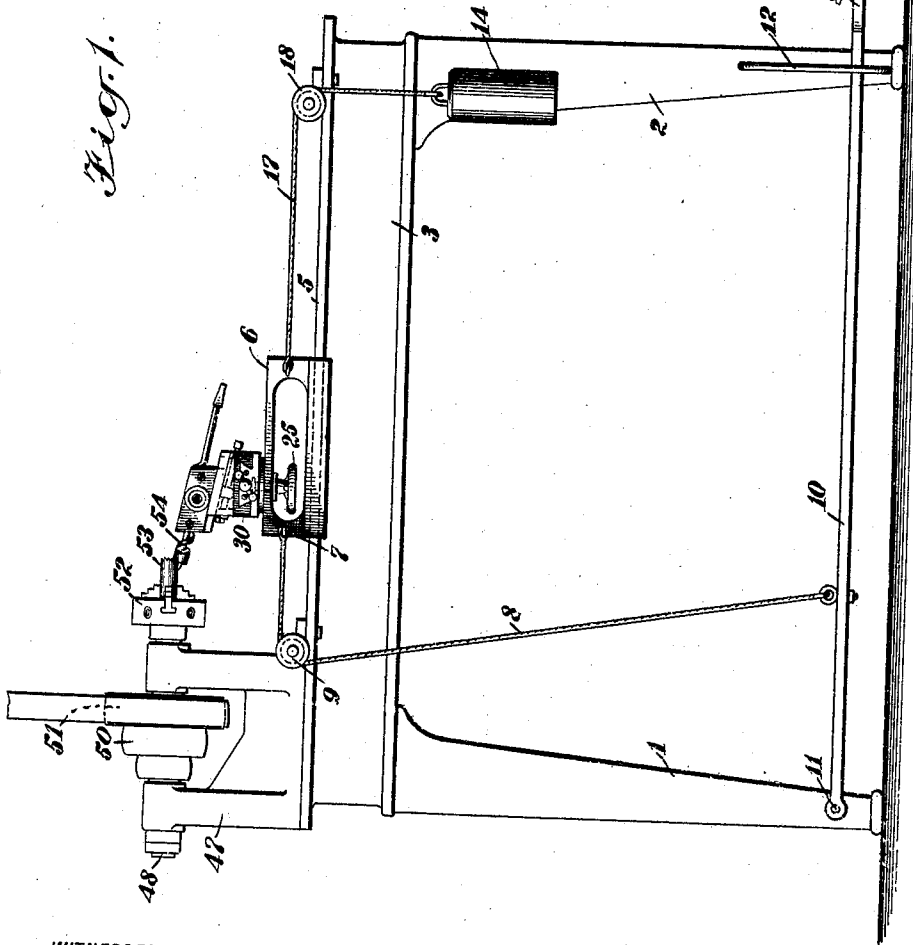
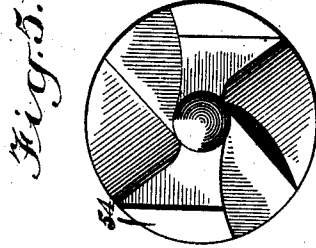
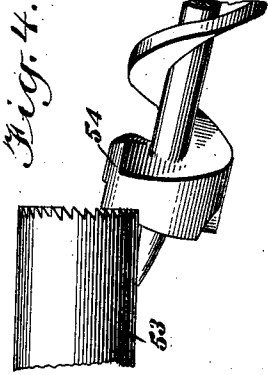


J. A. PILCHER.
 AUTOMATIC BIT PITCHER.
 APPLICATION FILED JUNE 8, 1908.

991,362.

Patented May 2, 1911.

2 SHEETS-SHEET 1.



WITNESSES

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2 SHEETS-SHEET 2.

Fig. 2.

