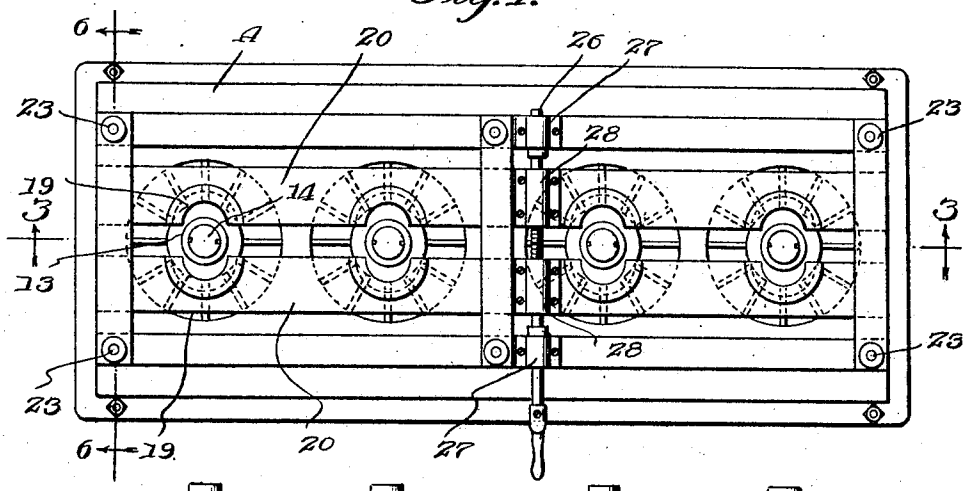
Jan. 20, 1925. 1,523,894

W. POHLE

MULTIPLE REBORING MACHINE

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Fig. 1.



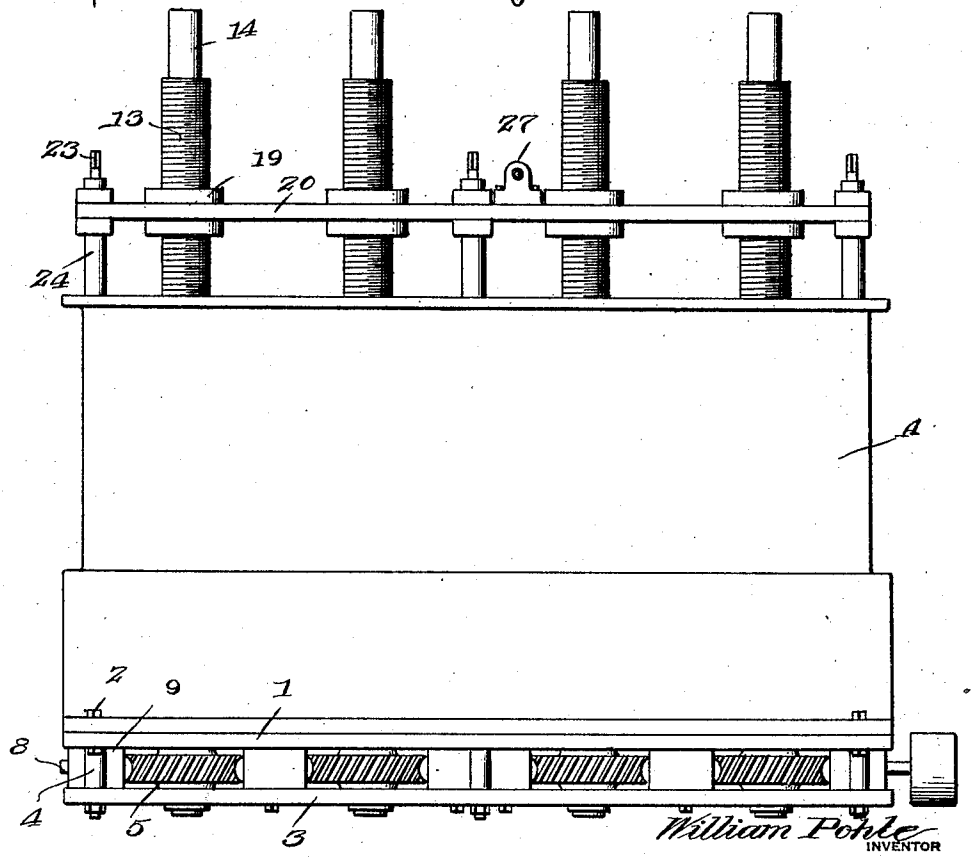


Fig. 2.

