A. TROSCH.

METAL WORKING FEED MECHANISM.

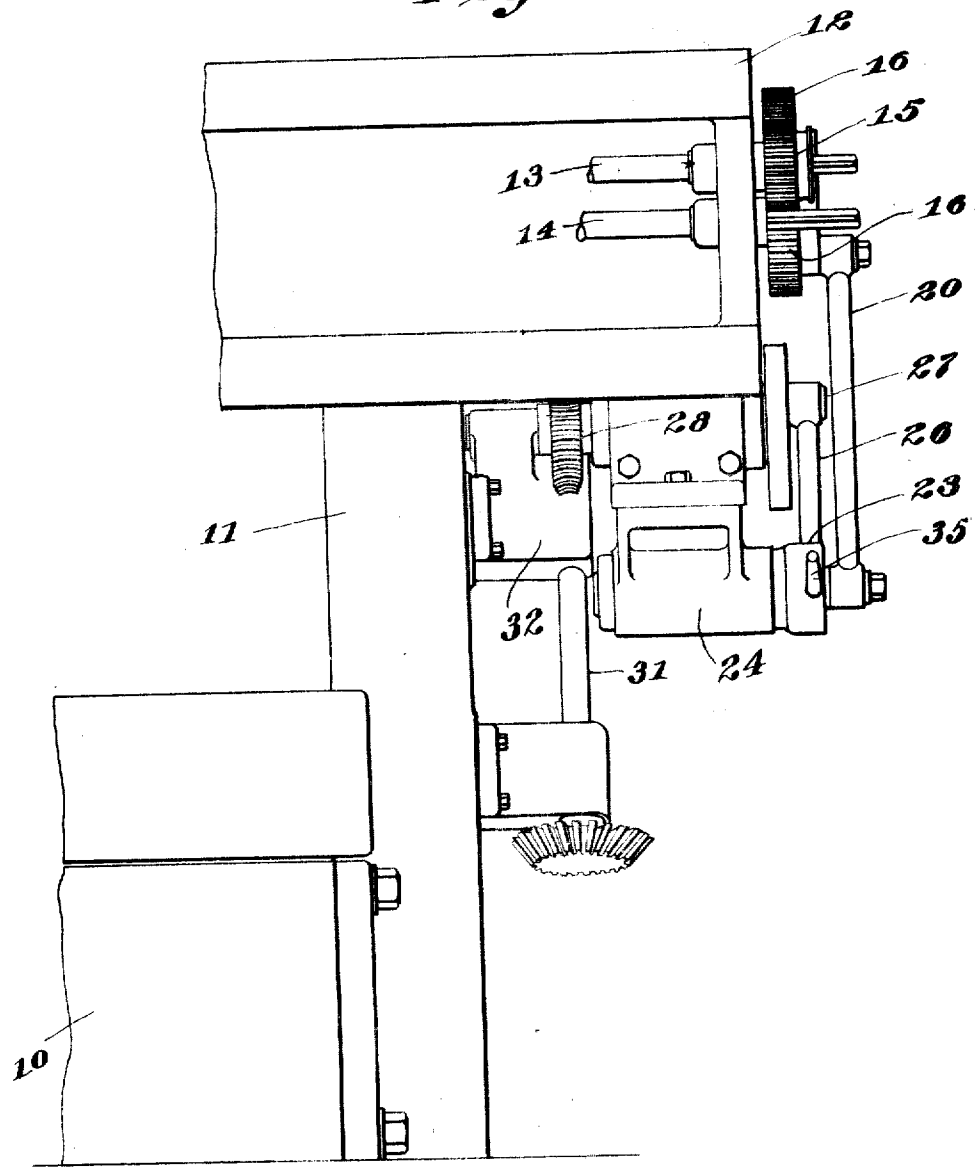
APPLICATION FILED DEC. 13, 1918.

1,336,108.

Patented Apr. 6, 1920.

2 SHEETS—SHEET 1.

Fig. 1.




Inventor
Alfred Trosch
by Clyde L. Rogers
his attorney.

