

(No Model.)

2 Sheets—Sheet 1.

W. S. EATON.
ART OF ENGRAVING.

No. 402,314.

Patented Apr. 30, 1889.

Fig. 1.

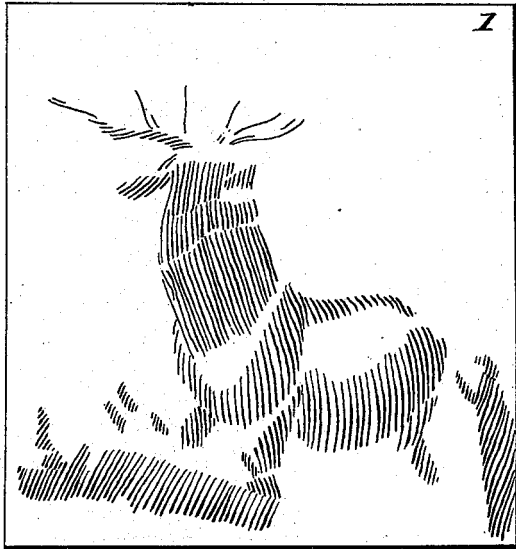


Fig. 2.

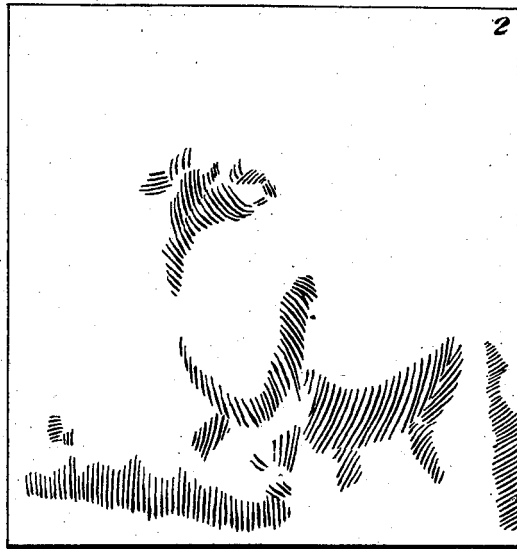


Fig. 3.

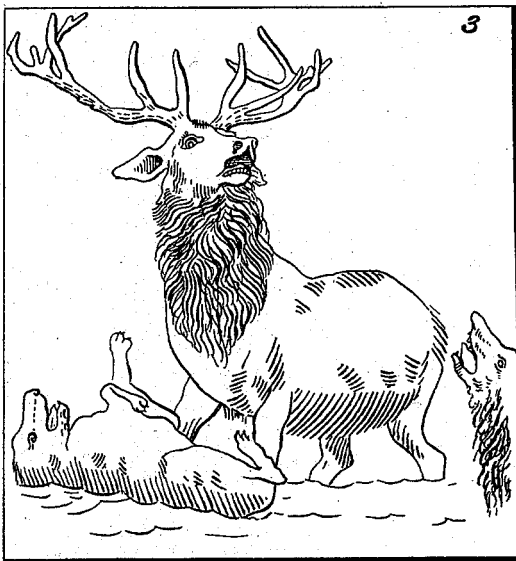


Fig. 4.



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Fig. 5.

