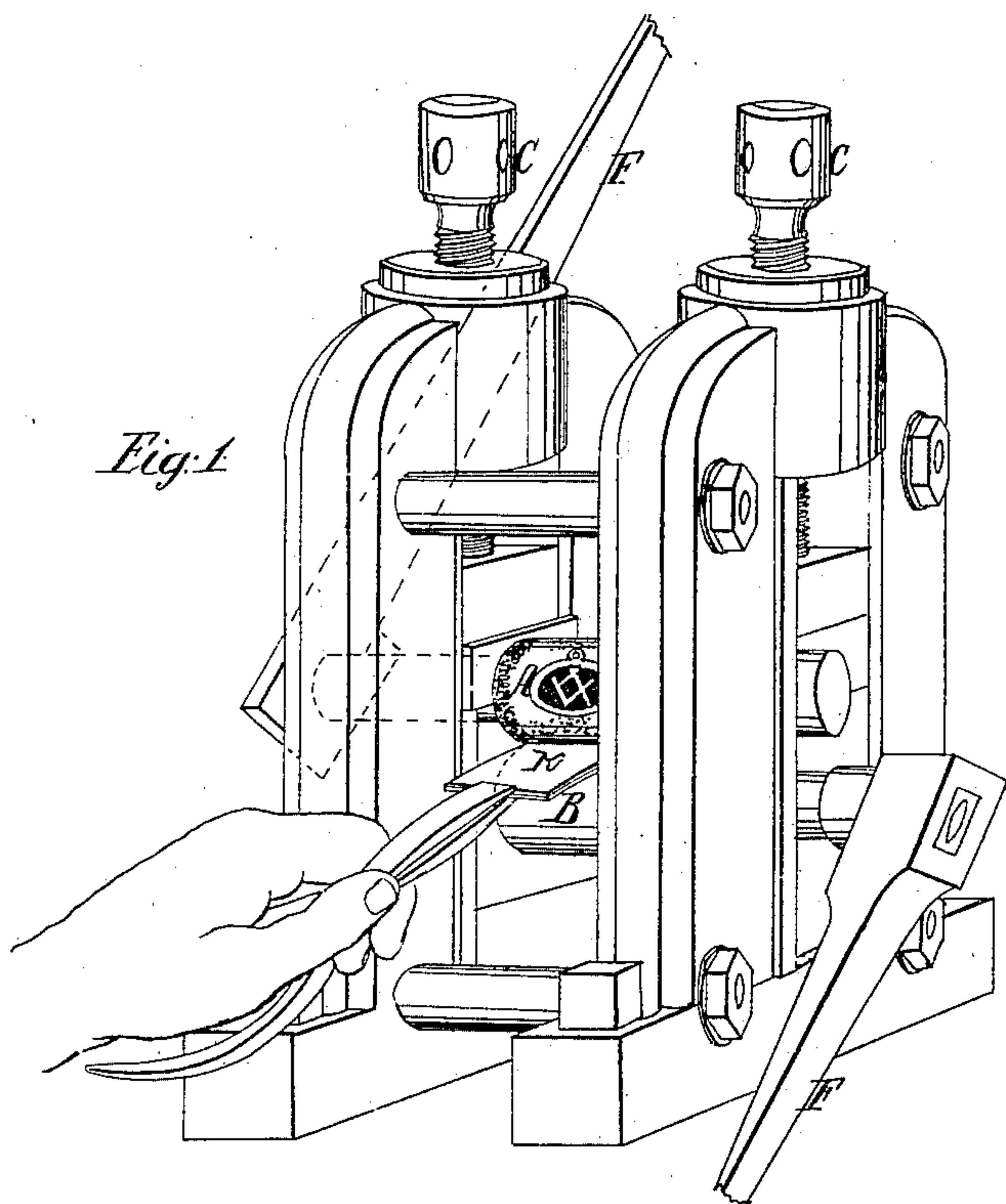


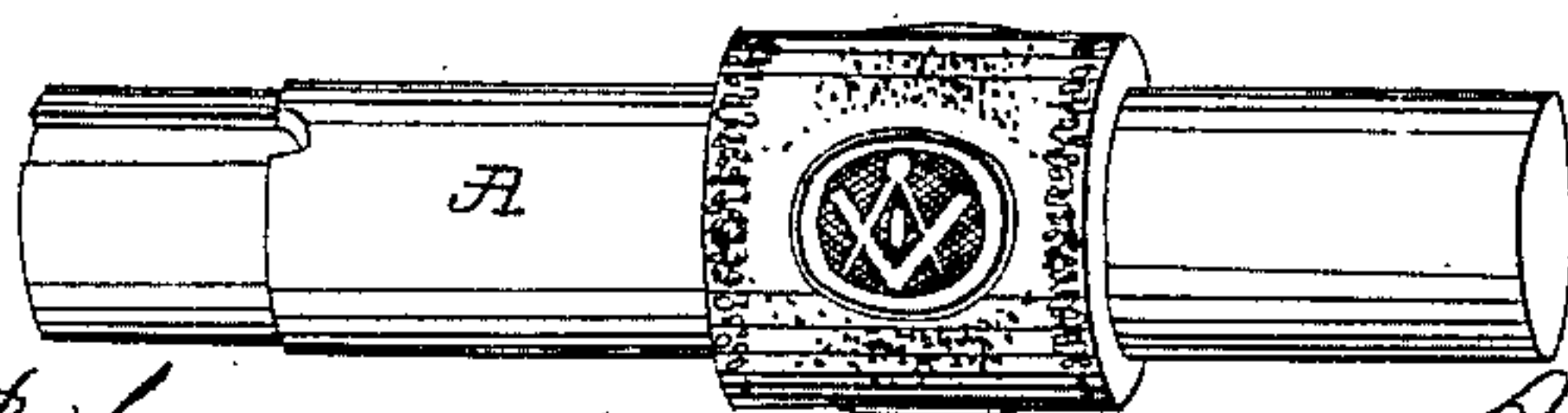
W. RIKER.  
EMBOSSING MACHINE.

