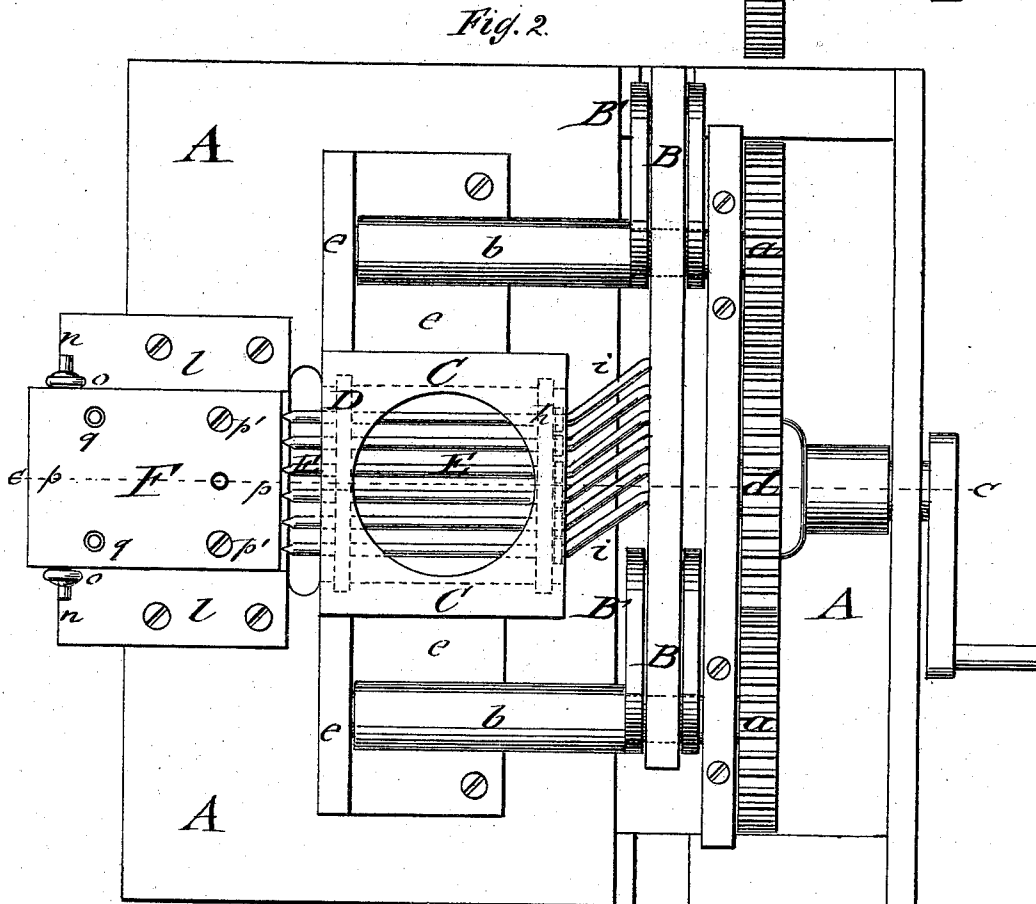
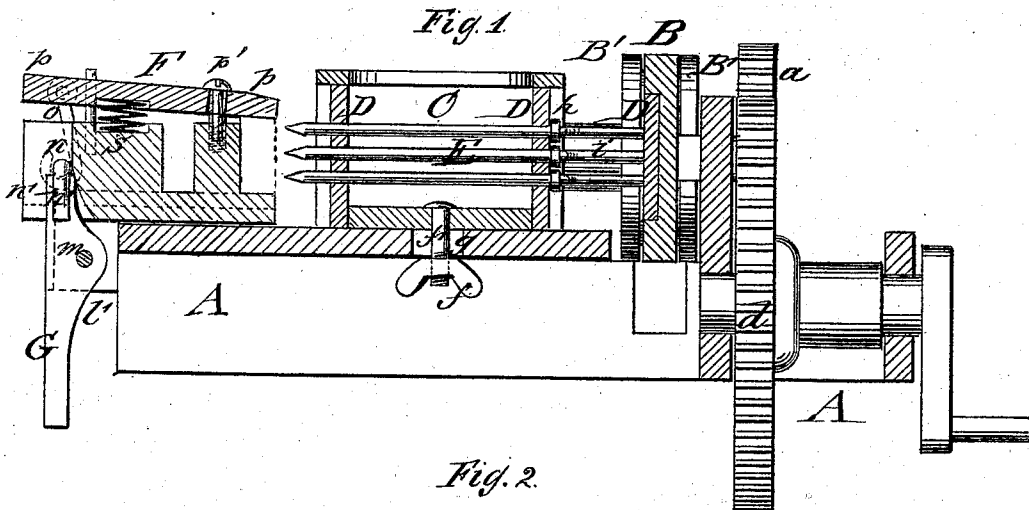


G. W. McCREADY.
Boring-Machines.

No. 147,339.