William Pohle
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WITNESS:

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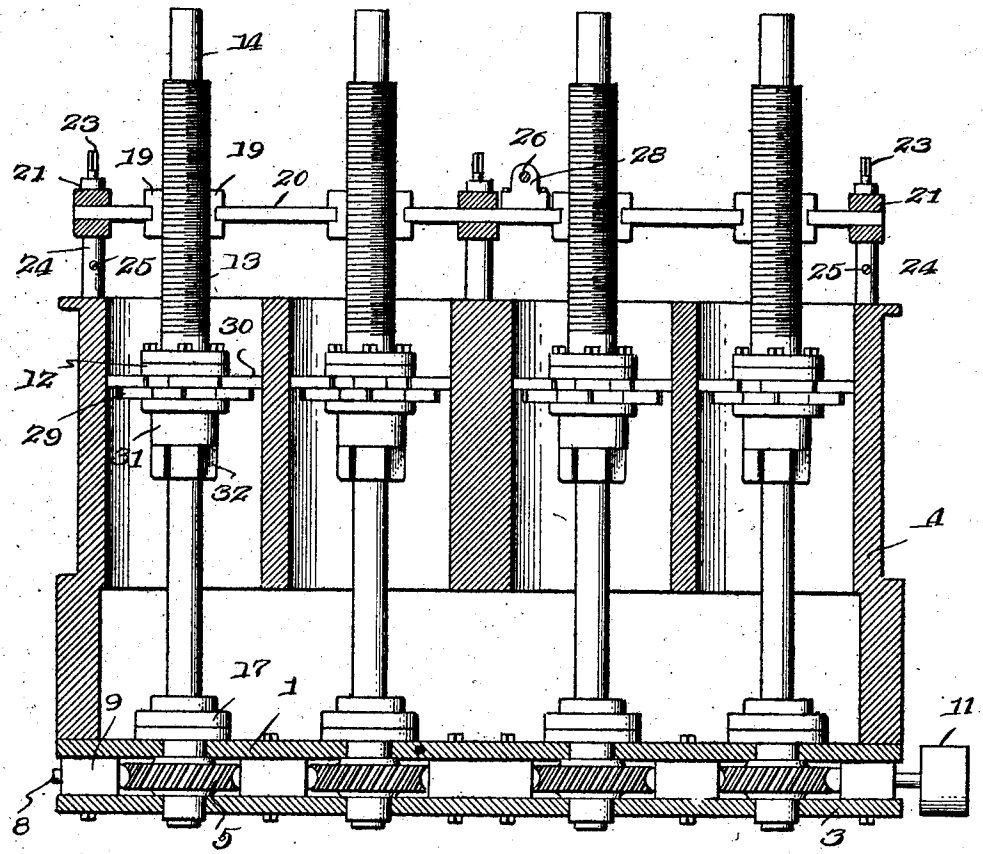
Jan. 20, 1925. 1,523,894

W. POHLE

MULTIPLE REBORING MACHINE

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Fig. 3.



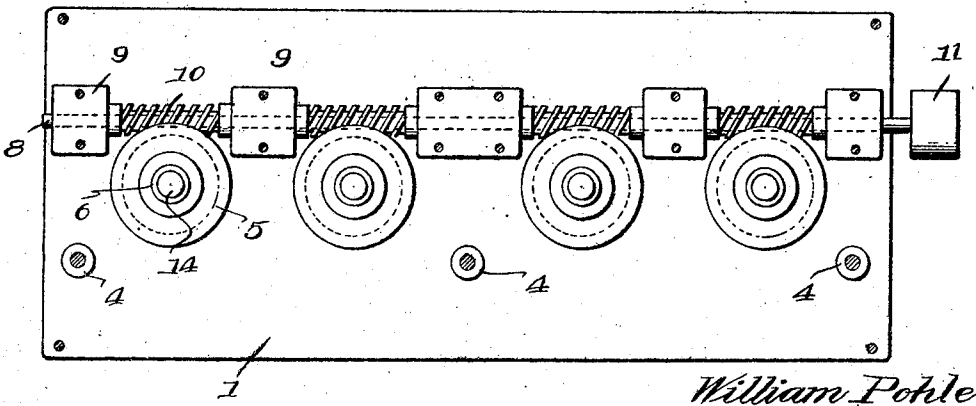


Fig. 4.

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Jan. 20, 1925. 1,523,894

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MULTIPLE REBORING MACHINE

Filed Sept. 17, 1923 3 Sheets-Sheet 3

Fig. 5.

