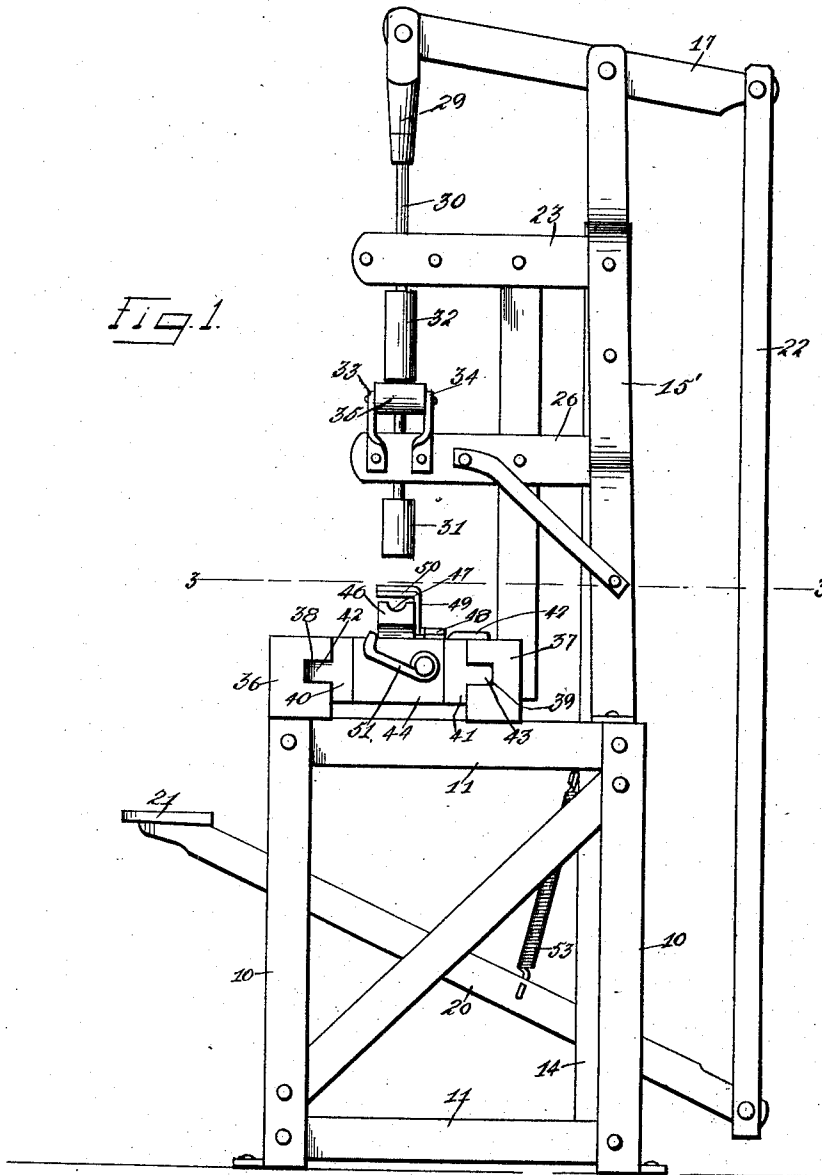


R. L. McDANIEL.
BORING MACHINE.
APPLICATION FILED FEB. 18, 1910.

1,016,283.

Patented Feb. 6, 1912.
3 SHEETS—SHEET 1.