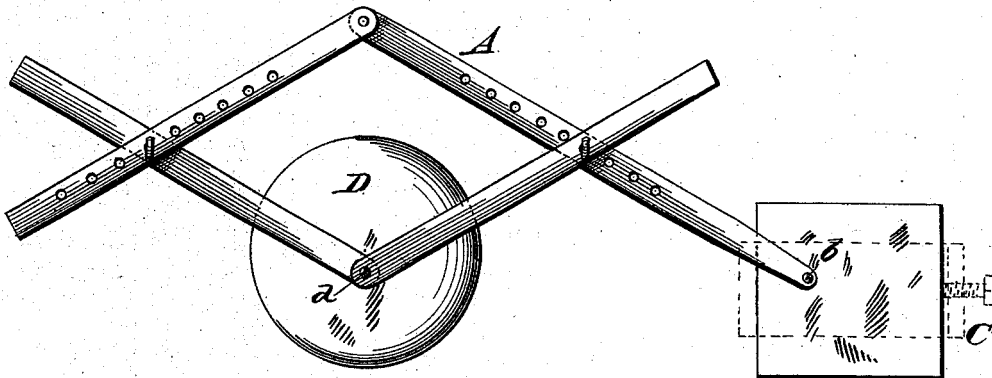


Fig. 6.

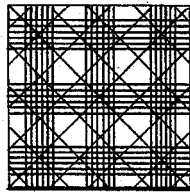


Fig. 7.

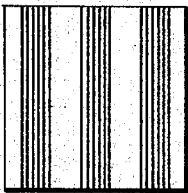


Fig. 8.

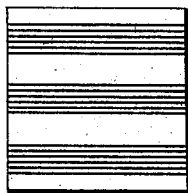


Fig. 9.

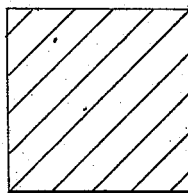
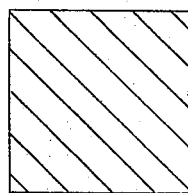


Fig. 10.



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UNITED STATES PATENT OFFICE.

WILLIAM SYLVESTER EATON, OF SAG HARBOR, NEW YORK, ASSIGNOR TO
THE FAHYS WATCH CASE COMPANY, OF SAME PLACE.

ART OF ENGRAVING.

SPECIFICATION forming part of Letters Patent No. 402,314, dated April 30, 1889.

Application filed December 28, 1888. Serial No. 294,846. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SYLVESTER EATON, of Sag Harbor, in the county of Suffolk and State of New York, have invented a new and useful Improvement in Engraving, of which the following is a full, clear, and exact description.

This invention relates to machine-engraving on metal and other surfaces by the aid of a tracing and engraving instrument, and it is more especially intended to be used for engraving decorations on watch-cases and other articles of jewelry, said decorations including flowers, birds, animals, landscapes, and other ornamental designs. In this system of engraving the tracer of the engraving-instrument has to follow in engraved lines, usually varying in depth, on a pattern-plate or model corresponding to the design to be produced or engraved upon a miniature scale on the surface to be ornamented.

My invention consists in an improvement in the art of such engraving by producing fragments of the design to be transferred upon a series of pattern-plates or models which collectively make up the whole design, and reproducing the same upon any desired scale on the surfaces to be ornamented, substantially as hereinafter described and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figures 1, 2, and 3 indicate pattern-plates having, respectively, different fragments of a complete design engraved on them; and Fig. 4 represents the complete design, which in this case illustrates certain animals. Fig. 5 is a plan view showing a tracing and engraving instrument as employed in engraving upon the back of a watch-case the fragment of a design from one of a series of pattern-plates; Fig. 6, a design of block or plaid work capable of being produced from a series of pattern-plates having different fragments of the design upon them, by way of illustrating how my invention is or may be carried into effect; and Figs. 7, 8, 9, and 10, face views of the pattern-plates from which such design is produced. In Figs. 5, 6, 7, 8, 9, and 10 the pattern-plates are shown upon a reduced scale.

