(No Model.)

J. H. MICKLER.

DRILLING MACHINE.

No. 421,416. Patented Feb. 18, 1890.

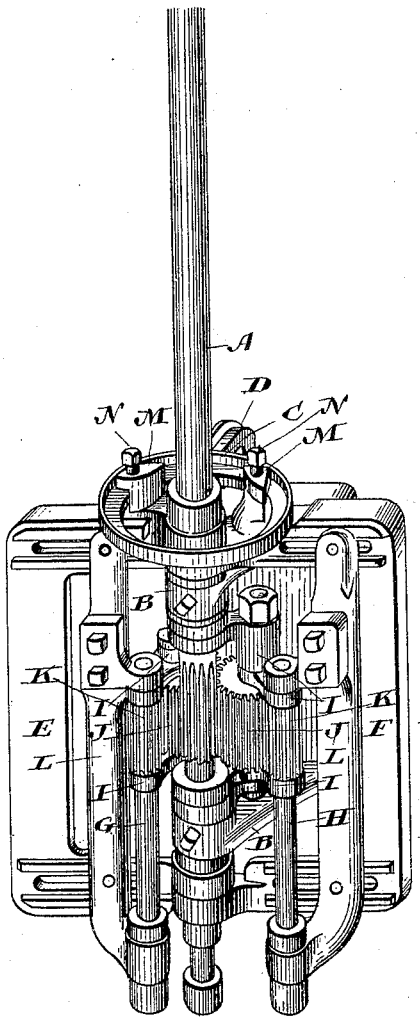

Fig. 1.

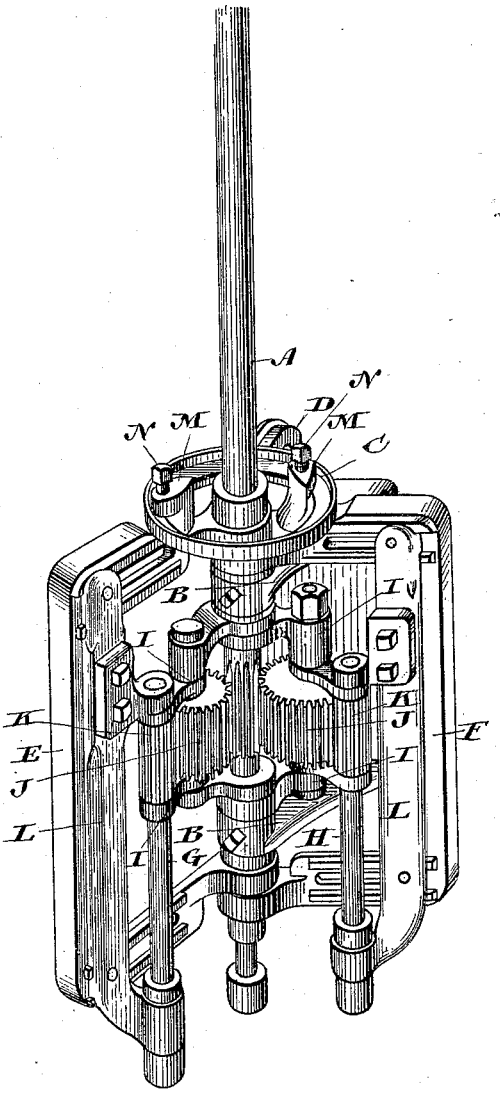

Fig. 2.

Witnesses.
F. C. Fethestonhaugh.
W. G. McMillan

Inventor
J. H. Mickler
by Donald C. Ridout & Co
Attys

UNITED STATES PATENT OFFICE.

JACOB H. MICKLER, OF PRESTON, ONTARIO, CANADA, ASSIGNOR OF TWO-THIRDS TO JACOB EMIL KLOTZ AND WILLIAM STAHLSCHMIDT, BOTH OF SAME PLACE.

DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 421,416, dated February 18, 1890.

Application filed July 31, 1889. Serial No. 319,250. (No model.)

To all whom it may concern:

Be it known that I, JACOB HERBERT MICKLER, mechanic, of the village of Preston, in the county of Waterloo, in the Province of Ontario, Canada, have invented a certain new and Improved Drilling-Machine, of which the following is a specification.

The object of the invention is to design a gang drilling-machine having adjustable spindles by which holes may be bored on a line with or at various angles to each other; and it consists, essentially, of a central main driving-spindle having one or more wings pivoted upon it and carrying supplemental spindles geared to and deriving motion from the central driving-spindle, substantially as hereinafter more particularly explained.

Figure 1 is a view of the machine showing the wings straightened out and one of the supplemental spindles closer to the central spindle than the supplemental spindle carried by the opposite wing. Fig. 2 is a view of the machine showing one of the wings set at an angle.

In the drawings I have merely shown the parts immediately connected with my invention, A being the central spindle, which is supported and driven in any ordinary way.

B represents two brackets which are connected to the main frame of the machine and form supporting-journals for the spindle A.

C is a ring connected to the main frame of the machine by the bracket D.

E and F are two wings journaled, as indicated, on the central spindle A.

G and H are the supplemental spindles. These spindles are respectively connected to and supported by the bars L, which are adjustably connected to the wings E and F and are each independently connected to the central spindle A by means of the jointed links I. They are also independently connected to the said spindle A by means of the gear-wheels J, both of the said gear-wheels meshing with a pinion formed on the central spindle A and each with a pinion K formed on each of the spindles G and H.

From the drawings it will be noticed that the jointed links I form a perfectly flexible and independent connection between each of the spindles G and H and the central spindle A, and that the gearing connecting the two permits each spindle to be moved independently of the other without any fear of binding or otherwise interfering with the proper working of all the spindles. It will be observed that each bar L is horizontally adjustable, and that by merely loosening the bolts which secure the bars to their respective wings either or both spindles G H may be moved nearer to or farther from the central spindle A.

With the view of enabling the spindles G H to be held rigidly at any angle to the central spindle A desired, I form a lug M at each of the wings E and F and extend the said lug over a flange formed on the ring C. The set-screws N in the lugs M are screwed down against the flange on the ring C, and in this manner the rings E and F are held, and may be readily adjusted and secured at any angle to the central spindle A desired.

What I claim as my invention is—

1. The wings E F, journaled on a spindle A, the bars L, adjustably connected to the said wings and supporting the spindles G H, in combination with the gear-wheels J, pinions K, and jointed links I, substantially as and for the purpose specified.

2. The wings E F, journaled on the spindle A and provided with lugs M and set-screws N to rigidly connect the said wings to the stationary ring C, the bars L, adjustably connected to the said wings and supporting the spindles G H, in combination with the gear-wheels J, pinions K, and jointed links I, substantially as and for the purpose specified.

Preston, June 29, 1889.

JACOB H. MICKLER.

In presence of—
GEO. FINK,
FRED FISCHER, Jr.