2 Sheets—Sheet 1.

G. A. OHL.

METAL-SHAPING MACHINE.

No. 184,419. Patented Nov. 14, 1876.

Fig. 1.

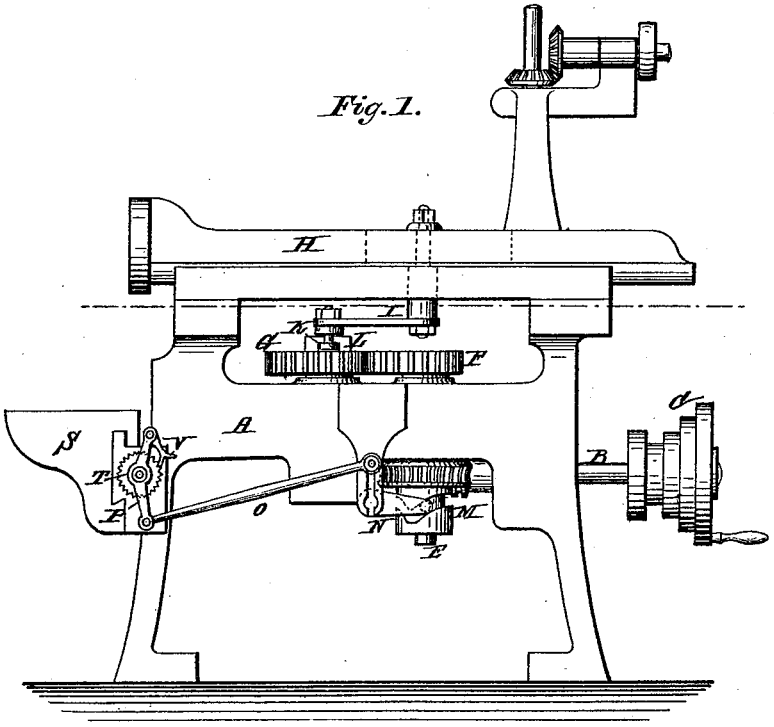
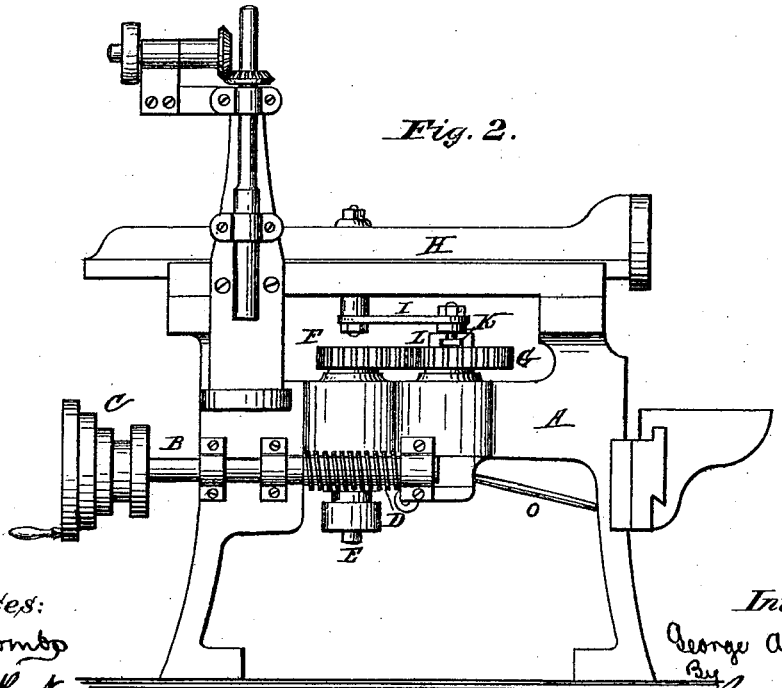


Fig. 2.



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2 Sheets—Sheet 2.

G. A. OHL.

METAL-SHAPING MACHINE.

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Fig. 3.

