E. J. SOLIGNY.

MACHINERY FOR EMBOSSING AND CHASING METAL.

No. 173,510. Patented Feb. 15, 1876.

Fig. 1

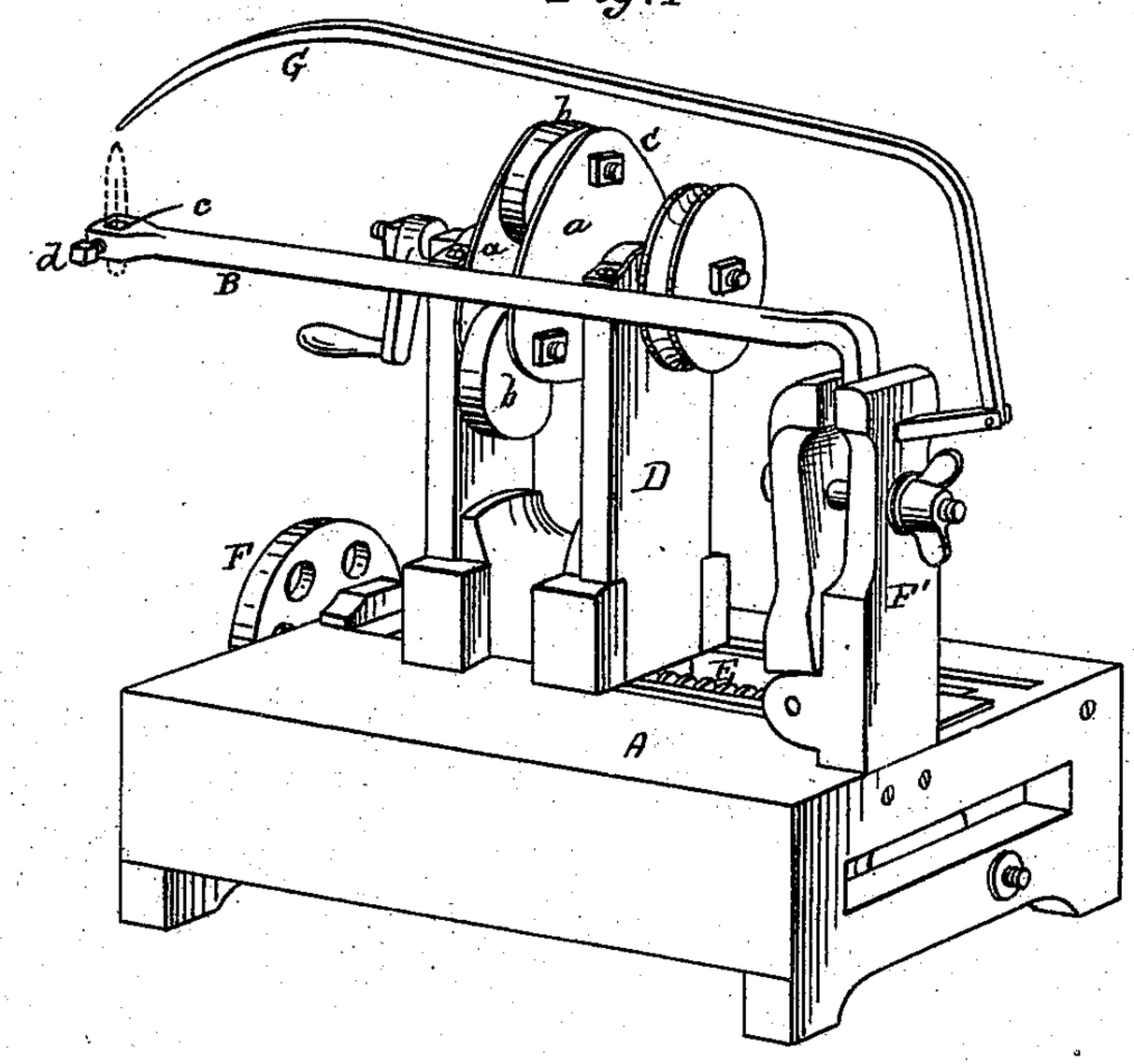


Fig. 2.

