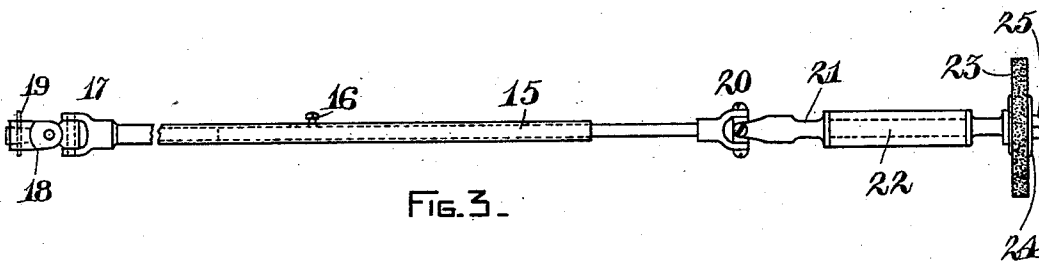
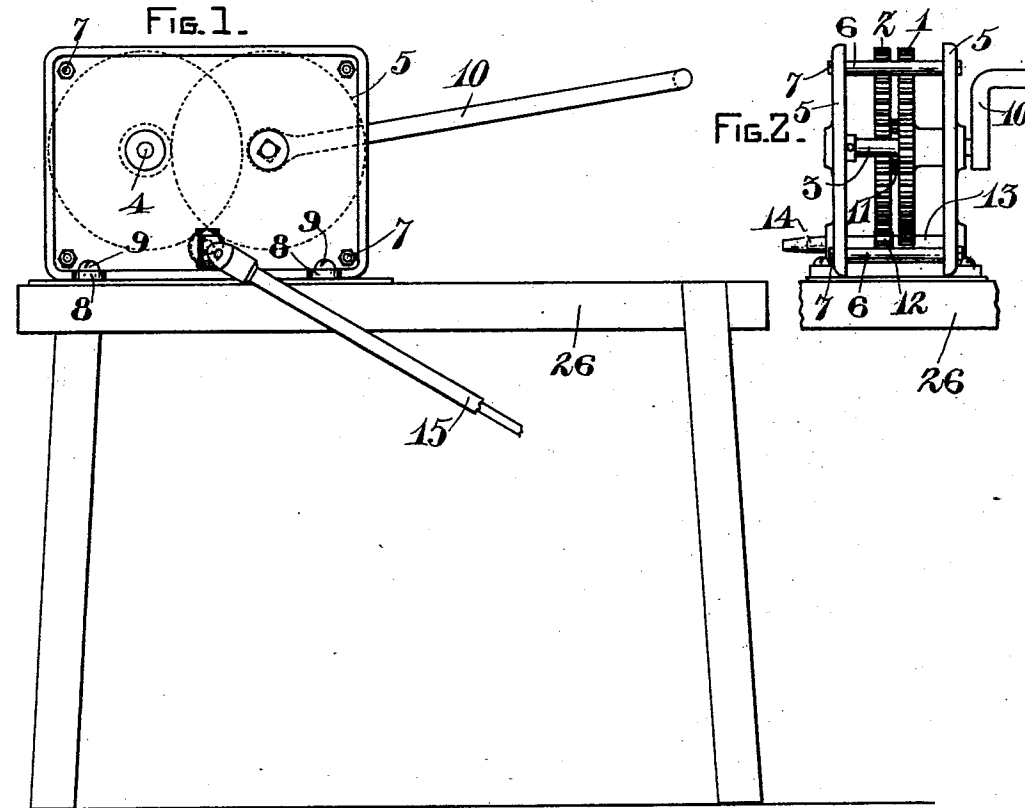


(No Model.)

J. CAREY & W. A. REID.
GRINDING AND DRILLING MACHINE.

No. 569,126.

Patented Oct. 6, 1896.



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN CAREY AND WILLIAM A. REID, OF SCHENECTADY, NEW YORK,
ASSIGNORS OF ONE-HALF TO GARRET MYERS, OF SAME PLACE.

