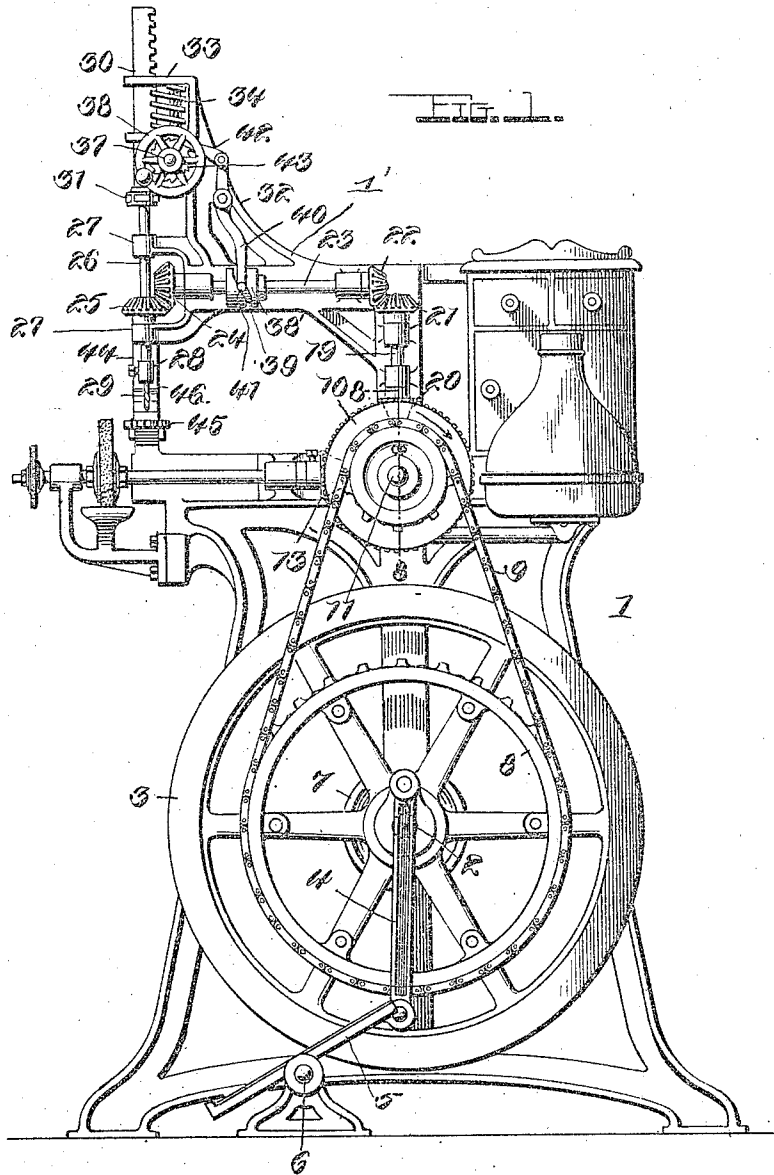


P. P. AU BUCHON.
 DRILLING MACHINE.
 APPLICATION FILED MAR. 15, 1911.

1,045,246.

Patented Nov. 26, 1912.

3 SHEETS-SHEET 1.



Inventor

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Witnesses

Chas. L. Griesbauer.
 L. H. Ellis.

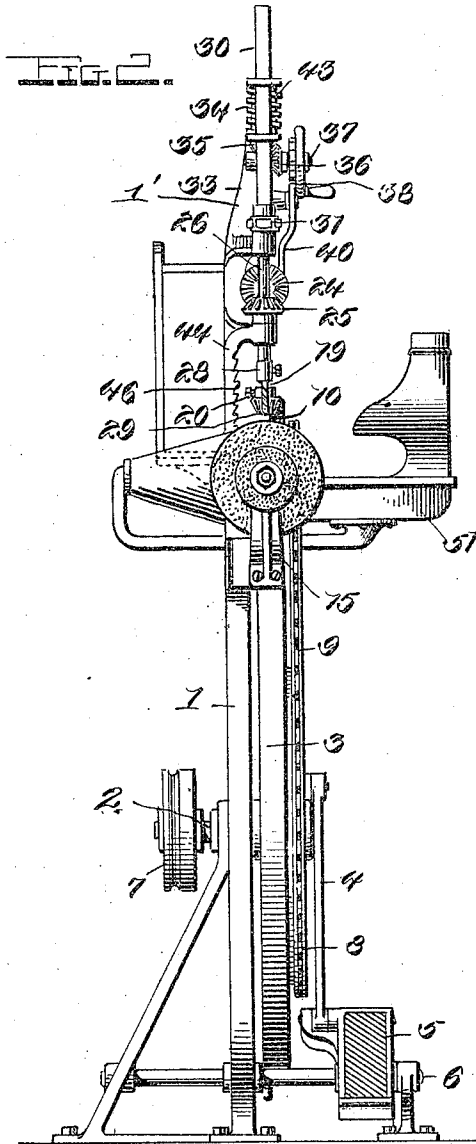
By Watson E. Coleman.
 Attorney

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

FIG. 2.