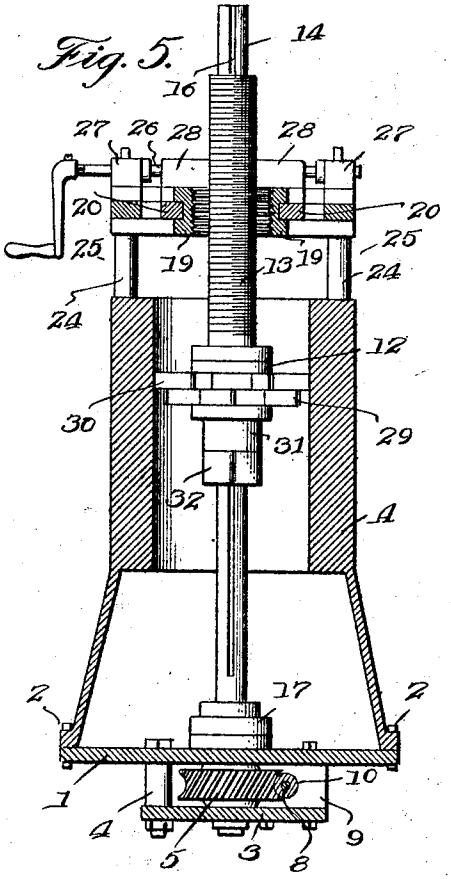


Fig. 6.

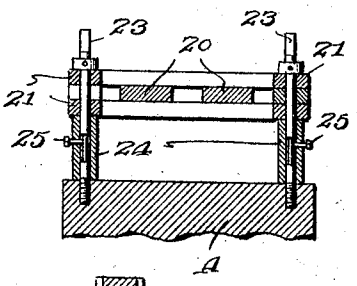


Fig. 7.

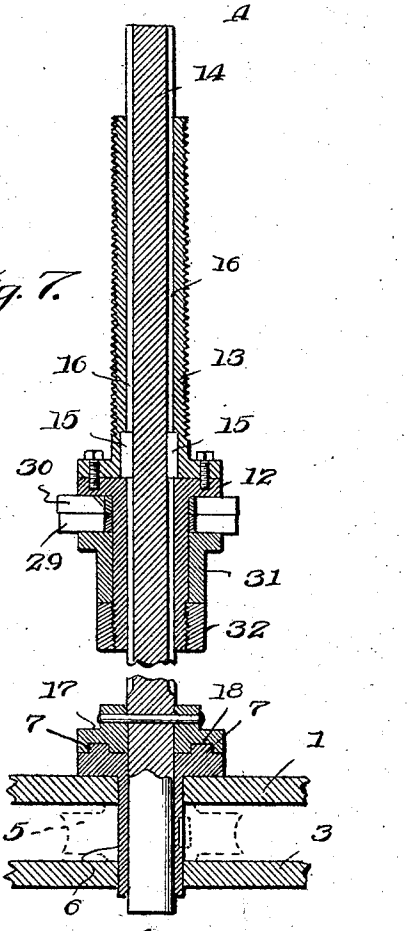


Fig. 8.

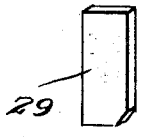
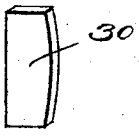


Fig. 9.



William Pohle
INVENTOR

BY Victor J. Evans
ATTORNEY

I. M. Evans
WITNESS:

Patented Jan. 20, 1925. 1,523,894

UNITED STATES PATENT OFFICE.

WILLIAM POHLE, OF AURORA, INDIANA.

MULTIPLE-REBORING MACHINE.

Application filed September 17, 1923. Serial No. 663,224.

To all whom it my concern:

Be it known that I, WILLIAM POHLE, a citizen of the United States, residing at Aurora, in the county of Dearborn and State of Indiana, have invented new and useful Improvements in Multiple-Reboring Machines, of which the following is a specification.

This invention relates to a cylinder boring machine, the general object of the invention being to provide means for boring all the cylinders of a block at one time.

Another object of the invention is to provide means whereby the device can be easily and quickly attached to a cylinder block.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a plan view showing the invention in use.

Figure 2 is a side view.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a horizontal sectional view showing the gearing.

Figure 5 is a transverse sectional view.

Figure 6 is a section on line 6—6 of Figure 1.

Figure 7 is a sectional view through one of the shafts and its associated parts.

Figures 8 and 9 are views showing the knives used with the device.

