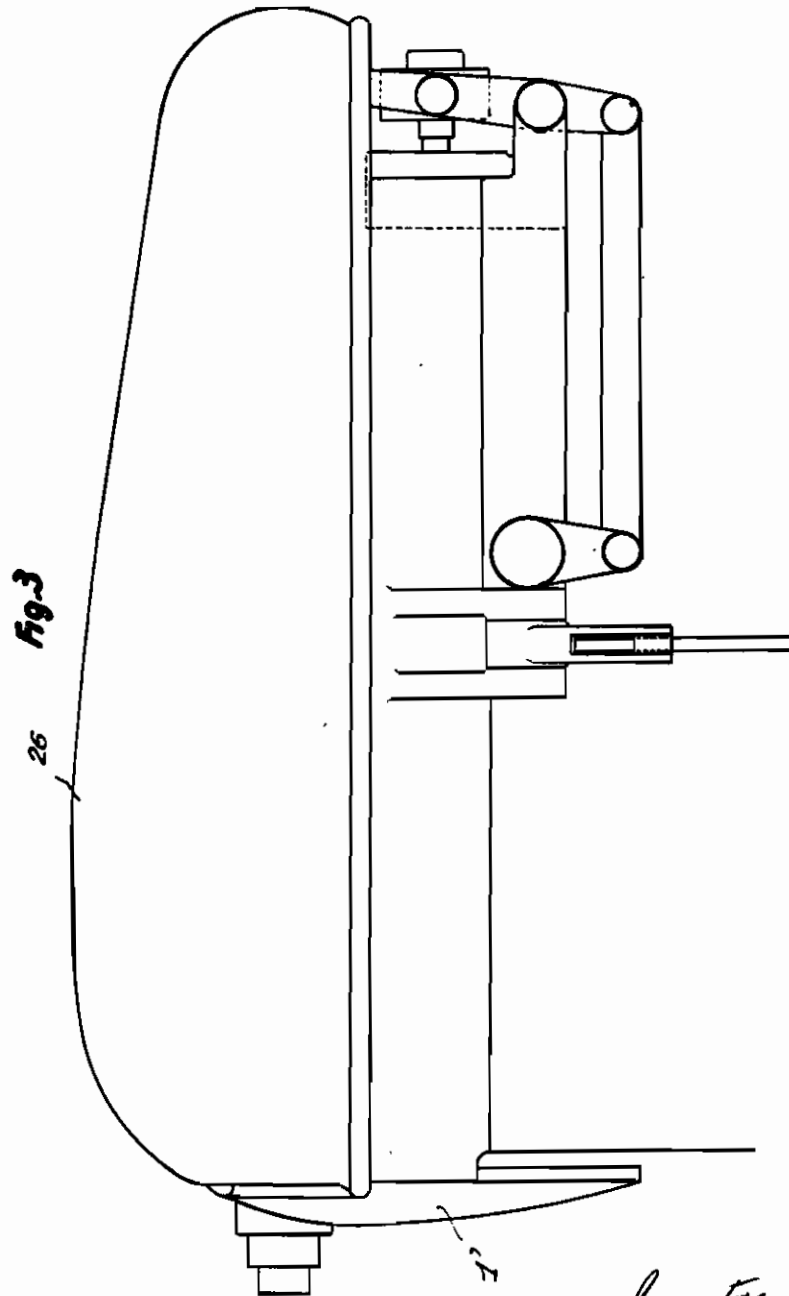


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1943

ALIEN PROPERTY CUSTODIAN

LATHES FOR METAL JOBS

Georges Emile Cuttat, Paris, France; vested in
the Alien Property Custodian

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The present invention concerns lathes for metal jobs and especially automatic and half-automatic lathes with a fixed or movable head stock carrying the job forming bar and controlled by a cam.

The object of the invention is a device for "setting" the job in position, with multiple spindles, of the type in which any of said spindles may be set into the work position by a rocking movement followed by a longitudinal displacement.

