

J. SHIRRELL.

Machines for Grinding Cylinder-Heads.

No. 142,874.

Patented September 16, 1873.

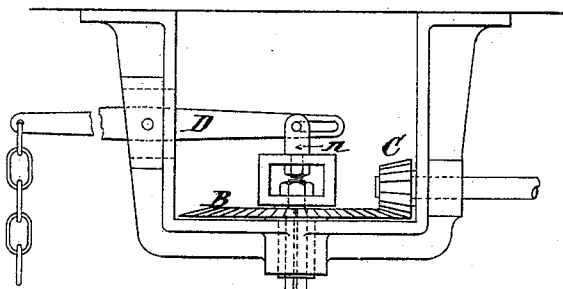
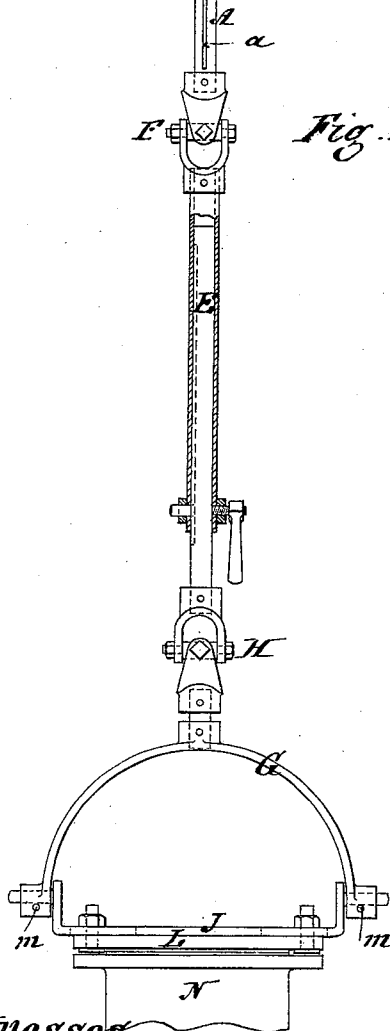


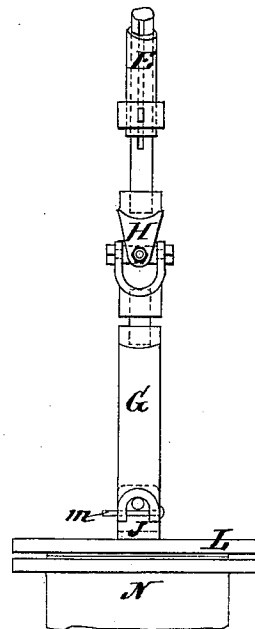
Fig. I.



Witnesses

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Fig. II.



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UNITED STATES PATENT OFFICE.

JAMES SHIRRELL, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN MACHINES FOR GRINDING CYLINDER-HEADS.

Specification forming part of Letters Patent No. **142,874**, dated September 16, 1873; application filed May 28, 1873.

To all whom it may concern:

Be it known that I, JAMES SHIRRELL, of Paterson, in the State of New Jersey, have invented a new and Improved Machine for Grinding Cylinder-Heads into Cylinders, of which the following is a specification:

This invention consists in an arrangement for grinding the heads of cylinders upon and into the cylinders, and is particularly applicable for locomotive-cylinders.

In the accompanying drawing, Figure I represents a front view of the machine embodying my invention, and Fig. II is a side view of the same part of the same.

From a suitable bearing a rod, A, is suspended, provided with a bevel-wheel, B, meshing into a pinion, C, fast to the driving-shaft. The bevel-wheel B turns in the bearing, and is attached to the rod or shaft A by means of a key working in a slot, *a*, in said shaft A, to allow the shaft A, and the parts attached to the end of the same, to be raised upward or lowered, as may be desired. The upper end of the shaft A is connected, by means of a swivel-bolt, *n*, to a lever, D, operated by a chain or cord, for the purpose of raising or lowering said shaft A, as may be desired. To the lower end of the shaft A a sliding or extension rod, E, is connected by means of a swivel-joint, F, and to the lower end of this extension-rod E a straddling bar, G, is attached by means of a swivel-joint, H. Into the ends of the arms of the straddling bar G a cross-bar, J, is attached, which may be securely fastened to the same by means of the pins *m* or suitable keys. This cross-bar J is fastened to the cylinder-head L, and the cylinder N, into which the head is to be ground, is then placed underneath the same.

Motion being given to the machine by means of the gear-wheels C and B, the cylinder-head

L will receive a rotary motion on the top of the cylinder, and thereby grind itself into and upon the same.

When the cross-bar J is fastened to the straddling bar G by means of the pins *m* or suitable keys, the whole weight of the rods and other parts of the machine will be brought to bear upon the cylinder-head, which may be even weighted down heavier by adding extra weights upon the top of the head.

When the grinding is nearly completed, and requires only the finishing or light grinding, the cross-bar J can be detached from the machine by withdrawing the keys or bolts *m* out of the jaws on the end of the straddling bar G, and the machinery raised a little upward, when the cylinder-head L will be relieved of the weight, and the jaws in the ends of the straddling bar G will only guide the cross-head J and give the same and the cylinder-head the desired rotary motion.

By the arrangement of the swivel-joints F and H the machine will readily accommodate itself to the position of the cylinder, and, by the extension-bar E, the machine is easily regulated to any height of the cylinder, while, by the arrangement of the lever D, the machine, together with the cylinder-head, can be quickly raised whenever required.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of shaft A, extension-bar E, and straddling bar G with cross-bar J, connected together by swivel-joints F and H and operated by suitable gearing B C and lever D, substantially as and for the purpose hereinbefore set forth.

JAMES SHIRRELL.

Witnesses:

THEODORE SCHEFFLER,
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