

1,018,153.

A. BANK.
BORING AND DRILLING MACHINE.
APPLICATION FILED AUG. 11, 1911.

Patented Feb. 20, 1912

2 SHEETS—SHEET 2.

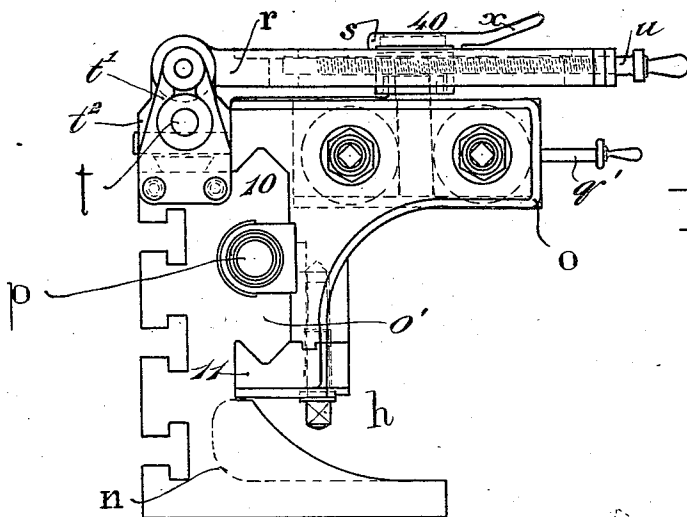


Fig. 3

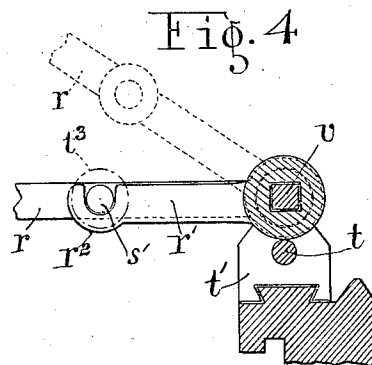


Fig. 4

WITNESSES:

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UNITED STATES PATENT OFFICE.

ADOLF BANK, OF ESSEN-RUHR-WEST, GERMANY.

BORING AND DRILLING MACHINE.

1,018,153.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ADOLF BANK, a subject of the German Emperor, and residing at Essen-Ruhr-West, Germany, have invented certain new and useful Improvements in Boring and Drilling Machines, of which the following is a specification.

The object of this invention is to provide a boring and drilling machine adapted to bore or drill work-pieces in accordance with the dimensions of the working drawing without previous marking of such work-pieces.

Figure 1 of the accompanying drawings comprises a front elevation of a boring and drilling machine embodying one form of this invention. Fig. 2 represents a top plan view thereof. Fig. 3 represents an end elevation thereof.

The same reference characters indicate corresponding parts in the different figures.

A bracket n which is shown as a wall bracket is provided with a fixed rail or guide-way o' which is preferably in dovetail form and horizontally disposed. A screwshaft p is journaled at its opposite ends in said bracket and provided intermediately with reverse screwthreads which meet at or near the center, and at one end with an angular tang p' for turning it. Another screwshaft t is also journaled at its opposite ends in bearings in the standards t' and t'' at opposite ends of said bracket in a plane above and somewhat in the rear of the shaft t . This shaft t is screwthreaded in one direction between its journals.

A movable main jaw o is adapted to slide on the rail or rails o' at the left of the center thereof, being held thereon by a recessed lug 10 and a recessed clamp 11 slidably held by a bolt h . This jaw is engaged by the screwthreads at the left of the center of the shaft p . A similar movable main jaw o^{20} is likewise supported on the way o' and engaged by the screwthreads of the shaft p at the right of the center thereof. By turning said shaft these jaws are movable toward and from each other. The jaw o is provided on its inner face with two fixed lugs q^{10} and q^{11} and two sliding lugs q and q^{12} constituting lateral auxiliary jaws. A shaft q^{13} in a plane at right angles to the shaft p is journaled in the lugs q^{10} and q^{11} and provided with reverse screwthreads q^{14} and q^{15} . The shaft q^{13} is also provided with a crank q^{16} or other actuating means and it serves to

move the jaws q and q^{12} toward and from each other to bring them into positions to engage work of varying sizes. The jaw o^{20} is provided on its inner face with two fixed lugs q^{20} and q^{21} and with two sliding lugs q^{22} and q^{23} constituting lateral auxiliary jaws engaged and moved toward and from each other by a reversely screwthreaded shaft q^{24} having a crank q^{25} .

A guide rod t^{10} is supported at its opposite ends in the standards t' and t'' above the screwshaft t and provided along its length with a scale v . A sliding carriage r' having an angular bore is disposed on the rod t^{10} and engaged by the screw shaft t , said screwshaft serving to move said carriage from side to side of the machine. The carriage r' is provided on one side with a curved lug r^2 as clearly shown in Figs. 2 and 4. A hinged frame r is supported on the carriage r' and provided with a scale or scales w . This frame is provided with a lateral stud s' which rests in the curved lug r^2 when the hinged frame is in normal position. This stud is provided with a clamping nut t^3 which operates against said lug and holds the frame in said position. A slide s is movable on the frame r and carries the boring guide 40. The handle x serves to clamp the slide in adjusted position.

I claim as my invention:

1. In a boring machine, the combination of a support, clamping means for securing a work-piece thereto, and a boring guide disposed above said means and adjustable in two directions at right angles to each other on said support, said clamping means comprising main jaws movable toward and from each other and auxiliary jaws adjustable on said main jaws.

2. In a boring machine, the combination of a support provided with a reversely threaded screwshaft, a one-way threaded screwshaft and a guide rod, main jaws movable toward and from each other on said reversely threaded screwshaft, a carriage adapted to slide on said guide rod and engaged by the one-way screwshaft, a hinged frame on said carriage and a boring guide adjustable on said hinged frame.

3. In a boring machine, the combination of a support provided with a reversely threaded screwshaft, a one-way threaded screwshaft and a guide rod, main jaws movable toward and from each other on said reversely threaded screwshaft, a carriage

adapted to slide on said guide rod and engaged by the one-way screwshaft, a hinged frame on said carriage and a boring guide adjustable on said hinged frame, said guide
5 rod and hinged frame being provided respectively with graduated scales.

4. In a boring guide, the combination of a support provided with a reversely threaded screwshaft, a one-way threaded screw-
10 shaft and a guide rod, main jaws movable toward and from each other on said reversely threaded screwshaft and provided

with laterally adjustable jaws, a carriage adapted to slide on said guide rod and engaged by the one-way screwshaft, a hinged
15 frame on said carriage and a boring guide adjustable on said hinged frame.

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

ADOLF BANK. [L. S.]

Witnesses:

ALBERT F. NUFER,
WILHELM SOMMERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."