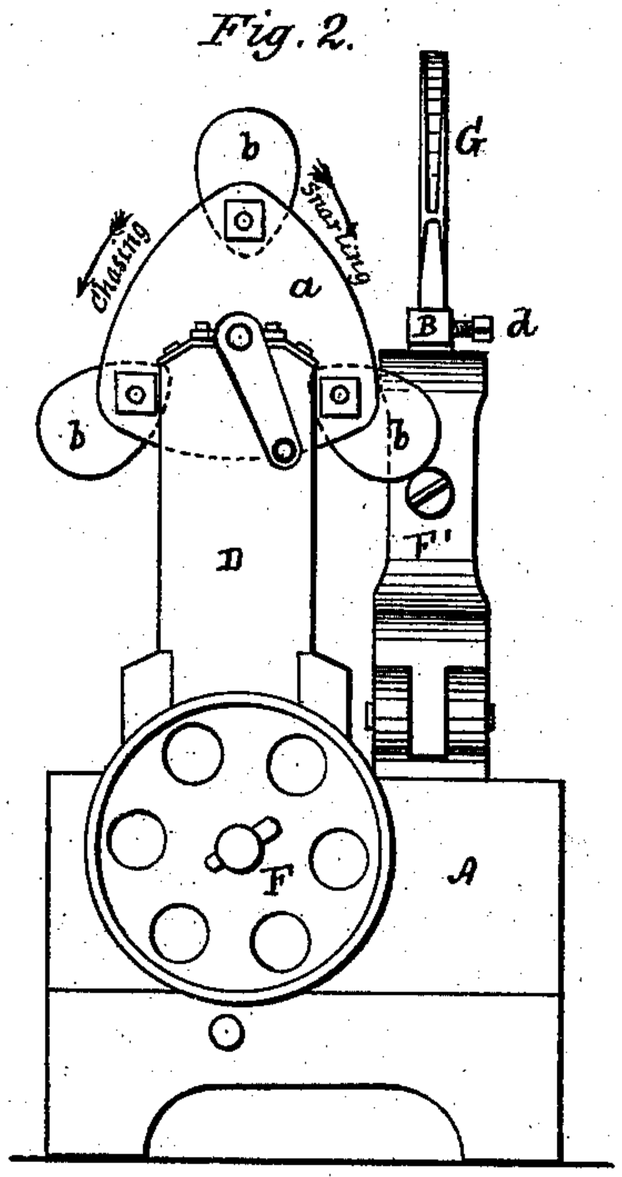
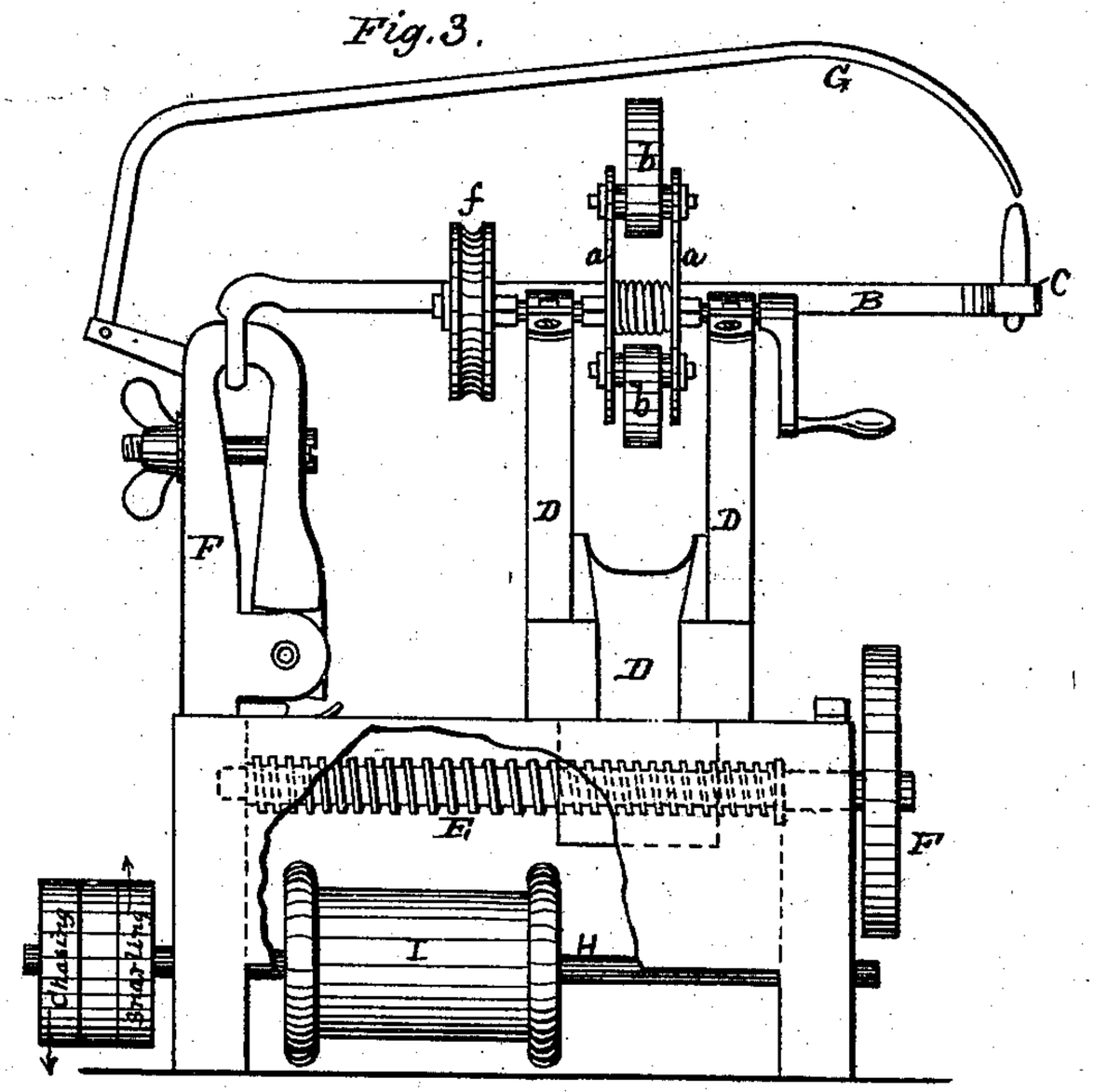