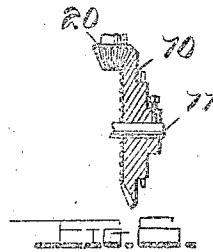
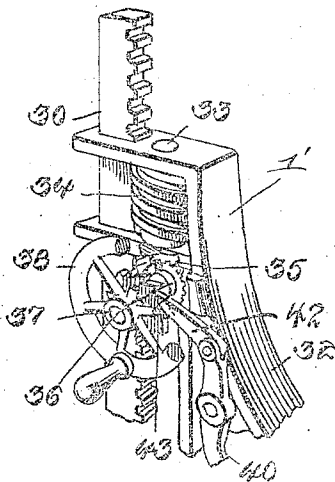


FIG. 4.

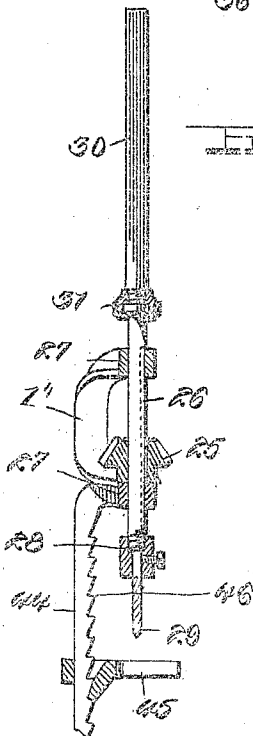
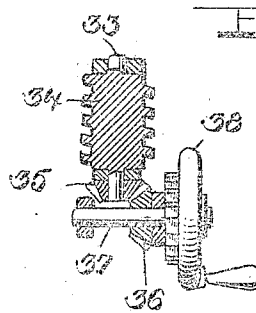


FIG. 5.



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UNITED STATES PATENT OFFICE.

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DRILLING-MACHINE.

1,045,246.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed March 15, 1911. Serial No. 614,682.

To all whom it may concern:

Be it known that I, PETER PERRY AUBUCHON, a citizen of the United States, residing at French Village, in the county of St. Francis and State of Missouri, have invented certain new and useful Improvements in Drilling-Machines, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in machines used in the metal working industry and more particularly to a drilling machine, and the invention has for its primary object a simple, durable and efficient construction of an apparatus of this character, the parts of which may be cheaply manufactured, and readily assembled and installed, and which will require practically no attention to maintain its proper running order.

The invention also aims to generally improve this class of devices and to render them more useful and commercially desirable.

Another object is to provide in connection with the drilling mechanism a means for manually raising and lowering the same.

With these and other objects in view, my invention consists of the novel details of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming part of this application Figure 1 is a side elevation of the machine; Fig. 2 is a front elevation thereof; Fig. 3 is a detail perspective view of the means for raising and lowering the drill; Fig. 4 is a detail section showing the drill shaft and work rest therefor; Fig. 5 is a detail section of a portion of the means for raising and lowering the drill, and Fig. 6 is a detail sectional view.

In carrying out my invention, I shall refer to the drawings in which similar reference characters denote corresponding parts throughout the several views and in which—

1 indicates a frame of cast iron and of sufficient size to carry a machine of this character having rotatably mounted therein a shaft 2, which shaft carries an enlarged fly or balance wheel 3. A pitman 4 has one end thereof pivotally connected to a crank on the fly wheel 3 and the other end thereof pivotally engaged with one end of the foot

pedal 5, the said pedal being mounted on a shaft 6 on the lower part of the frame 1. It will be seen that as the pedal is operated by the foot, that the fly wheel will be rotated, and in order to provide for the operation of the machine other than manually, a belt pulley 7 is provided on the shaft 2, so that whenever desired, the pitman 4 may be disconnected from the wheel and any source of power applied to the said pulley.

