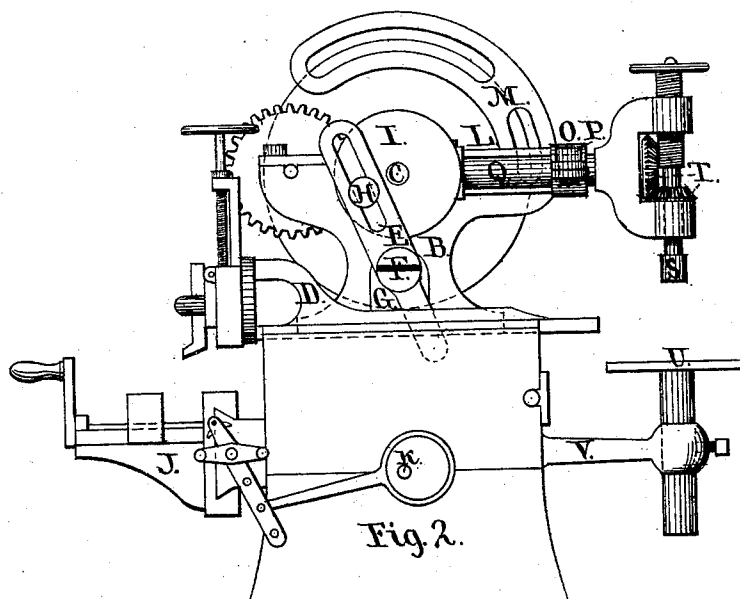
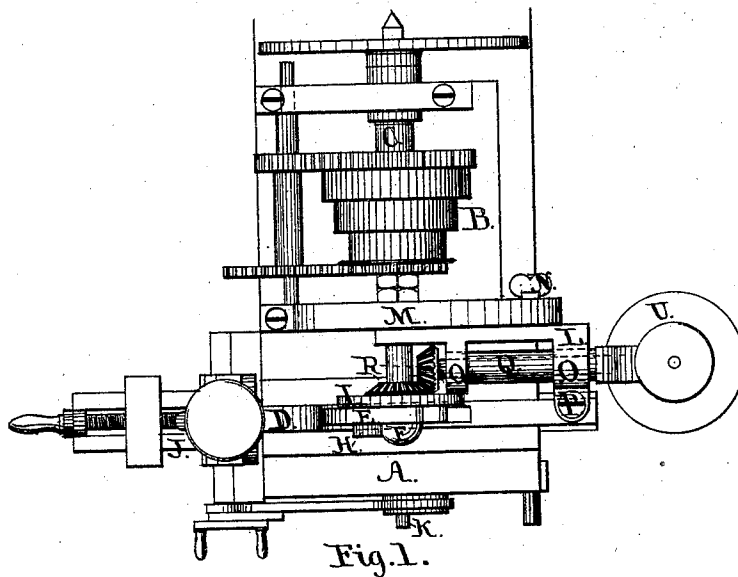


J. McLAREN.

COMBINATION OF LATHE, PLANER AND DRILLING-MACHINE.

No. 170,683.

Patented Dec. 7, 1875.



Witnesses.

A. H. Low
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UNITED STATES PATENT OFFICE.

JAMES McLAREN, OF ALBANY, NEW YORK.

IMPROVEMENT IN THE COMBINATION OF LATHES, PLANERS, AND DRILLING-MACHINES.

Specification forming part of Letters Patent No. **170,683**, dated December 7, 1875; application filed September 3, 1874.

To all whom it may concern:

Be it known that I, JAMES McLAREN, of the city and county of Albany, and State of New York, have invented a combined Lathe, Shaping and Drilling Machine, of which the following is a full and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view, and Fig. 2 an end elevation.

My invention consists in combining and arranging the several parts composing the different machines hereinbefore named in the manner herein described, so that, while they all derive their motion through the lathe-spindle, either may be put in operation independently of the other, or the several machines used at the same time.

As shown in the drawings, A is the bed-piece of the machine. B is the head of a back-gear lathe, the spindle C of which only differs from those made in the ordinary manner by having the end of it which passes through the back end of the head B elongated, for the purpose of receiving the devices for driving the shaping and drilling machines. The shaping-machine does not differ materially from those in common use, except in the manner of driving it. Its sliding head D works in guides formed in the bed-piece A, and derives its motion from the spindle C, through the means of the lever E working upon a stud, F, secured to the bracket G on the bed-piece A. The lever E is driven by the wrist-pin H in the disk I, which is secured to the spindle C. The disk I may be made with a slotted opening across its face, for the purpose of adjusting the wrist-pin H, so as to vary the stroke of the sliding head D to suit the work to be planed by it. The table or vise J, for holding the work, and its feeding device are such as are commonly used on shaping-machines, the feeding motion being obtained from the intermediate shaft K for driving the feed-screw of the lathe. The operation of the shaping-machine can be stopped by removing the wrist-pin H from the disk I, or, when used in a slotted opening, as described, by moving the wrist-pin so as to coincide with the center of the lathe-spindle C. The drilling-machine is attached to the lathe-head B by means of the bracket L, one

end of which is formed into an eye, through which the lathe-spindle C passes, thereby holding the bracket in a true radial line in relation to the spindle. The quadrant M, attached to the lathe-head, and the screw N secure the bracket L at any angle required for drilling holes out of a vertical line. The bracket L is also provided with lugs O, one of which is split to form a clamp, and is provided with the clamp-screw P. The forked sleeve Q passes through the lugs O, in which it can be turned freely, to set the drill at any angle, the clamp-screw P retaining it in such position. Besides this turning movement of the sleeve, it is also made so as to have an endwise movement, for the purpose of throwing the bevel-wheels R in and out of gear. One of these wheels is secured to the lathe-spindle C, and the other to a shaft passing through the sleeve Q, for driving the drill-spindle S by means of the bevel-wheels T. The drilling-table U is attached to the bed-piece A by means of the bracket V.

The operation of the drilling-machine can be suspended by loosening the clamp-screw P and sliding the sleeve Q outward, so as to move the bevel-wheels R out of gear.

It will readily be seen that by this arrangement the shaping and drilling machines are made permanent attachments to the lathe, and are not intended to be detached therefrom, and that the work of turning, planing, and drilling can all be performed at the same moment, or either operation can be carried on independently of the others.

I claim as my invention—

1. The combination of the lathe-spindle C with the sliding head D of the shaping-machine, when arranged substantially as herein described, so as to permit the simultaneous use of both machines, as herein set forth.

2. The combination of the lathe-spindle C with the drill-spindle S, when arranged to operate substantially as and for the purpose specified.

3. The combination of the lathe-spindle C, sliding head D, and drill-spindle S, when arranged to operate substantially as herein described, and for the purpose set forth.

JAMES McLAREN.

Witnesses:

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