In these views, 1 indicates a base plate upon which the cylinder block, shown at A, is bolted by the bolts 2. A bottom plate 3 is bolted to the base plate and is spaced therefrom by the sleeves 4. A plurality of worm gears 5 are arranged in the space between the base and the bottom plate, there being a gear for each cylinder of the block to be bored. These gears are provided with hollow hubs 6 which are journaled in the base and bottom plate and each hub carries pins 7 at its upper end, for a purpose to be hereinafter described. A shaft 8 is arranged in the space between the base and bottom plate and is journaled in the blocks 9. This shaft carries a plurality of worms 10 for engaging the worm gears 5. It is provided with a pulley 11 so that it can be driven from any suitable source of power.

The cutter heads 12 are each bolted to a threaded sleeve 13 which is slidably fastened to a shaft 14 by the keys 15 engaging the key-ways 16 in said shaft. The shafts have their lower ends engaging the hollow hubs of the worm gears and each shaft carries a member 17 which is provided with the sockets 18 for receiving the pins 7 on the hub of the worm gear so that the shaft is connected with the gear and will be rotated therewith. Each sleeve 13 is engaged by a sectional nut 19 and these nuts are carried by the pair of sliding plates 20 which are slidably held in a frame 21 which is supported from the cylinder block by means of the bolts 23 and the sleeves 24 which are adjustably mounted on the bolts by means of the set screws 25. The plates are moved towards and away from each other by the screw shaft 26 having its ends engaging the bearings 27 carried by the frame 21, the right and left hand screw threads on said shaft engaging the nuts 28 on the plates. Each cutter head is provided with two sets of knives, the set 29 being arranged to make the first cut and the set 30 making the finishing cut. These knives are held in place by the sleeve 31 which is fastened to the head by the nut 32.

From the foregoing it will be seen that all the cylinders are rebored at the same time and it will of course be understood that as many cutters will be used as there are cylinders in the block. The cutters and their associated parts can be easily and quickly placed in position or removed by adjusting the plates 20 by means of the screw shaft 26 so as to remove the sectional nuts from the threaded sleeves or to place the nuts in engagement with the sleeves. The shafts can easily be removed from the worm gears by lifting them upwardly to remove the socket carrying members from the pins. When the drive shaft is being rotated, its movement will be communicated to the shafts 14 which will cause the sleeves and cutting heads to revolve by reason of the keyed connection between the shafts and the sleeves. The sleeves engaging the nuts will act to feed the cutting heads down-

wardly upon the shafts and thus cause the cutting knives to gradually feed downwardly through the cylinders.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:—

1. A device of the class described comprising a base, means for connecting a cylinder block therewith, a plurality of gears carried by the base, means for rotating the gears simultaneously, a plurality of shafts, means for detachably connecting each shaft with the gears, a cutter head carried by each shaft, a threaded sleeve connected with each cutter head and having sliding connection with the shaft, stationary nuts engaging the sleeves, each nut being formed in sections and slidable means for holding the sections in engagement with the sleeves, such means consisting of a pair of plates for engaging the nuts, means for slidably supporting the plates and manually operated means for adjusting the plates towards and away from each other.

2. A device of the class described comprising a base, means for connecting the same with the bottom part of the cylinder block, a plurality of gears carried by the base and having hollow hubs, means for rotating the gears simultaneously, a frame, bolts and sleeves for connecting the same with the top of the cylinder block, a pair of sliding plates in the frame, sectional nuts carried by the plates, means for adjusting the plates towards and away from each other, a plurality of shafts having key-ways therein and having their lower ends adapted to engage the hollow hubs of the gears, pins and sockets for connecting the shafts with the gears, a cutter head on each shaft, a threaded sleeve connected with each head and keys carried by each sleeve and engaging the grooves in each shaft.

3. A device of the class described comprising a base, means for connecting the same with the bottom part of the cylinder block, a plurality of gears carried by the base and having hollow hubs, means for rotating the gears simultaneously, a frame, bolts and sleeves for connecting the same with the top of the cylinder block, a pair of sliding plates in the frame, sectional nuts carried by the plates, means for adjusting the plates towards and away from each other, a plurality of shafts having key-ways therein and having their lower ends adapted to engage the hollow hubs of the gears, pins and sockets for connecting the shafts with the gears, a cutter head on each shaft, a threaded sleeve connected with each head, keys carried by each sleeve and engaging the grooves in each shaft, said sleeves being engaged by the sectional nuts when the plates are moved towards each other.

In testimony whereof I affix my signature.

WILLIAM POHLE.