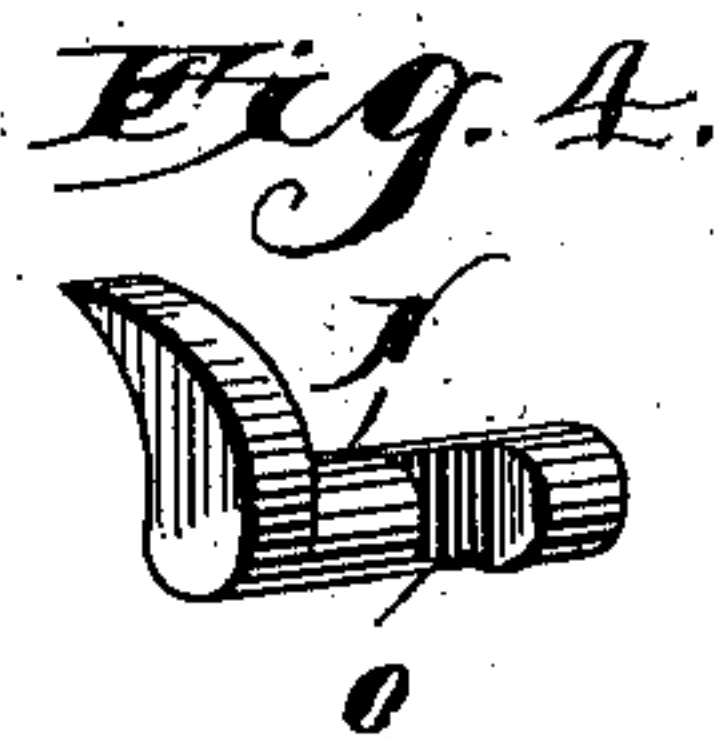
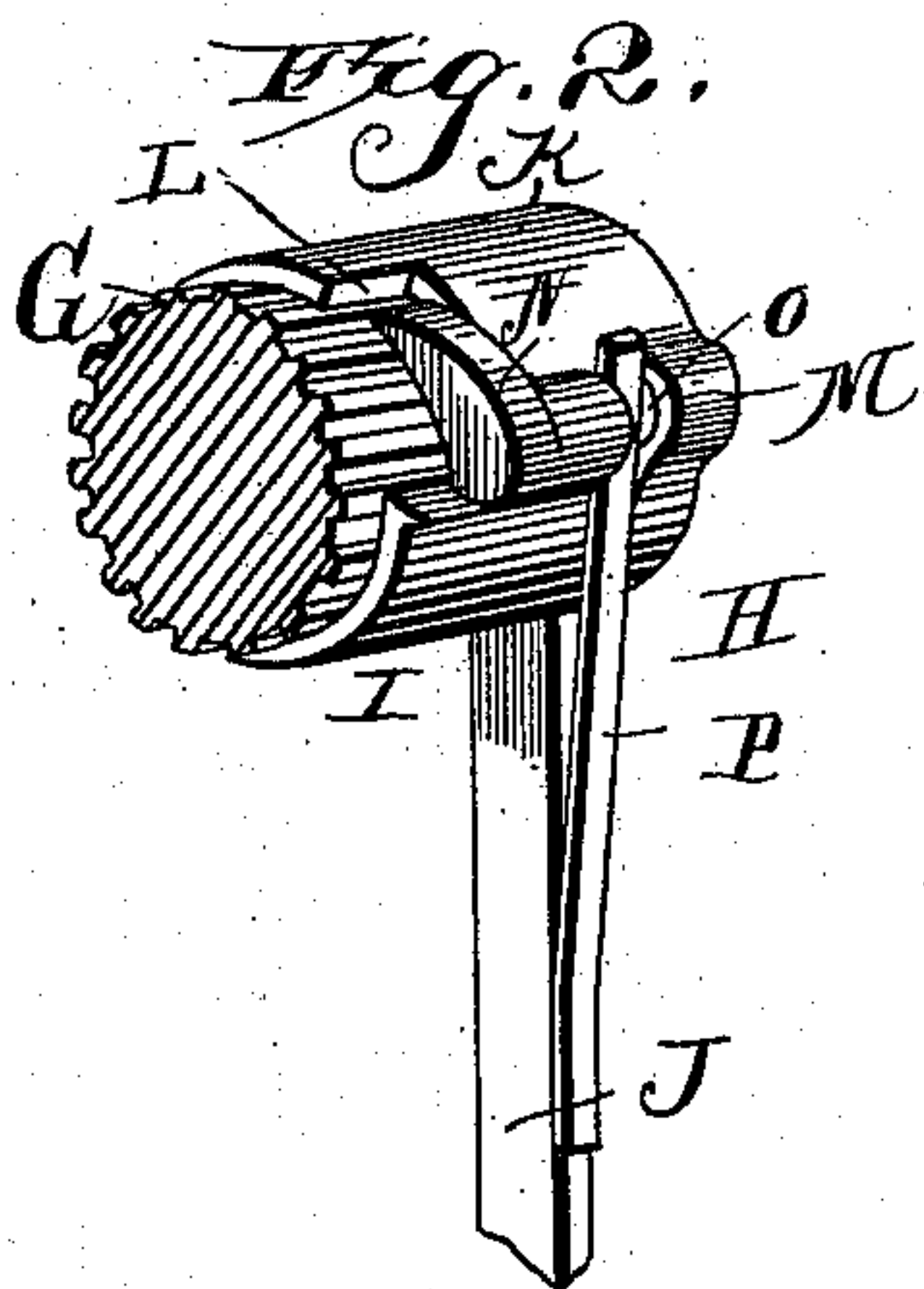