For this, the spindles are mounted in a rocking body permitting to bring each of them into working position. When this working position has been attained, the corresponding spindle receives its longitudinal motion from a control lever actuated by a cam.

According to the present invention, the rocking spindle carrier comprises at its front side a shield containing the main casing of the upper part of the machine and protecting the latter against introduction of any foreign bodies such as metal strips, oil etc. into the mechanism.

The spindles may be caused to rotate each separately or all together by a drive mounted on the pivoting axis, and the rotation of the spindles may also be possible in both directions.

Other characteristics of the present invention will become apparent from the following description of an embodiment chosen by way of example and illustrated on the joined drawings, in which:

Figure 1 is an elevation in section along the axis,

Figure 2 is a transverse section substantially along line A—A of Figure 1,

Figure 3 is an outside view in front elevation, and

Figure 4 is a transverse section substantially along line B—B of Figure 1.

The apparatus comprises essentially a spindle-carrying body 1 rocking about axes 22, 23 carried by supports 2, 3 in a bed 4 rigidly fixed to the lathe bench fitted with the apparatus.

The body 1 is provided with a number of tool-carrying spindles arranged along a circle, the centre of which is constituted by the axis 22, 23. The number of spindles may, of course, be varied at will. Three spindles have been shown here, referred to as 5, 6 and 7. The spindles may move longitudinally in bearings of body 1.

On the spindles are fixed a number of primary driving pins 8 and secondary driving pins 9, sliding along guiding bars 10. The pin 8 transmits to the spindle its longitudinal displacements. For this, it is actuated by an arm of lever 12 pivoted in 24 to the frame and receiving itself its motion from the cam 25.

The return motion of the spindles in the direction opposite to that into which they are driven by lever 12, is obtained by a spring 11 (Figure 2) parallel to the bar 10.

The adjustment of the spindle stroke is ob-

tained by the cooperation of the secondary pin 9 with the micrometer screw 13 (Figure 1). In the adjusted position, the pin 8 and the secondary pin 9 are blocked by screws 14 (Figure 2).

At its front part, the spindle carrying body 1 has substantially the form of a disc forming a sort of convex shield 1', the curvature of which is extended by the upper casing 26 of the apparatus. The arrangement formed by the shield of the body and by the upper casing constitutes a sort of block protecting the machine from metal strips or any other foreign bodies that might be projected upon the machine. The upper casing 26 is mounted on hinges or fixed by screws, thereby permitting the visit of the inside and an easy access to all screws and stops ensuring the adjustments of the longitudinal and transverse motions.

If the spindles are to be rotatable, the references 5, 6 and 7 (Figure 1) are only directed to the bushings of the inner spindles 35, 36 and 37 which are mounted on not shown bearings.

On any one spindle is keyed a gear 29 integral with a muff 30 set on the fixed pivoting shaft 23. On this muff are freely mounted two pulleys 31, 32 driven in rotation in opposite directions by not shown belts. Between the pulleys 31 and 32 is arranged a clutch member 33 of a known type, slidable without rotation on muff 30. The sliding motion of this member is controlled by a not shown clutch lever. It is clear that according as to whether the member 33 is pushed towards the right or towards the left, the spindle will rotate in one direction or the other, thus permitting to cut right or left handed screw threads.

The muff 30 is supported at the rear by a bearing 15 movable so as to clear a space *a* between itself and the muff, to allow the insertion of the driving endless belts.

The rocking motion of the oscillating body is obtained by means of a known device. The body carrying a shoulder in the form of a fork 34 is provided with a connecting rod 17 actuated by a bent lever 16 pivoting about a point 35 fixed to the machine. The construction is such that the mean contact point on the cam and the point of application of the oscillation force remain in a same plane, thereby excluding any lateral reaction and thus permitting to obtain full precision when setting the apparatus in position for effecting the required centering by alinement of the spindles with the bar to be worked. Stops 38 and 38bis serve to complete the centering of the spindles. The invention is obviously not limited exclusively to the form described and illustrated by way of example, and certain alterations may of course be performed, such as the provision of direct acting levers etc., without departing from the frame of the invention.

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