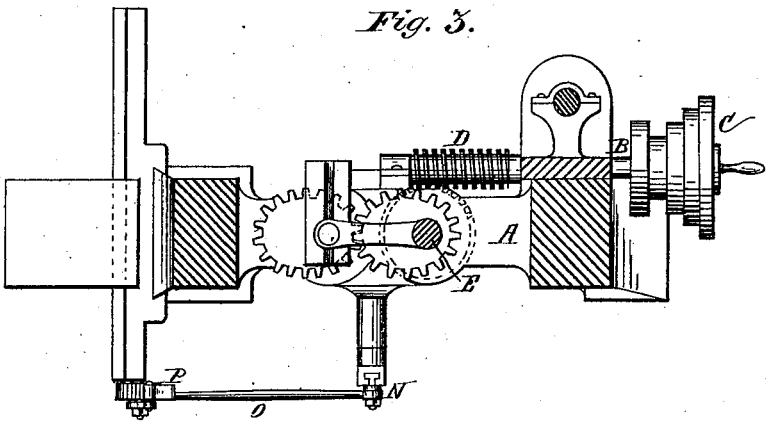
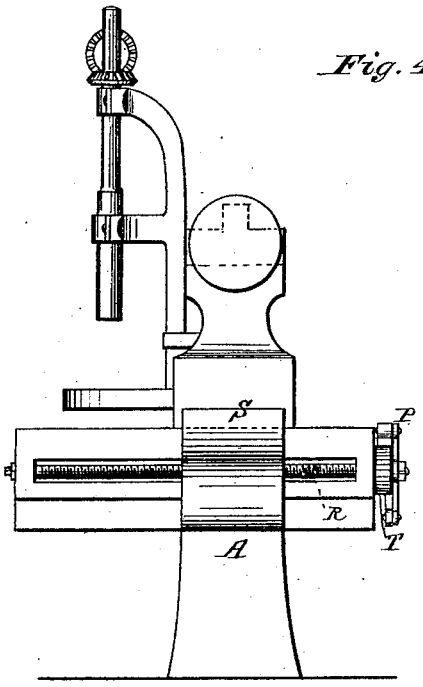


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE A. OHL, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN METAL-SHAPING MACHINES.

Specification forming part of Letters Patent No. **184,419**, dated November 14, 1876; application filed October 9, 1875.

To all whom it may concern:

Be it known that I, GEORGE A. OHL, of the city of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Shapers, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in machines for shaping or planing metal, its object being to dispense with the cog-gearing commonly employed to transmit power from the cone-pulley to the eccentric gears which give motion to the ram which carries the tool, for the purpose of securing a more uniform, steady, and powerful motion to said ram; and it consists in the combination, with the eccentric, and the ram, of a cam and lever, communicating with the feed mechanism, for the purpose of operating the same, as more fully hereinafter specified.

Figure 1 represents an elevation of one side of my improved machine, showing the devices for operating the feed mechanism. Fig. 2 represents an elevation of the opposite side of the machine. Fig. 3 represents a horizontal section, showing the mechanism for operating the ram; and Fig. 4, a front view of the apparatus, showing the feed mechanism by which the supporting table or platform is traversed under the tool.

The letter A represents the frame of the apparatus, constructed as usual; and B, the shaft carrying the cone-pulleys C. D represents a worm or endless screw, formed on the shaft B, and gearing into a worm-gear wheel mounted upon the lower end of the vertical shaft E, to the upper end of which the eccentric gear-wheel F is secured. Said gear-wheel engages and gives motion to a similar eccentric gear-wheel, G, which gives motion to the ram H through the medium of a link or rod, I, which is pivoted to the ram at one end, and to an adjustable crank-pin, K, at the other end, confined in the ways L, secured to the face of the eccentric gear-wheel G. The eccentrics are geared together relatively in such manner as to impart a slow motion to the ram while planing, and a quick motion while being withdrawn.

The letter M represents a cam secured to the lower end of the shaft E below the worm-gear wheel. Said cam operates the bent lever N, to one arm of which is adjustably secured one end of a connecting-rod, O, the other end being secured to a pawl-carrier, P, pivoted to the outer end of a leading-screw, R, which gives motion to the carriage S, which supports the work. To one end of said screw is attached the ratchet-wheel T, which is operated by the pawl V on the pawl-carrier, thus giving the proper motion to the leading-screw.

The operation of my apparatus will be readily understood from the foregoing description. Upon rotating the cone-pulley shaft in the proper direction, motion will be communicated, by means of the worm-gearing, to the shaft E and eccentric gear-wheel F, mounted thereon, and from thence to the gear-wheel G, and the ram which carries the tool. The feeding devices will be put in motion through the medium of the cam M and lever N, thus dispensing with a large portion of the cogged gearing usually employed in such machines, whereby a more powerful and steady motion is obtained, and the noise and jar of the cogs obviated.

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

In combination with the eccentrics and with the ram, a cam mounted on the shaft of one of the eccentrics, and connected with a pawl, operating a ratchet-wheel on the leading-screw of the traveling carriage, substantially as described.

GEORGE A. OHL.

Witnesses:

R. C. WEILBACHER,

GEO. W. FREY.