Patented Feb. 10, 1874.



WITNESSES.

E. Wolff
Seigneur

INVENTOR.

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UNITED STATES PATENT OFFICE.

GEORGE W. MCCREADY, OF PETITCODIAC, CANADA.

IMPROVEMENT IN BORING-MACHINES.

Specification forming part of Letters Patent No. **147,339**, dated February 10, 1874; application filed November 15, 1873.

To all whom it may concern:

Be it known that I, GEORGE W. MCCREADY, of Petitcodiac, in the Province of New Brunswick and Dominion of Canada, have invented a new and Improved Boring-Machine, of which the following is a specification:

The object of my invention is to provide an improved boring-machine, which is to be used in the manufacture of brushes, or for making the internal mechanisms of musical instruments, or for drilling holes into a number of articles made of iron or other metals, or for such other purposes where a number of holes are required to be bored at fixed intervals. The holes may thereby be bored simultaneously, rapidly, and evenly, economizing time and labor, and producing superior work.

The invention will first be fully described, and then pointed out in the claim.

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improved boring-machine on the line *c c*, Fig. 2; and Fig. 2 shows a plan view of the same.

Similar letters of reference indicate corresponding parts.

A represents the supporting-table and framework, to which the different parts of the boring-machine are attached. B is the driving-plate, to which motion is imparted by two cranks or eccentrics, B', which revolve with the same velocity, by means of two pinions, *a*, which are placed on the eccentric shafts *b*, and gear with the driving-wheel *d*, the shaft of which is connected to any suitable motive power. Shafts *b* turn in bearings of frame A, and in vertical standards *e*, which also guide, by their horizontal base-parts, the borer-case C. Case C is secured to table A by a binding-screw, *f*, turning on a screw-bolt, *f'*, of the bottom-plate of the same, which bolt extends through a slot, *g*, of the table A, so that the case may be brought within proper distance from the driving-plate, while lateral motion is prevented by the standards *e*. Three borer-plates, D, are perforated according to the pattern of the brush or other article to be bored, and two of them placed into case C, through which the front parts of the borers E are inserted. The third plate D is then placed

upon the heads of borers E, case C and socket-plate D being then placed in position—one on the table, the other into the central recess of the driving-plate B, to which it is firmly attached. The borers E are made with any one of the approved bits in common use, each being provided at its rear parts with a collar, *h*, and an oblique crank, *i*. The collars *h* hold the borers E in position on the second borer-plate D, during use, while the oblique cranks turn the borers. The parallel position of the cranks while turning prevents their interfering with each other, no matter how many be used or how closely they are arranged together. The firm support given by plates D to the borers E allows them to overcome the strain to which they are exposed during their work.

As the borers rotate without advancing, it is necessary to feed the articles against them by mechanical power. For this purpose I employ a feeding apparatus, into which the articles are readily placed and removed, while they are at the same time firmly clamped to prevent their splitting during the boring operation.

The feeding apparatus constitutes an essential part of my invention, and consists of a sliding-carriage vise, F, operated by a lever, G, and treadle connection. Carriage F slides between guide-rails *l*, which are screwed to table A. The downward-projecting extensions *l'* of guides *l* carry the cross-bolt *m*, to which lever G is pivoted. The upper end of lever G is provided with a cross-bar, *n*, which slides in slots *n'* of carriage F, producing thereby the forward and return motion of the carriage. Cross-bar *n* connects also with pendent links *o* of the top clamping-plate *p* of carriage G, which is adjustably attached by screws *p'* to the lateral front piece of the carriage, while its rear part is acted upon by a strong spiral spring, S, and slides on guide-pins *q*. The objects to be bored are placed in the front parts of carriage F, clamped with a vice-like grip by top plate *p*, and fed simultaneously forward against the bits on releasing lever G.

By arranging the perforated plates to correspond with any required pattern, a great

variety of applications of the machine may be obtained, while any number of borers may be employed, as their connection with the driving-plate by their parallel cranks prevents any interference of the same.

The boring or drilling of a series of holes into any article of manufacture is, by this machine, greatly facilitated and rapidly and evenly accomplished.

Having thus described my invention, I claim

as new and desire to secure by Letters Patent—

The combination, with sliding carriage F, clamp-plate *p*, screws *p'*, and spring S, of the lever G, used in connection with slots *n'* and links *o*, as and for the purpose described.

GEORGE W. McCREADY.

Witnesses:

BROUGHAM H. FREEZE,

JOHN LEWIS.