Fig. 3.



Witnesses:

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EUGENE JULES SOLIGNY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN MACHINERY FOR EMBOSSING AND CHASING METAL.

Specification forming part of Letters Patent No. **173,510**, dated February 15, 1876; application filed January 5, 1876.

To all whom it may concern:

Be it known that I, EUGENE JULES SOLIGNY, of Brooklyn, in the State of New York, have invented certain new and useful Improvements in Machinery for Snarling or Embossing and Chasing Metal, of which the following is a specification:

My invention relates to machinery for performing certain work, which hitherto, so far as I am informed, has been done for the most part, if not entirely, by hand. The particular kind of work referred to is what is known technically as "snarling" and "chasing." The operation of snarling effects the embossing, raising, or bringing out into relief of a design traced on metal.

The chasing operation is designed to planish or "rough out" certain parts, in order to produce a "mat ground."

The use of the machine I have devised supersedes entirely the old methods of snarling, while it materially aids the "chaser," by enabling him to perform quickly and more accurately certain parts of his work, which, under the methods hitherto followed, require for their completion much time and patience.

The accompanying drawing represents a machine embodying my invention.

Figure 1 is a perspective view of the machine. Fig. 2 is a front elevation, and Fig. 3 is a side elevation, of the same.

The working parts of the machine are supported in a suitable frame, A. The essential portions are the vibratory bar B, which carries the planishing, chasing, or snarling tool, and the hammer C, which strikes the bar rapidly and continuously, to maintain said bar in a state of vibration. The bar B is a spring-bar, so that when driven in the one direction by the hammer it will recoil in the opposite direction. The hammer consists of a revolving head, *a*, in which are hung a series of hammers, *b*, which are, by centrifugal action, thrown outwardly, as indicated in Fig. 2, when the head is rapidly rotated. Each hammer in its turn delivers a blow on the bar, and then folds up or back into the head *a*, so as to clear or pass by the bar.