In the art of engraving—as, for instance, by the process hereinbefore referred to—it is essential, more especially in such engraved work as is put upon watch-cases and other articles of jewelry, that the designs should be frequently changed. It is consequently desirable that the plates upon which the patterns or models are engraved should be of soft metal, in order that the design may be quickly erased from them and the same plates be used for other designs. To do this, however, much difficulty would be experienced if a pattern were called for which had many lines crossing each other upon it. Suppose, for instance, the design to be reproduced to be a pattern of blocks or plaid-work, such as shown in Fig. 6 of the drawings. Now, to reproduce such a design by a suitable tracing and engraving instrument—such, for instance, as a pantograph-like device—if the entire pattern were to be upon one plate, having all the lines which compose it upon said plate, then the lines which cross each other would soon become worn and blurred at the places where they cross, and the plate would in a very little time be worthless, which would cause great delay in the work to be done; but by using a series of pattern-plates each of which has only a fragment of the design upon it, and which in the aggregate make up the whole design, as shown, for instance, in Figs. 7, 8, 9, and 10 of the drawings, and in each of which the lines do not cross, then not only will the lines be easily followed by the tracer of the pantograph or other like device, but the wear on the plates will be reduced to a minimum. In thus using a series of fragmentary pattern-plates each plate shown in Figs. 7, 8, 9, and 10 of the drawings is successively placed in a suitable clamp or frame to hold it, and as soon as the lines on one of said plates are traced over another of said plates is placed in the frame, and so on successively till the several plates have been used and the design shown in Fig. 6 completed or produced upon the article to be so ornamented.

The number of pattern-plates to be used in succession, having separate and different fragments of the entire design upon them, will of course vary with the design to be produced.

The same method is used in engraving

flowers, birds, animals, landscapes, or any other ornamental design. The main idea, it should be observed, is to use successive pattern-plates for those parts of the entire design which are to be shaded darkest.

Fig. 5 of the drawings shows a pantograph-like device, A, as having its tracer *b* applied to a fragmentary pattern-plate, B, held in any suitable clamp or frame C, and its engraving-tool *d* applied to a watch-case lid, D, which may be held in a suitable chuck.

The pattern-plates having different parts of the whole design engraved upon them—that is, one part on one plate, another part on another, and the remainder of the design upon the third and fourth plates, if four plates be used—may be made of tin, brass, or other suitable material.

By using a combination of pattern-plates in the manner described I am enabled to work more quickly than could otherwise be done, and also to secure greater depth of cut and better color by the crossing and recrossing of lines one upon the other.

Figs. 1, 2, and 3 show a series of successive pattern-plates having upon them fragments of the entire design, which is one of animals, to be produced as shown in Fig. 4 of the drawings, each of said pattern-plates being used in succession. Thus when all the lines on the plate in Fig. 1 have been followed by the tracer or tracing-point of the engraving instrument, the same pattern or part of pattern, upon a reduced scale, will be left and engraved upon the watch-case lid or other article to be ornamented. The next part pattern-plate (shown in Fig. 2) is then substituted for the previous plate, and the same operation repeated to transfer its part of the design to the article. This leaves the design on the watch-case lid or other article in a more advanced stage of completion, and by reason of the crossing of the lines of the second plate and those of the first one more depth is secured. The plate shown in Fig. 2 is then re-

moved and the part pattern-plate shown in Fig. 3 put in its place, and the operation repeated as before, and so on for any number of part pattern-plates till the whole design is completed.

It will be obvious that by thus successively using a series of pattern-plates having fragments of the design upon them the work may be done very rapidly, since, if the design is properly laid out upon the plates, there need be no interfering cross-lines on any one plate. There will also be a large economy, as the plates may be much easier engraved than if there were many lines crossing on one and the same plate.

The invention is not restricted to the pantograph-like device here shown, inasmuch as any other suitable tracing and engraving instrument might be used.

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

1. The within-described improvement in the art of machine-engraving, which consists in producing a series of engraved pattern-plates, each of which has a fragment only of the design upon it, but collectively compose the entire design, and which are successively used in transferring the design to the article to be engraved, as set forth.

2. The improvement described in the art of engraving, which consists in first engraving upon a series of pattern-plates different fragments of the entire design to be produced, including lines which cross each other, and subsequently transferring on any desired scale, by a tracing and engraving instrument, successively, from said plates to the article to be engraved, the different fragments of the design, substantially as specified.

WILLIAM SYLVESTER EATON.

Witnesses:

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E. M. CLARK.