June 10, 1924. 1,497,133

M. COT

DRILLING MACHINE

Filed Aug. 16, 1922

Fig. 1.

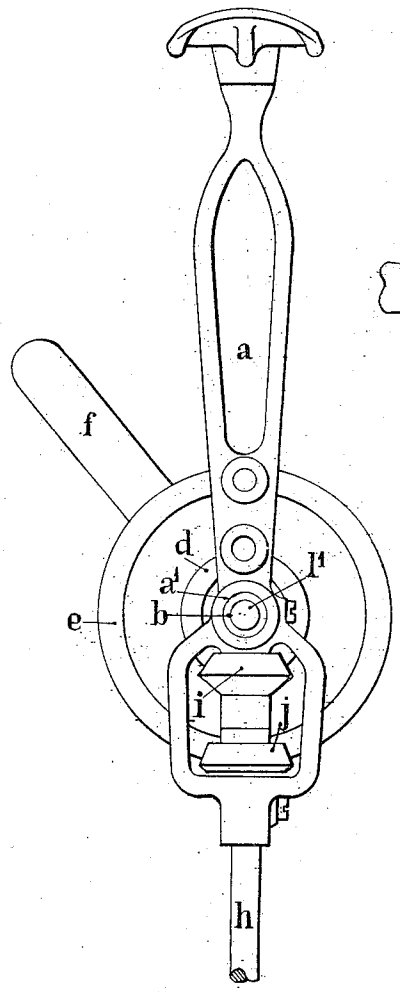


Fig. 2.

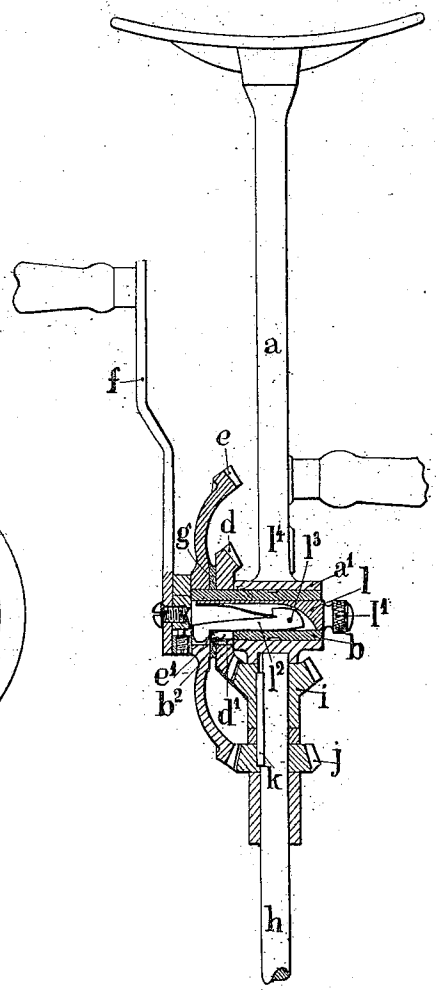


Fig. 3.

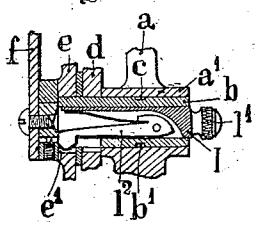


Fig. 4.

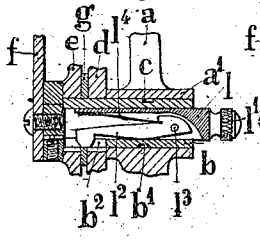
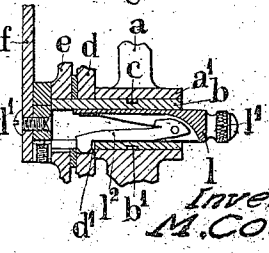


Fig. 5.



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UNITED STATES PATENT OFFICE.

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DRILLING MACHINE.

Application filed August 16, 1922. Serial No. 582,275.

To all whom it may concern:

Be it known that I, MAX COT, citizen of 107 Avenue Parmentier, Paris, France, have invented Improvements in Drilling Machines, of which the following is a full, clear, and exact description.

This invention has for its object improvements in the driving device of drill-holders.

These improvements comprise:

1. The use of a keying device allowing, at will, to engage the driving crank with the gears giving the high speed or with the gears giving the slow speed.

2. The arrangement of the driving gears and their method of assemblage.

3. The arrangement of the driven gears.

The invention will be described hereafter, by way of example, in the accompanying drawing, in which:

Fig. 1 illustrates the improved drilling machine on the side opposed to that of the crank,

Fig. 2 is a side view, partly in section, of the same drilling machine,

Figs. 3, 4 and 5 are views corresponding to Fig. 2 and respectively illustrate the parts arranged for giving the high speed, the same parts in an intermediate position and the parts arranged for giving the slow speed.

As illustrated in the drawing, the improved drilling machine is provided, on its shank portion a, with a transverse socket a^1 receiving a laterally projecting hollow central spindle b.

This spindle b loosely rotates in the socket a^1, but is held in the latter by means of a pin c fitted in a circular groove b^1 formed in the said spindle.

The laterally projecting portion of the spindle b receives the driving pinion d for the slow speed; the driving pinion e for the high speed, and the driving crank f. The two pinions d and e are separated by a washer g.

The lower part of the socket a^1 receives in a fixed manner the drill-holding spindle h and on this spindle are mounted the pinions i and j for slow and high speed respectively.

Within the central spindle b is arranged the driving key l for one or the other of the driving pinions d and e.

This key l is provided with an operating head l^1 and is internally recessed for receiving a pawl or dog l^2.

This pawl or dog held in the key l by means of a pin l^3 is pushed downwardly by a spring l^4.

The head of the pawl or dog projects in an opening b^2 provided in the central spindle b so that this head driven by the latter may fall at will either in a notch e^1 formed in the high speed pinion e, or in a notch d^1 provided in the slow speed pinion d and this by a simple rectilinear displacement of the key l.

The head of the pawl or dog l^2 has two bevelled portions so that it may always clear the washer g separating the two pinions d e.

The dog l^2 actuated by the hollow spindle b and the crank f, according to the position it is caused to take, renders the latter integral either with the slow speed pinion d, or with the high speed pinion e, at will.

This device is applicable also to any hand or mechanically driven drilling machines.

The forms, details, accessories, materials and dimensions of the above devices may of course be varied. Thus, for instance, the head of the pawl or dog l^2 might be replaced by any equivalent device. Moreover, the key might also be moved by turning the same.

Claim:

A hand drilling machine comprising a shank portion, a transverse socket provided therein, a hollow spindle rotatably and non-slidably arranged in the socket and having a portion projecting laterally therefrom, low and high speed pinions loosely mounted on the projecting portion of the spindle and each being provided with a notch on the inner periphery, a washer separating said pinions, a crank connected to the outer end of the projecting portion of the spindle, the projecting portion of the spindle being provided with an opening adjacent the mounting points of the pinion, a drill holding spindle rotatably mounted on and projecting longitudinally from the shank, low and high speed pinions keyed to said drill holding spindle and meshing with the first mentioned pinions, a driving key slidably mounted in the hollow spindle and removable from the end opposite the crank and includ-

ing a recessed body portion, a spring pressed dog pivoted therein and provided with a bevelled head which is arranged through the opening in the projecting portion of the hollow spindle for engaging the adjacent notch in either of the first mentioned pinions for rigidly connecting the corresponding pinion to the hollow spindle, substantially as and for the purposes set forth.

The foregoing specification of my improvements in hand and mechanically driven drilling machines signed by me this 4th day of August 1922.

MAX COT.