In order to vary the force of stroke of the tool carried by the bar B, the hammer is arranged to be shifted nearer to, or farther from, the axis of vibration of the bar. The farther the hammer is from this point, the more powerful will be the stroke delivered by the tool upon the work. The adjustment of the hammer is provided for in the present instance by mounting it in a sliding carriage, D, which engages a screw-shaft, E, extending parallel with the bar B. The shaft can, by a hand-wheel, F, be rotated, and, according to the direction in which the shaft is rotated, the hammer-carriage will be moved nearer to, or farther from, the axis of vibration of the bar. The bar B is provided at its free end with a socket, *c*, to receive the suitable planishing, chasing, or snarling tool, punch, or other instrument required for the work. This socket is so formed that a tool can be inserted either from above or from below, and a set-screw, *d*, is provided to hold the tool in proper position.

In chasing it is requisite that the tool should project from the under side of the bar, for this operation is performed by striking with the tool the outer surface of the metal, which is held by the workman below the bar. On the other hand, when using the machine for snarling, the tool must project above the top of the bar, because in this kind of work the metal is above the bar and tool, and is struck from the inside, or on that surface opposite to the surface ornamented. The tool-carrying bar B is attached to a standard, F′, by some suitable clamp or fastening device. In this instance the device resembles a vise, between the jaws of which the vertical end of the bar is securely claimed.

Vertically above the point where the end of the snarling-tool comes is a pointer or indicator, G, which enables the workman to fix, with accuracy, the location of the point of the tool. This is of advantage in snarling or embossing, in which operation the work is above the tool, and the latter consequently is out of the sight of the workman. With this pointer the embosser can at once locate his tool, and can with ease "pick up" places where a little extra embossing is needed. The pointer is arranged like the leg of a compass, being hinged to the standard F, so that it may be swung toward or away from the work, as occasion demands.

When using the machine for snarling, the hammer-head is revolved so as to strike the bar B on top. When, on the other hand, the machine is used for chasing, the head is revolved in the other direction, so as to strike the bar on the under side, or from below, thus causing the tool, whether used for chasing or snarling, to deliver a yielding blow. For this purpose I provide the driving-shaft with any ordinary or suitable arrangement of shifting belts, and tight and loose pulleys, by which the motion of the machine can be reversed or arrested at pleasure. The driving-shaft of the machine is shown at H. It is provided with a pulley, I, on which runs a belt, that runs over a grooved pulley, *f*, fast on the journal or axis of the rotary hammer-head. The pulley I is a long pulley, to allow for the shifting of the belt which takes place when the hammer-carriage is adjusted or moved in one direction or the other.

I have described what I consider to be the best way of carrying my invention into effect; but it is manifest that the details of construction may be widely varied without departure from the principle of said invention. I do not, therefore, limit myself to the precise details herein shown and described; but,

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

1. An organized machine for snarling or embossing, or for chasing metal, comprising the combination of a vibratory tool-carrying spring-bar and a hammer, which delivers on said bar a succession of blows, for the purpose of putting and maintaining said bar in regular vibration, substantially as shown and set forth.

2. The vibratory tool-carrying spring-bar, in combination with the rotary hammer-head and series of hammers hung therein, for joint operation as set forth.

3. In combination with the vibratory tool-carrying bar, the hammer and hammer-supporting carriage, movable in a plane parallel with the said bar, and adjustable nearer to, or farther from, the axis of vibration of the same, substantially as and for the purposes set forth.

4. In combination with the tool-carrying bar, the pointer or indicator, under the arrangement and for operation substantially as set forth.

In testimony whereof I have hereunto signed my name this 3d day of January, A. D. 1876.

EUGENE JULES SOLIGNY.

Witnesses:
EWELL A. DICK,
JNO. D. PATTEN.