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Henry D. Bright

By

Charles C. Chandler

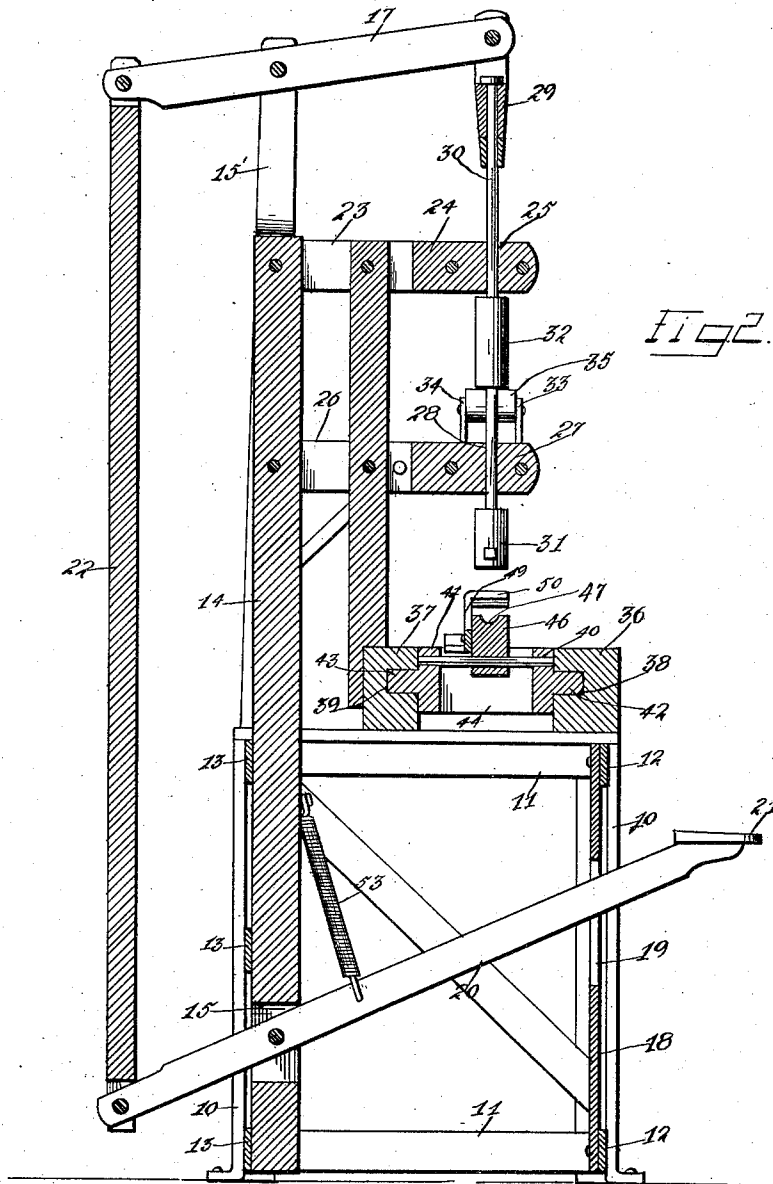
Attorneys

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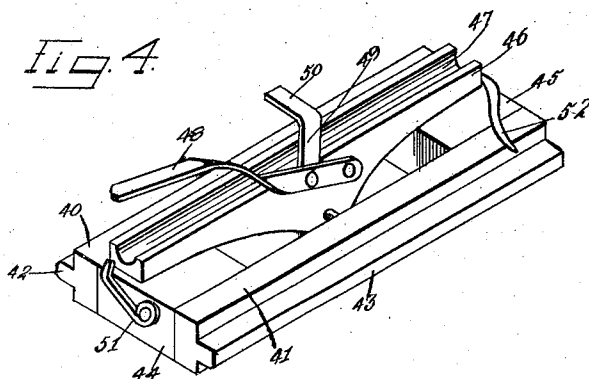
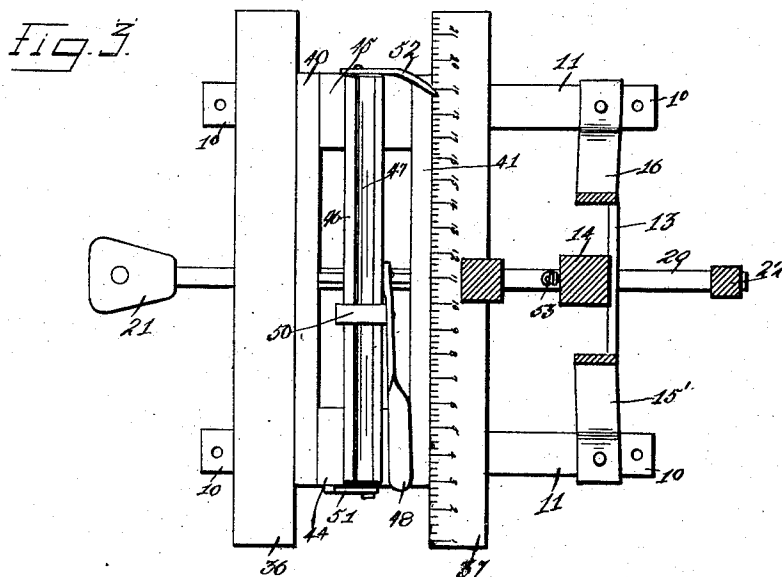
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ROBERT LEE McDANIEL, OF CAMDEN, MISSISSIPPI.