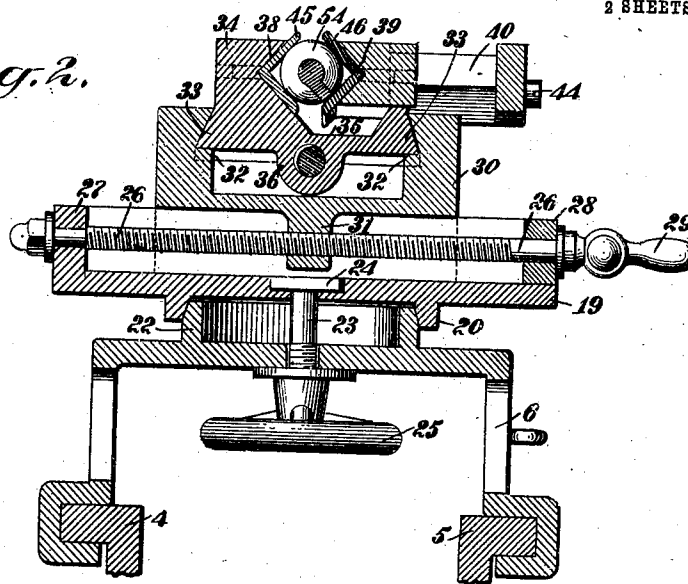
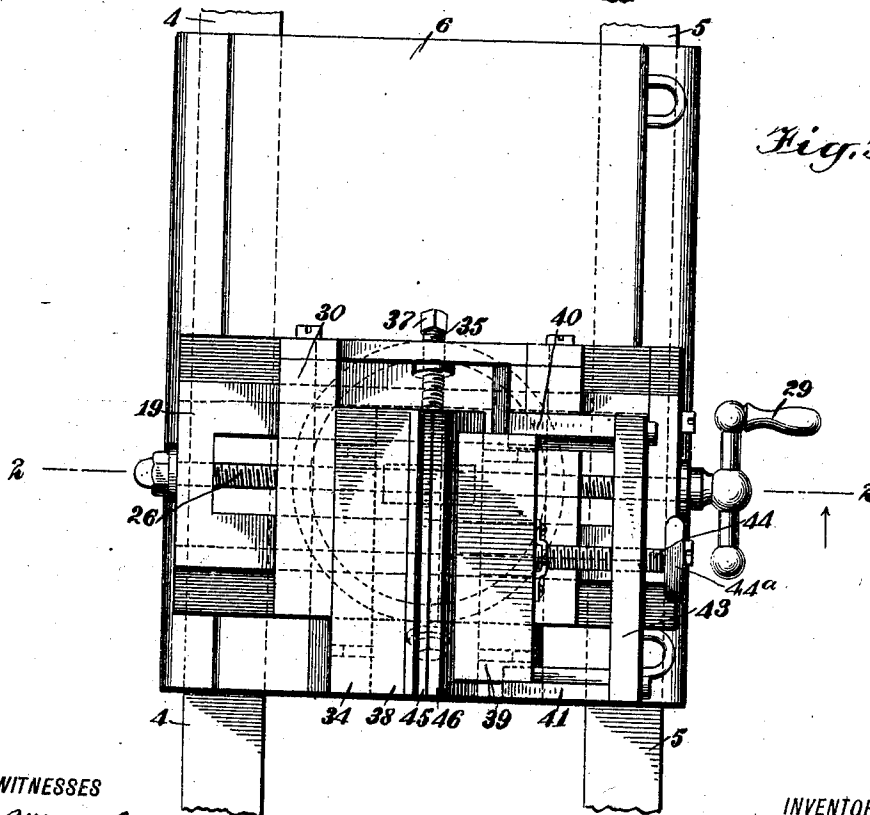


Fig. 3.



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JAMES A. PILCHER, OF JACKSON, OHIO.

AUTOMATIC BIT-PITCHER.

991,362.

Specification of Letters Patent.

Patented May 2, 1911.

Application filed June 8, 1909. Serial No. 500,874.

To all whom it may concern:

Be it known that I, JAMES A. PILCHER, a citizen of the United States, and a resident of Jackson, in the county of Jackson and State of Ohio, have invented a new and Improved Automatic Bit-Pitcher, of which the following is a full, clear, and exact description.

This invention relates to a milling machine, which is adapted to hold bits or the like, so as to give them the proper pitch.

The object of the invention is to provide a device which will be simple in construction, simple and accurate in its operation, and at the same time strong and durable.

A further object of the invention is to provide an inclined work-support, which will be readily and quickly adjusted, and which will feed the work positively at the proper angle to the cutting or milling tool.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claim.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a side view in elevation, of my device; Fig. 2 is a vertical transverse section on the line 2—2 in Fig. 3; Fig. 3 is a top plan view of the work-support; Fig. 4 is an enlarged detail view, showing the working relation of the milling tool to the bit being cut; and Fig. 5 is an enlarged end view of the bit, showing it partially milled.

