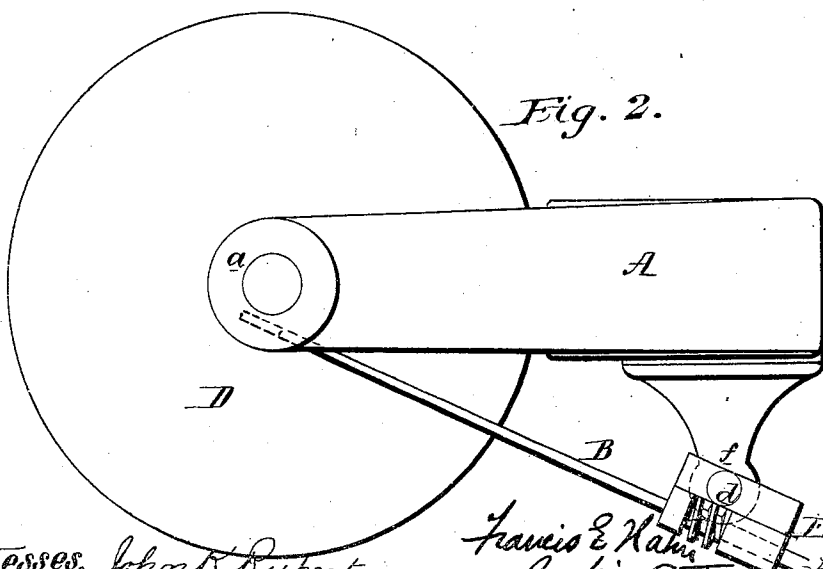
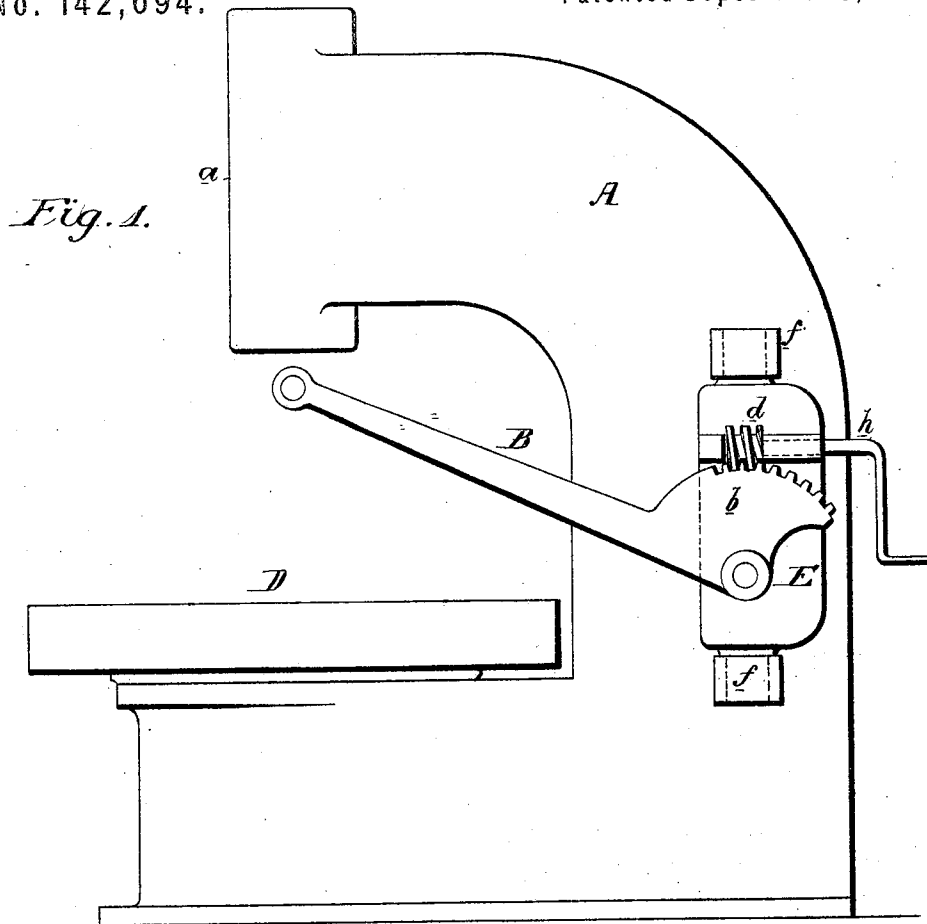


F. E. HAHN.
Boring Mills.

No. 142,694.

Patented September 9, 1873.



Witnesses, John K. Rupertus
Thomas McSwain

Francis E. Hahn
By his Attys.
Howson and Lee

UNITED STATES PATENT OFFICE.

FRANCIS E. HAHN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO OSCAR C. FERRIS AND FREDERICK B. MILES, OF SAME PLACE.

IMPROVEMENT IN BORING-MILLS.

Specification forming part of Letters Patent No. **142,694**, dated September 9, 1873; application filed August 4, 1873.

To all whom it may concern:

Be it known that I, FRANCIS E. HAHN, of Philadelphia, Pennsylvania, have invented a Combined Crane and Boring Machine, of which the following is a specification:

The object of my invention is to so combine a crane with a boring-machine that it can be used for depositing the work to be bored in its proper position on the bed of the machine, a further object of my invention being general simplicity in the construction of the crane and in its application to the frame of the machine.

I attain these objects by combining with the frame A of a boring-machine a crane, the jib B of which can be raised and lowered and moved laterally beneath the overhanging portion *a* of the frame and above the table D, as shown in the side view, Fig. 1, and plan view, Fig. 2, of the accompanying drawing, the said jib being hinged to a rocking frame, E, on the frame A, and having a toothed segment, *b*, into which gears a worm, *d*, on a cranked shaft, *h*, adapted to bearings on the said rocking frame.

It is important that the crane should be so combined with the boring-machine that the jib can be swung beneath the overhanging portion of the frame, and the object to be bored being thereby deposited in the desired central position on the table.

In the drawing I have represented my invention as applied to the frame of a machine for boring out the hubs of car-wheels. The rock-frame E is arranged to turn in brackets

f f, projecting so far from the side of the frame A that the jib B can be swung outward and away from the frame above the floor; hence, a car-wheel on the latter can be connected by suitable tackle to the eye at the end of the jib, and the latter with its load may then be elevated by turning the handled shaft *h* of the worm *d*, then swung laterally beneath the overhanging portion *a* of the frame, after which the jib may be lowered and the wheel deposited in its proper position on the table D.

Gearing differing from that described may be adapted for raising and lowering the jib, but I prefer the use of the worm adapted to teeth on a segment forming part of the jib, as shown, owing to the general simplicity of the device.

I claim as my invention—

1. The combination with a boring-machine, substantially as described, of a crane, the jib of which can be raised and lowered, and swung laterally beneath the overhanging frame, as set forth.

2. The combination with the frame A of the rocking-shaft E, worm *d*, jib B, and toothed segment *b*, forming part of the said jib, all as set forth.

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

F. E. HAHN.

Witnesses:

WM. A. STEEL,
HUBERT HOWSON.