Carried on the fly wheel 3 is a sprocket wheel 8 over which extends a chain 9, said chain also extends over the gear teeth formed upon one face of a beveled gear 10, said combined gear and sprocket being mounted upon a shaft 11 which is journaled within the machine frame 1 and extends transversely thereof. An additional shaft 19 rotatably mounted in bearing boxes carried by a supplemental frame 1' formed integral with the main frame 1 and extending vertically of said frame having adjustably mounted on the lower end thereof the bevel gear 20 which is adapted to mesh with the gear portion of the combined bevel gear and sprocket 10, and as the said gear 20 is adjustable on the shaft 19, it will be seen that the same may move into and out of effective position, at will. Mounted on the upper end of the shaft 19 is an additional bevel gear 21 which meshes with a gear 22 carried at one end of an additional horizontal shaft 23. This last referred to horizontal shaft is also rotatably mounted in bearings carried by the supplemental frame 1' and has mounted upon the opposite end thereof a bevel gear 24 which meshes with a similar gear 25 carried on a drill shaft 26. The gear 24 is adjustably mounted on the shaft 23 and the gear 25 is splined to the drill shaft 26, said last referred to shaft extending vertically of the supplemental frame and being rotatably mounted in the arms 27 formed integral with the said supplemental frame.

On the lower end of the shaft 26 is removably secured a sleeve or the like 28 in which is carried a drill 29 or any other desired tool and the upper end of said shaft is joined to the lever end of a rack 30 by means of a union 31, the purpose of which will be hereinafter described. The supplemental frame is provided with an extension 32, through the arms of which extend said rack 30 and also mounted in the said arms is an

additional vertical shaft 33 carrying a worm screw 34 which meshes with the teeth of the rack 30, the lower end of the shaft 33, being provided with a bevel gear 35 which meshes with a similar gear 36 carried on the horizontal shaft 37. This last referred to shaft 37 is rotatably mounted between the extension 32 and a casting formed thereon and mounted on said shaft is a hand operated wheel 38, whereby when the same is rotated, said drill shaft 36 will be raised and lowered. In view of this latter described construction and the fact that the gear 25 is keyed to the shaft 20, it will be appreciated that the rotation of the hand wheel 38 will raise and lower the drill shaft 26 without effecting the gear 25.

A wheel 38' is fixed upon the shaft 23 and has formed in the periphery thereof a spirally arranged slot 39, the purpose of which will be later described. The lever 40 is fulcrumed in its length to the extension 32 and one end of said lever is provided with a roller 41 which is adapted to operate within said slot 39 while the upper or opposite end of the lever 40 is provided with a spring actuated pawl 42 being normally held into engagement with the teeth of the ratchet or the like 43 carried by the shaft 37.

It will be appreciated from this construction that as the shaft 23 is rotated so as to rotate the shaft 26, the lever 40 will be oscillated so that the pawl 42 carried thereon will engage the various teeth of the ratchet 43 and rotate the said ratchet, which in turn, directly lowers said drill shaft 26. When the drilling operation has been completed, the pawl 42 is moved from its effective position with the ratchet and the hand wheel 38 is then turned manually to raise the drill shaft 26.

Extending from one of the arms 27 formed on the supplemental frame 1' is an arm 44 upon which is adjustably mounted the ordinary work rest 45 and the said arm 44 is disposed adjacent the drill rod 26 so that the rest will retain the work upon which the drill 29 is to act in the usual manner.

Although I have stated throughout the specification that the various bevel gears which mesh with one another so as to operate the various parts of the machine are adjustably mounted on the shafts by means of collars and set screws, it will be understood that clutch mechanism may also be

provided to perform the same function without departing from the invention.

It is also to be noted that whereas I have illustrated a simple and preferred embodiment of the present invention it is of course to be understood that other minor details in changes as to form, construction and operation may be resorted to that come within the scope of the present claims without departing from the spirit thereof or sacrificing the efficiency of the same.

What I claim is:—

1. In a machine of the class described, comprising a frame, a supplemental frame mounted thereupon, a pair of arms extending horizontally from said supplemental frame and having a vertically extending drill shaft rotatably mounted within bearings formed in the outer ends of said arms, a rack connected to said shaft, a second pair of arms made integral with the said supplemental frame and provided with squared openings for receiving said rack, a depending arm formed integral with the lowermost arm and connecting the main frame for holding a tool rest, and ratchet teeth formed upon the last mentioned arm, substantially as and for the purpose described.

2. The combination of a machine of the character described, comprising a frame, a supplemental frame mounted thereupon, a drill shaft rotatably mounted within said supplemental frame, a rack slidably mounted within said supplemental frame and connected to said shaft, a transverse horizontally extending shaft mounted within said supplemental frame, a vertically extending shaft mounted in said frame, means for connecting said transverse and vertically extending shafts, a worm screw mounted on said vertical shaft and meshing with said rack, a ratchet wheel mounted on said transverse shaft, a vertically extending lever pivotally mounted upon said supplemental frame, a spring pressed pawl mounted in one end of said lever for engagement with said ratchet wheel, means for rotating said drill shaft and for operating the opposite end of said lever, whereby the said shaft may also be raised and lowered.

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

PETER PERRY AUBUCHON.

Witnesses:

ABE GORDON,
P. W. EVANS.