Referring more particularly to the separate parts of the device, 1 and 2 indicate suitable supporting legs for a bed 3, which may be of any suitable form and material. The bed 3 is provided with suitable ways 4 and 5, on which is adapted to slide longitudinally of the bed, a suitable carriage 6. In order to cause the sliding motion of the carriage 6, there is provided a suitable attachment 7 at one end, to which is secured a suitable flexible connection 8, which passes over a guide-pulley 9, and is attached at its opposite end to a foot-lever 10. This foot-lever 10 is preferably pivoted at 11 to one of the legs 1 of the frame, and extends in the opposite direction through a guide 12 beyond the end of the frame, to form a suitable foot-pedal 13. By this lever and con-

nection, the carriage may be forwarded, and in order to return it to its original position, there is provided a suitable counter-weight 14, which is connected to the carriage 6 in any suitable manner, as by means of a flexible connection 17, which passes over a suitable guide-pulley 18, rotatably supported in any well-known manner on the bed 3. This mechanism just described allows for the longitudinal adjustment of the carriage and the parts thereon. In order to obtain a rotary adjustment, there is provided a rotor 19, which has a beveled downwardly-extending circular flange 20, which is adapted to engage a beveled upwardly-extending circular flange 22 on the carriage 6. By this arrangement, the rotor 19 may be revolved on the carriage 6 through a complete circle. In order, however, to lock it in its adjusted position, there is provided a pin 23, which has a head 24 on one end, which engages the inside of the bottom of the rotor 19, and which also has a screw-thread on its opposite end, which is engaged by a suitable hand-wheel 25. By rotating the hand-wheel 25, the rotor 19 may be either tightened to or loosened from the carriage 6.

In order to allow for transverse adjustment, there is provided a threaded shaft 26, which is rotatably supported in the up-standing sides 27 and 28 on the rotor 19, and is adapted to be operated by a suitable hand-crank 29. The part which is adjusted by this screw 26 consists of a suitable carrier 30, which has a downwardly-extending flange 31, having a threaded opening therein, which is adapted to engage the screw 26. By this means, the carrier may be adjusted back and forth on the rotor 19. The carrier 30 has a sloping top, and also has inclined ways 32 therein, which are inclined to a horizontal plane at an angle of about twelve degrees, and are adapted to form guides for flanges 33 on a work-support 34.

In order to manipulate the work-support 34 back and forth in the inclined ways 32, there is provided a suitable screw-shaft 35, which engages in a screw-threaded opening in a depending flange 36 on the work-support 34, and is adapted to be operated in any suitable manner, as by means of a squared head 37. The screw-shaft 35 is rotatably supported in any well-known manner in the carrier 30.

In order to securely hold the work on the work-support, there is provided a rigid

jaw 38, facing which there is provided a suitable movable jaw 39. The movable jaw 39 slides on suitable guides 40 and 41, which form an extension of the work-support 34, and are connected at their ends by a cross bar 43, with which a screw-shaft 44 has a screw-threaded engagement, said screw-shaft being adapted to reciprocate the movable jaw 39 on the guides 40 and 41, the shaft being provided for this purpose with a suitable operating means 44^a. The jaws 38 and 39 are preferably faced by suitable angle-members 45 and 46, which may be of any suitable material.

The cutting mechanism consists of a frame 47, which is supported in any well-known manner on the bed 3, and has a shaft 48 rotatably supported thereon, which is adapted to be driven by any suitable means, such as a step-pulley 50 and a belt-pulley 51. Secured to the end of the shaft 48, there is provided the usual chuck 52, in which a suitable milling or cutting tool 53 may be secured.

54 indicates a bit which is being milled, and the co-action of the cutting-tool 53 therewith is clearly shown in Figs. 4 and 5.

The operation of the device will be readily understood from the above description. The work-support 34 is adjusted by means of the carriage 6, the rotor 19 and the carrier 30, in an adjustment suitable for the bit to be milled. The milling mechanism is then started, and the carriage advanced up to the tool 53 by pressing on the foot-lever 10. By releasing the pressure of the foot on the lever 10, the counterweight 14 will automatically withdraw the carriage 16 and the work with it.

There is thus provided a simple and efficient device, which permits of accurate adjustments for different classes of work, and which may be readily and easily operated.

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

In a device of the class described, the combination with a horizontal bed, of a carriage slidable horizontally on said bed, a tool fixed so as to rotate about a horizontal axis without end motion, a carrier connected to said carriage, having a horizontal bottom and a top inclined at a fixed angle to said bottom, and also having inclined ways parallel to said top and extending at a fixed angle to said bottom, said carrier having its top and bottom formed integral with each other, a work-support having vertical sides and inclined top and bottom corresponding to the inclination of said ways, jaws on said work-support extending at a fixed angle of inclination to the horizontal axis of said tool and adapted to retain work at a fixed angle to the horizontal axis of said tool, means for feeding said work-support along a line extending at a fixed inclination to said horizontal axis of said tool, and means for moving said work-support toward said tool in a horizontal direction.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES A. PILCHER.

Witnesses:

F. K. RIDENOUR,
J. O. RIDENOUR.