GRINDING AND DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 569,126, dated October 6, 1896.

Application filed March 26, 1896. Serial No. 584,925. (No model.)

To all whom it may concern:

Be it known that we, JOHN CAREY and WILLIAM A. REID, citizens of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Grinding and Drilling Machines, of which the following is a specification.

This invention has especial reference to machines for grinding and drilling, in which is employed a driving mechanism for attaining high speed and power and connections between the driving mechanism and a grinding or drilling tool for performing work at a distance from the driving mechanism.

The object of this invention is to provide an improved machine of this character which will afford power and high speed, is simple in construction, strong, compact, and portable.

The invention consists in a machine adapted for grinding and drilling, constructed and arranged as hereinafter set forth and claimed.

Referring to the accompanying drawings, in which similar figures refer to like parts, Figure 1 is a side view of the driving mechanism mounted in position for use. Fig. 2 is an end view thereof. Fig. 3 is a side view of a flexible and extensible connection and a grinding-wheel to be used with the driving mechanism.

The driving or power mechanism will first be described. This consists of a train of gear-wheels, as follows: two large gear-wheels 1 and 2, overlapping each other and mounted on shafts 3 and 4, preferably in the same horizontal plane. The shafts 3 and 4 have their bearings in vertical plates 5, connected together by bolts 6 and nuts 7. The plates 5 have perforated lips 8, by means of which they may be secured by screws 9 to a suitable support. The shaft 3 of gear-wheel 1 projects through one of the plates 5, and has secured thereto a crank-handle 10 for operating the driving mechanism. The gear-wheel 1 meshes with a pinion 11 on the shaft 4 of the gear-wheel 2, and the gear-wheel 2 meshes

with a pinion 12 on the shaft 13, mounted in the plates 5, adjacent to their lower edges, and having the projecting portion 14.

By means of the construction and arrangement of geared mechanism just described a simple, compact, and powerful driving mechanism is provided, which may be readily transported manually for use, and can be easily and quickly taken apart for repair.

The projecting portion 14 of shaft 13 is adapted to have directly secured thereto a grinding or drilling tool or a power-transmitting extension.

In conjunction with the driving mechanism set forth a power-transmitting extension may be employed, and is shown here as used with a grinding-wheel for sharpening horseshoes. The extension consists of a telescoping arm 15, of suitable length, held in adjustment by a set-screw 16 and connected at its inner end by a universal joint 17 to a socket 18, which is secured to the projection 14 of shaft 13 by a pin 19 or other suitable fastening. The outer end of arm 15 is connected by a universal joint 20 to a short arm 21, having a sleeve 22, serving as a handle to hold and guide the grinding-wheel 23 or other tool mounted on the end of the arm 21 and secured thereon by a washer 24 and nut 25, or other suitable means. The driving mechanism is here shown as mounted on a bench 26, one end thereof serving as a seat for the operator. By having the shaft 13 located at the bottom of the driving mechanism and adjacent to the bench 26 the machine is rendered stable.

The machine may be employed for grinding shoes on a horse's feet, or, by substituting different tools, for drilling and other work at a distance from the driving mechanism.

Having described our invention, we claim—

In a portable grinding and drilling machine, a power and speed driving mechanism, consisting of a pair of gear-wheels overlapping each other, a pinion on the shaft of the second of these gear-wheels with which pin-

ion the first gear-wheel meshes, a crank-
handle mounted on the shaft of the first gear-
wheel, a third shaft located below the shafts
of the gear-wheels, and having a pinion mesh-
5 ing with the second gear-wheel, the third shaft
having a projection on the opposite side of
the gearing from the crank-handle and below
the latter and adapted to have secured thereto
a tool, in combination with a base, and side
10 plates serving as bearings for the several

shafts and detachably connected together
and to the base, as set forth.

In witness whereof we have hereunto set
our hands this 25th day of March, 1896.

JOHN CAREY.
WILLIAM A. REID.

Witnesses:

E. W. CADY,
B. B. HULL.