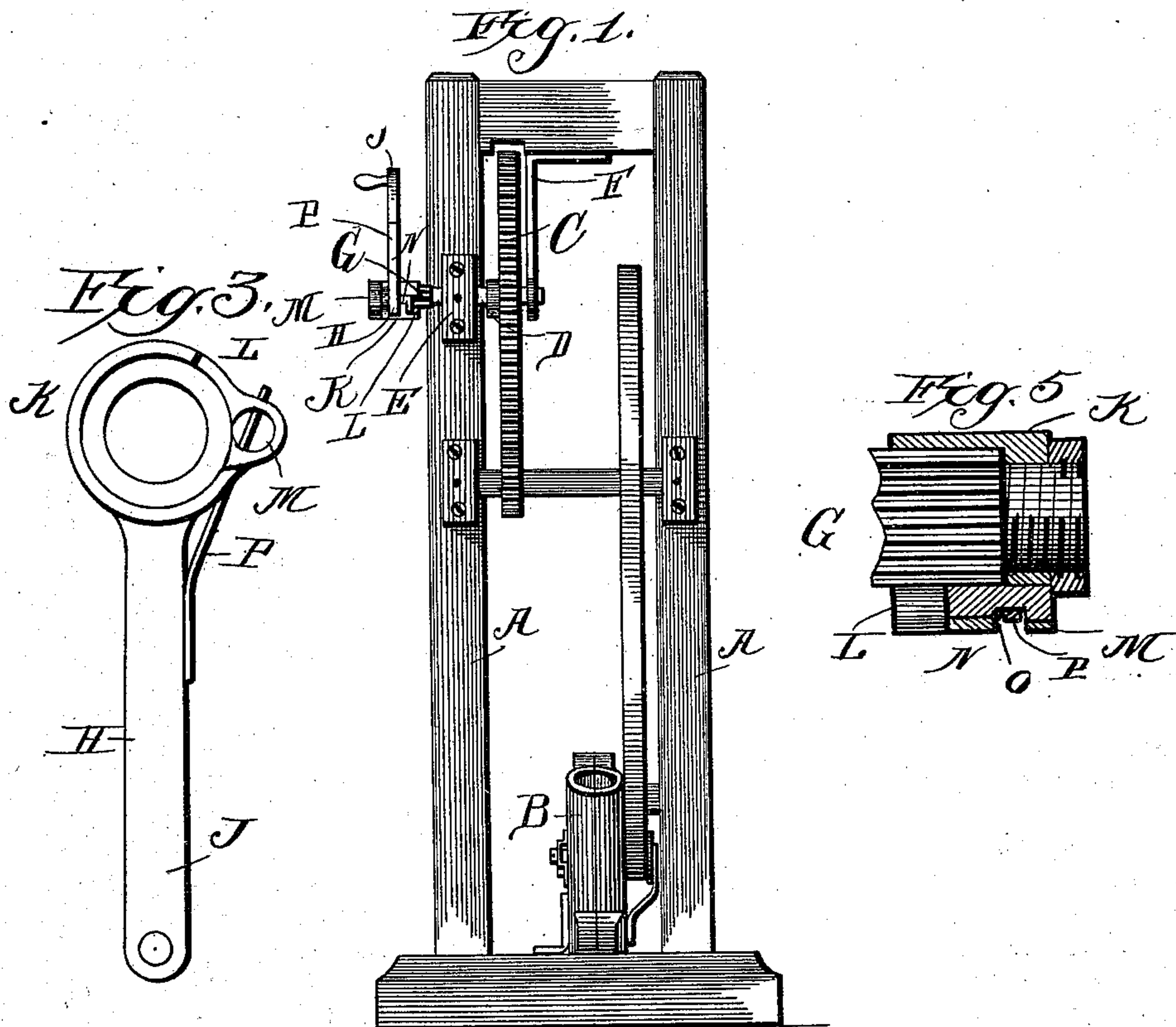