No. 27,474.

Patented Mar. 13, 1860.



*Fig. 2.*



Witnesses;  
*Stephen Riker*  
*William Leach*

Inventor;  
*William Riker*



# UNITED STATES PATENT OFFICE.

WILLIAM RIKER, OF NEWARK, NEW JERSEY.

## EMBOSSING DESIGNS ON METAL FOR JEWELRY.

Specification of Letters Patent No. 27,474, dated March 13, 1860.

*To all whom it may concern:*

Be it known that I, WILLIAM RIKER, of the city of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in the method of producing impressions of designs (separate or continuous) on metals for jewelry and other purposes, by means of the use of a roller of steel or other metal, which I have denominated the "die-roll," said roll having the required figure or figures formed upon the circumference thereof, together with the method of working the metal in contact with the said die roll, substantially as hereinafter described; and I do hereby declare that the following is a full, clear, and exact description of my said invention, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a perspective view of the die roll invented by me, together with the plain roll, accompanying the same, both being fitted in appropriate frame work, with a handle adjusted to each roll, ready for operation on the presentation of the metal to be impressed as represented, and Fig. 2, is a perspective view of the die roll separate and apart from the frame, and shows the form of the same, and shows also, one of a series of separate figures or designs formed thereon.

The same letters indicate like parts in all the figures.

The method in common use of producing impressions upon sheets or pieces of metal by means of a plain drop and die is well understood, as are also the many disadvantages and inconveniences thereof, prominent among which are, first, the considerable cost of the die itself; second, its liability to crack or batter or otherwise to be so injured, as to produce imperfect work; third, the inability to produce by it successfully a class of work which requires fine tracing,—and, fourth, the necessary slowness of the whole process. To obviate all these objections, and to afford a means at once less expensive, more simple and rapid, and at the same time to produce a superior class of work, which in many essential points, shall be such, as has never been heretofore produced by the drop and die is the object of my invention.

In Fig. 2, is shown a die roll of steel carefully hardened and tempered having in this case, three separate and distinct figures engraved on its circumference. The corre-

sponding parts of the figures which require to be raised, or to project in the finished work, are sunk into the roll, and the parts, which in the finished work, are required to be sunk, or to recede in the work, are left to project upon the roll. The figures or designs, instead of being formed as represented, separate and distinct from each other, may if required be connected together or continuous in design around the whole circumference of the roll.

In Fig. 1, is seen the die roll A, in its frame, and adjusted over and above a smooth or plain roll B, which is fitted also in the frame, and so arranged that both rolls may be operated by hand in opposite directions by means of the handles F, F. The rolls being set together as firmly as required by means of the screws C, C. The manner of operating the said die roll in contact with the material to be impressed is as follows. Before inserting between the rolls the plate sheet or strip of metal, required to be impressed I first place underneath the same a corresponding plate sheet or strip of some softer metal than the one to be impressed for example, if the figure or design is to be impressed upon a plate of gold. I place underneath the gold a corresponding plate of annealed brass or composition of about the thickness of a ten cent piece, and softer than the gold, and the metals thus in contact with each other are then passed through the rolls as at K, Fig. 1. It is not essential that the under metal should be much softer than the metal to be impressed, since from the nature of the principle involved, the under metal being the softer will give way to the upper or harder metal, and thus permit the design to be properly impressed upon the upper or harder metal.

If the gold or metal to be impressed were passed singly and alone through the rolls, the effect ordinarily would be to roll out or lengthen the metal, and thus to destroy the continuity of the figure or design, and render the same worthless, for example if the design as shown in the Figs. 1, and 2, were inclosed within a circle, the effect of passing the gold or other metal to be impressed singly through the rolls, would be to produce the figure or design oval or elliptical in form. To obviate this and to produce a perfect facsimile of the design, it is necessary to employ an under softer metal as before set forth. Where the figure is in itself



oval and will bear elongating, or where the figures being distinct within themselves will bear to be stretched or connected one with another, then the under softer metal may be  
5 dispensed with, but for the most part so far as my experience has extended the under softer metal can not be successfully dispensed with, in separate and distinct designs.

10 I am now aware that engraved rolls have in some limited cases been employed somewhat in the manner indicated by me, for the purpose of impressing a single strip or sheet of metal, but I do not know or believe

that the same has ever been used in connection with an under or softer metal neither for the purpose of producing a separate and distinct figure or design.

What I claim therefore as my invention and desire to secure by Letters Patent of the United States is—

The use of the softer metal as at K, Fig. 1, substantially in the manner and for the purposes herein described.

WILLIAM RIKER.

Witnesses:

STEPHEN RIKER,

WILLIAM LEACH.