BORING-MACHINE.

1,016,283.

Specification of Letters Patent.

Patented Feb. 6, 1912.

Application filed February 18, 1910. Serial No. 544,719.

To all whom it may concern:

Be it known that I, ROBERT L. McDANIEL, a citizen of the United States, residing at Camden, in the county of Madison, State of Mississippi, have invented certain new and useful Improvements in Boring-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to boring machines.

The object of the invention resides in providing a machine of the character described in which the shaft which carries the boring implement is directly attached to a belt connection for driving same; said machine being further provided with means whereby said belt is constantly maintained horizontally during the vertical movement of said shaft to effect the application and release of the boring implement carried thereby.

Another object of the invention consists in so constructing the work support that same may be adjusted transversely of the supporting frame of the machine so as to apply the boring implement at various points throughout the work without in any manner removing the work from the support.

A still further object of the invention resides in providing means whereby the work support may be tilted and disposed at other than a right angle to the boring implement to effect the boring of the work in a slanting direction.

With the above and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully described and set forth in the claims.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters of reference denote corresponding parts in the several views; and in which,

Figure 1 is a side elevation of a boring machine constructed in accordance with the invention; Fig. 2, a vertical longitudinal section of same; Fig. 3, a section on the line 3—3 of Fig. 1 and, Fig. 4, a detail perspective view of the adjustable work support.

Referring to the drawings, the machine is shown as comprising a skeleton base which includes corner members 10, side members 11, front members 12 and rear members 13.

Secured centrally of and against the inner face of the rear members 13 is a standard 14 which has formed in its lower end extending from its front to its rear face a slot 15 for a purpose to be hereinafter described. The upper end of the standard 14 is strengthened and supported by metallic braces 15' and 16 disposed on each side thereof, and having their lower ends secured respectively to the side members 10, and their upper portions to opposite sides of the upper end of the standard 14. Said braces are extended beyond the upper end of the standard 14 and have pivoted therebetween a lever 17, the ends of which extend forward and to the rear of said braces. Disposed in substantially the same vertical plane as the standard 14 and secured against the inner face of the front member 12 is a connecting brace 18 provided with a slot 19 extending through the front and rear faces thereof. A foot lever 20 is pivoted intermediate its ends between the walls of the slot 15 with its outer end projecting through the slot 19 and provided at its extremity with a foot treadle 21. A link bar 22 has its lower end pivotally connected with the inner end of the lever 20 and its upper end likewise connected with the inner end of the rock arm 17.

From the construction just described it will be apparent that when the foot lever 20 is oscillated on its pivot a corresponding oscillation will be imparted to the rock arm 17 by reason of the connecting link bar 22. Extending forwardly from and having their rear ends secured to opposite side faces of the standard 14 at the top of said standard is a pair of parallel spaced horizontally disposed metallic arms 23 which have secured therebetween at their forward ends a block 24 provided with a vertical aperture 25. Another pair of metallic arms 26 having their rear ends secured to opposite side faces of the upright 14 project forwardly in parallel spaced relation to the arms 23. The arms 26 likewise have secured therebetween at their forward ends a block 27 also provided with a vertical aperture 28 in alignment with the vertical aperture 25 in the block 24.