(No Model.)

S. F. ARMSTRONG.  
CRANK FOR MOTORS.

No. 402,052.

Patented Apr. 23, 1889.



Witnesses,  
Henry G. Dietrich  
R. W. Bishop.

Inventor  
Samuel E. Armstrong

By His Attorneys

*C. A. Snowdon*



# UNITED STATES PATENT OFFICE.

SAMUEL F. ARMSTRONG, OF ADAMSVILLE, ASSIGNOR TO CHARLES ROGERS,  
OF EDWARDSBURG, MICHIGAN.

## CRANK FOR MOTORS.

SPECIFICATION forming part of Letters Patent No. 402,052, dated April 23, 1889.

Application filed October 9, 1888. Serial No. 287,608. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL F. ARMSTRONG, a citizen of the United States, residing at Adamsville, in the county of Cass and State of Michigan, have invented new and useful Improvements in Cranks for Motors, of which the following is a specification.

My invention relates to improvements in cranks for motors; and it consists in certain novel features, hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a view showing my device applied to a blacksmith's blower. Fig. 2 is a perspective view of the handle and a portion of the shaft detached. Fig. 3 is a detail view of the handle with the pawl removed. Fig. 4 is a detail view of the pawl. Fig. 5 is a detail view showing the end of the shaft and the handle.

Referring to the drawings by letter, A designates the supporting-frame, B the blower, and C the driving-wheel geared to the blower and mounted on the driving-shaft D, as shown. The said driving-shaft is journaled in a bearing, E, on the side of the frame and in the end of a depending angle-arm, F, secured to the top of the frame. At or near its outer end the driving-shaft is provided with a series of ratchet-teeth, G, and beyond said ratchet-teeth it is reduced, as clearly shown.

H designates the handle, comprising the barrel I and the crank-arm J, extending therefrom, as clearly shown. The barrel I fits over the reduced end of the driving-shaft and has an enlarged portion, K, which passes around the ratchet-teeth. This enlarged portion K is cut away, as shown at L, to permit the pawl to have access to the ratchet-teeth, so as to engage the same. At its outer end the barrel I is provided with perforated lugs M, in which the pawl N is journaled, the said pawl extending inward from said lugs and engag-

ing the ratchet-teeth, as shown. The pawl is provided in one side of its pivotal portion with a groove, O, which is engaged by the end of a spring, P, secured to the crank-arm J of the handle, whereby the pawl is held in place.

In operation the handle is turned in the usual manner to rotate the driving-shaft, thereby operating the blower, as will be readily understood. When the handle is turned forward, the pawl engages the ratchet-teeth and thereby forces the shaft around. When the handle is released, the momentum of the blower and the gearing will carry the driving-shaft around for some length of time, while the weight of the handle will cause it to drop and allow the ratchet-teeth to slip past the pawl, thereby obviating the danger of the operator being struck by the handle and injured, as will be readily understood.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of the driving-shaft provided with an annular series of ratchet-teeth and having its end reduced beyond said teeth, the handle provided with a barrel fitting over the reduced end of the driving-shaft and having an enlarged portion projecting over the ratchet-teeth, the said enlarged portion having a notch in its edge, the pawl mounted on the barrel and projecting through the notch to engage the ratchet-teeth, and the spring secured to the handle and bearing upon the pawl, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

SAMUEL F. ARMSTRONG.

Witnesses:

C. M. DENNIS,  
W. H. ADAMS.