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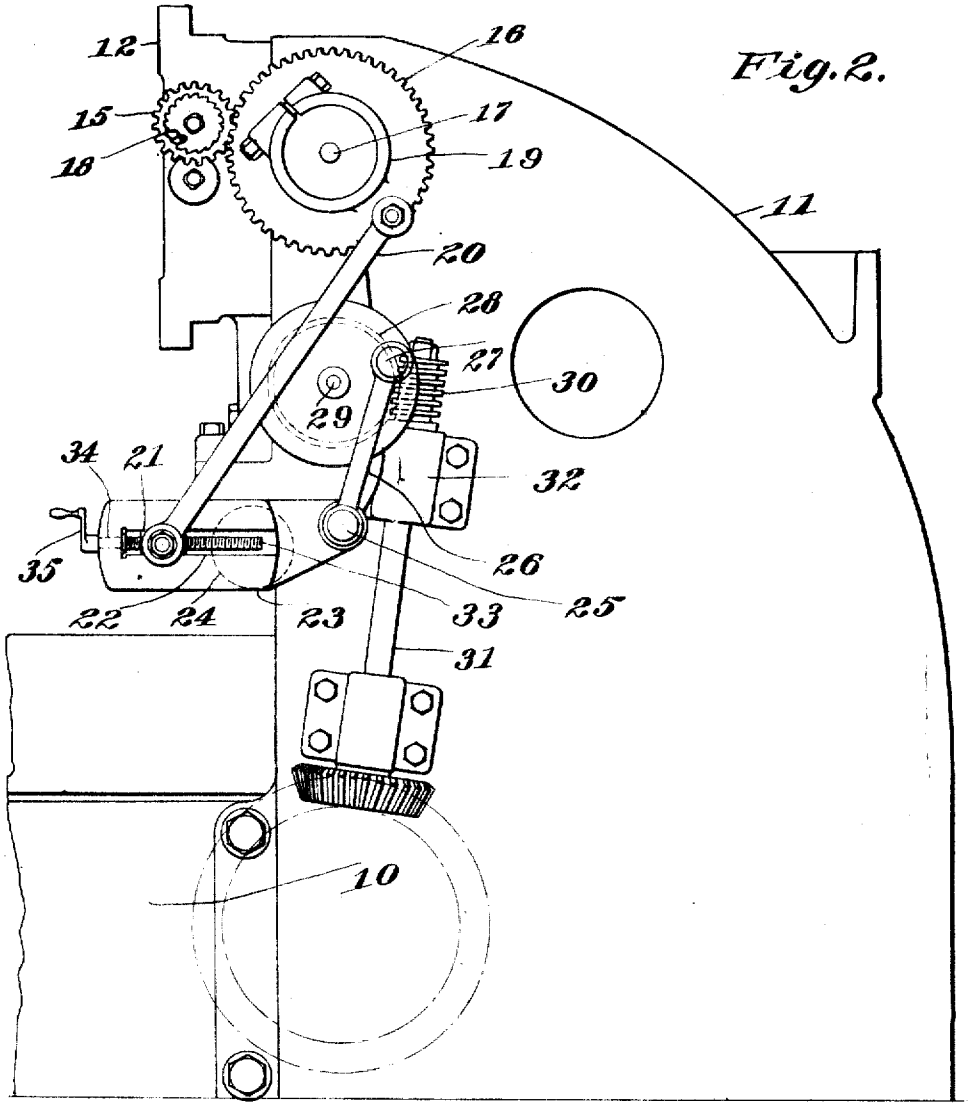
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2 SHEETS—SHEET 2.

*Fig. 2.*




*Inventor:*
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# UNITED STATES PATENT OFFICE.

ALFRED TROSCH, OF ROCHESTER, NEW YORK, ASSIGNOR TO ARTHUR H. INGLE, OF ROCHESTER, NEW YORK.

## METAL-WORKING FEED MECHANISM.

1,336,108. Specification of Letters Patent. Patented Apr. 6, 1920.

Application filed December 13, 1918. Serial No. 266,547.