Pivotedly secured to the forward end of the rock arm 17 is a hanger block 29 which supports the upper end of a vertically disposed shaft 30, said shaft extending downwardly through the apertures 25 and 28 in the blocks 24 and 27 respectively and having

its lower end provided with a chuck 31 in which is adapted to be inserted a suitable boring implement. Fixed on the shaft 30 between the blocks 24 and 27 is a belt pulley 5 32 around which is adapted to pass a belt leading from any suitable source of power in order to impart the necessary rotation to the shaft 30 during the operation of boring. Mounted on the outer face of one of the 10 lower arms 26 is a pair of vertically disposed parallel spaced ears 33 and 34 between which is journaled a roller 35, the function of said roller being to prevent the belt from working downward on the pulley 15 32 during the operation of the machine.

Supported on the upper faces of the top end members 11 and disposed transversely of the frame from side to side are the parallel spaced beams 36 and 37, the inner faces 20 of which are provided with longitudinal grooves 38 and 39 respectively. Mounted for movement in the grooves 38 and 39 is the work support of the machine which comprises a pair of side members 40 and 41 25 provided on their exterior faces with longitudinally extending tongues 42 and 43 respectively adapted to be disposed in the grooves 38 and 39 for securing the work support in an adjustable manner to the 30 beams 36 and 37. The side members 40 and 41 are connected together at each end by the end members 44 and 45 disposed between the side members 40 and 41 throughout the entire extent of said end members. Pivoted 35 between the side members 40 and 41 is a work carrier 46, the upper face of which is provided with a groove 47 for receiving work of cylindrical formation. The outer ends of said carrier 46 are reduced with respect to its central portion so as to permit 40 same to be shifted on its pivot and disposed at an incline to the work support when desired. Pivoted to one side of the carrier 46 is a lever 48 which has secured thereto just 45 inward of its pivot point a vertical arm 49, the outer end of which is bent at right angles to its main body portion as at 50 so as to overlie the upper face of the carrier 46. The purpose of the angularly bent portion 50 50 being to engage the work when the lever 49 is depressed and firmly secure same upon the carrier, said lever being adapted to be held in depressed position through the medium of a hook 51 pivoted on the outer end 55 of the end member 44. The upper face of the beam 37 has imprinted thereon a scale, preferably in feet and inches, while a pointer 52 mounted on the work support has its end overlying the scaled face of said 60 beam, whereby the distance the work is moved with respect to the boring implement by shifting the work supported longitudi-

nally of the beams 36 and 37 may be clearly and accurately known.

In order to maintain the shaft 30 in its 65 uppermost position and the boring implement carried thereby out of engagement with the work, a spring 53 has one end thereof secured to the foot lever 20 and the other end to the upright 14, said spring constantly tending to hold the foot lever 20 in 70 the position shown in Figs. 1 and 2. When said lever 20 is in the position just referred to it will be apparent that the forward end of the rock arm 17 will be in its position of 75 greatest elevation by reason of the various connections between said rock arm and lever 20 which have been previously described. This elevation of the forward end of the rock 80 arm 17, as is obvious, will raise the shaft 30 to its position of greatest elevation and remove the boring implement carried thereby from proximity to the work. In order to move the shaft downwardly and bring the tool into engagement with the work it is 85 only necessary to press the outer end of the lever 20 downwardly with the foot which will in turn cause the outer end of the rock arm 17 to be likewise moved downwardly and bring the tool into engagement with the 90 work.

It will be noted that in order to secure the work carrier at a desired angle to the work support it is only necessary to interpose suitable blocks between the terminals of the 95 work carrier and the end members 44 and 45 of the work support. When the carrier is then adjusted the lever 48 may be operated so as to secure the work thereon.

What is claimed is:

In a machine of the class described, a base, a work support mounted on the base, a work carrier pivotally mounted on said work support, whereby said carrier may be moved 100 to an inclined position with respect to said support, a lever pivoted to said carrier and movable in a plane extending longitudinally of the latter, an arm on said lever having a portion thereof bent to overlie said carrier for engaging the work and detachably locking 105 same to the carrier when said lever is moved in one direction, a hook pivoted to the work support for engaging said lever and locking same against movement in the opposite direction to release the arm from en- 110 gagement with the work, and a boring and drilling mechanism mounted on the base and disposed above the carrier. 115

In testimony whereof, I affix my signature, in presence of two witnesses.

ROBERT LEE McDANIEL.

Witnesses:

J. W. McKAY,
H. F. PARKES.