*To all whom it may concern:*

Be it known that I, ALFRED TROSCH, a citizen of the United States, and resident of Rochester, county of Monroe, State of New York, have invented an Improvement in Metal-Working Feed Mechanisms, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts in each of the several views.

This invention relates to feed connections for metal working machines such as boring mills and the like. The principal object of the invention is to provide improved means whereby such feed connections may be adjusted to vary the rate of feed as required without stopping the machine or otherwise interfering with its operation. The invention is herein illustratively shown as embodied in the connections which transmit a step-by-step ratchet movement to the feed screw of a boring mill or like machine from the continuously driven parts associated with the prime drive of the machine. The foregoing and other objects and advantages of the invention will more fully appear from the following detailed description, and the distinctive features of novelty will be pointed out in the appended claim.

Referring to the drawings:

Figure 1 is a front view showing a portion of a boring mill or like machine equipped with my invention; and

Fig. 2 is a side view thereof.

10 indicates the table supporting base of the machine equipped with an upright column structure 11 at each side of the base and supporting a cross rail structure 12 which serves as a slide way mounting for the tool saddle (not shown). In this cross rail structure is journaled a feed screw 13 for the horizontal feed and a feed shaft 14 for the vertical feed of the tool holder in the saddle as usual, this screw and shaft being selectively operable by a pinion connection 15 driven by a gear 16 journaled on a stud shaft 17 carried by the column. The gear 15 is turned step-by-step by a pawl and ratchet device 18 by means of gear 16 from a yoke arm 19 mounted concentrically with said gear and operatively connected with one end of a pitman 20.

In accordance with my invention the other or lower end of this pitman is equipped with a pivot bearing block 21 which is fitted to slide in a slot way 22 thereof which extends lengthwise of a lever arm 23 pivoted in a bracket bolted to the crossrail structure at 24. The outer extension of this lever arm has pivoted thereto at 25 a pitman 26 having a crank pin connection 27 to a worm wheel gear 28 journaled at 29 to a stud shaft on the upright. The worm gear 28 is engaged by a worm 30 fixed on the upper end of a constantly driven shaft 31 which is journaled to the column as seen at 32. This shaft 31 which is a feature of present standard constructions is connected in suitable manner (not shown) to be driven constantly from the prime drive shaft of the machine and in unison with the table or bed movement. The pivot block 21 has in threaded engagement therewith a screw shaft 33 the outer end of which is swiveled in the lever arm 23 as seen at 34 and equipped with a handle 35. In use the worm wheel 28 is constantly driven from the shaft 31 and by the pitman connection 26 oscillates the lever arm 23. This oscillation is transmitted through the pitman 20 and the yoke arm 19 to impart a step-by-step forward movement to the feed gears 15, 16 through the ratchet device 18. The rate of feed movement thus transmitted will be determined by the adjustment of the pivot block 21 in the slot 22 of the arm 23 and this may be adjusted with precision by turning of the crank handle 35. It is to be particularly noted that with the present construction the handle 35 being carried by the arm 23 is only oscillated through a relatively small arc in the operation of the machine and being relatively close to the pivot 24 of said arm, its range of oscillation is comparatively small and thus it results that the screw shaft 33 may be readily turned to adjust the rate of feed during the operation of the machine and without in any wise interfering therewith. Further the handle 35 projecting from the forward end of the arm 23 as shown, is in a particularly convenient and accessible position from the normal station of the operator. I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claim rather than to the foregoing

description to indicate the scope of the invention.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

Metal-working feed mechanism, comprising a feed shaft extending transversely of the machine, equipped with a pawl and ratchet device for imparting step-by-step movement thereto, a gear engaging said pawl and ratchet device having a pitman connected therewith to oscillate the same, a pivoted lever having a longitudinal slot therein in which an end of said pitman is mounted for adjustment toward and from the lever pivot, an adjusting screw mounted in said lever for adjusting said pitman end and arranged at the side of the machine for convenient actuation, and constantly driven gear connections having a second pitman connected therewith and also engaged with said lever for imparting a swinging movement thereto.

In testimony whereof I have signed my name to this specification.

ALFRED TROSCH.