A. BOCK.

REPRODUCING MACHINE.

APPLICATION FILED JUNE 27, 1914.

1,118,729.

Patented Nov. 24, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

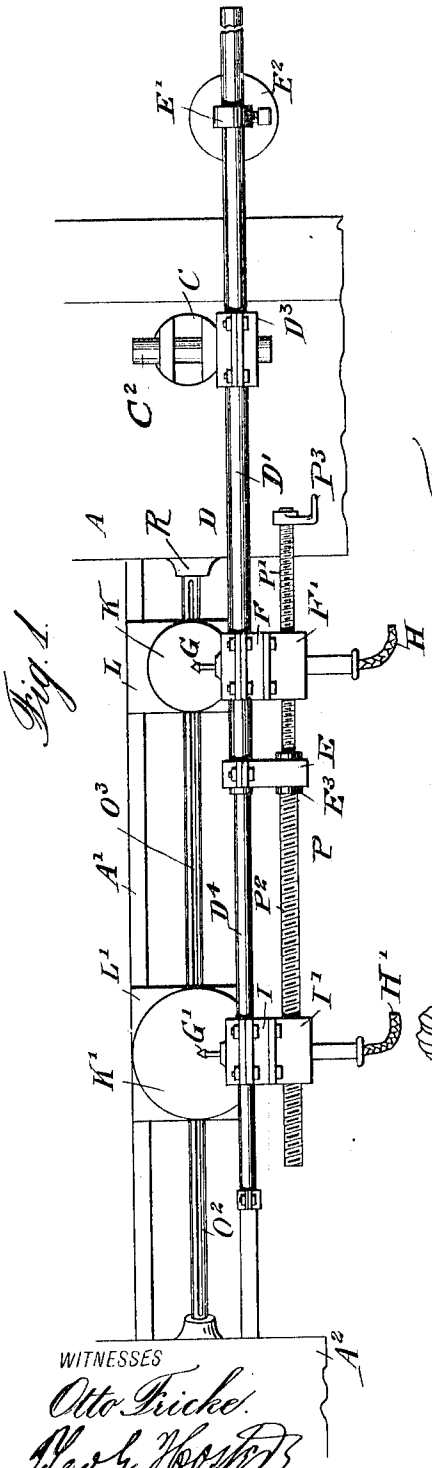
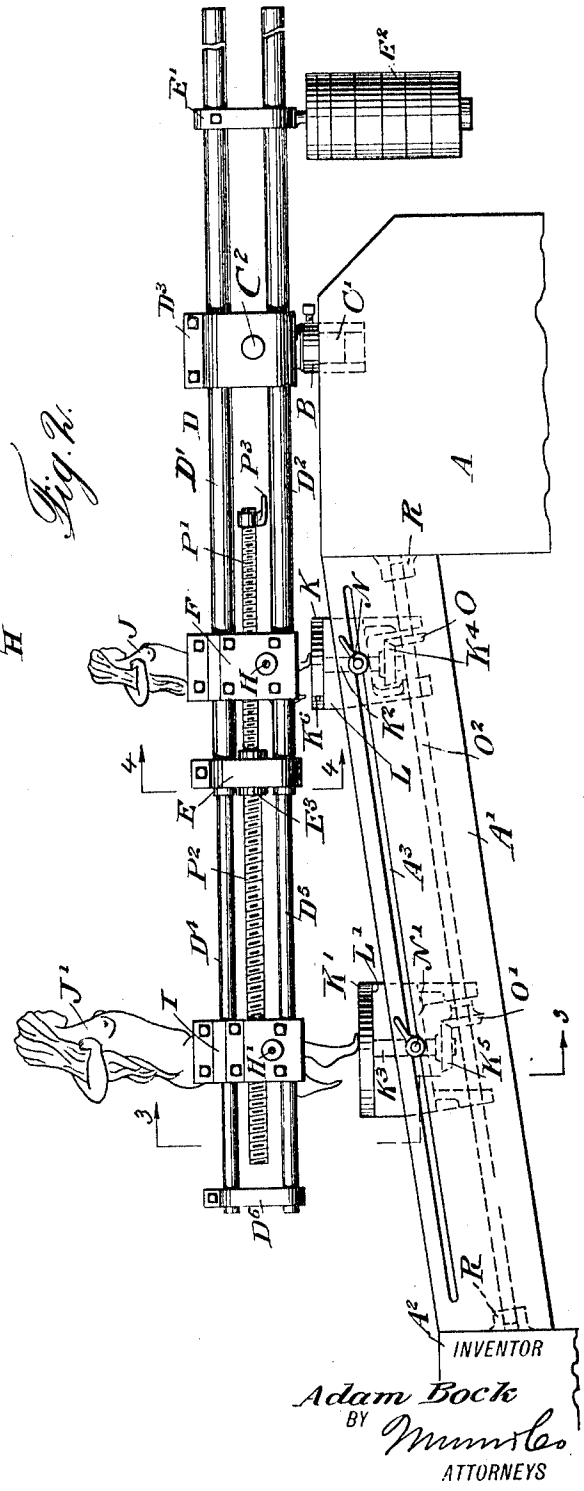


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

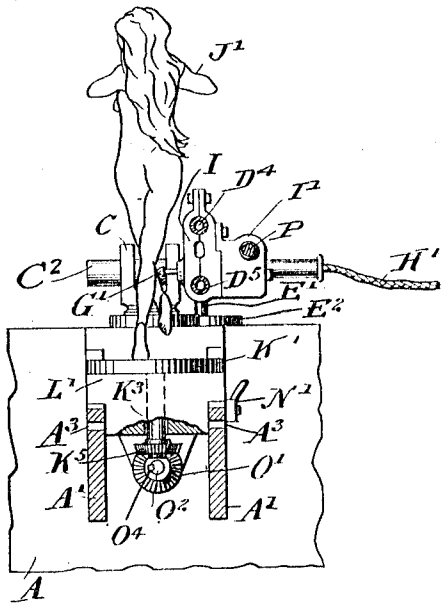
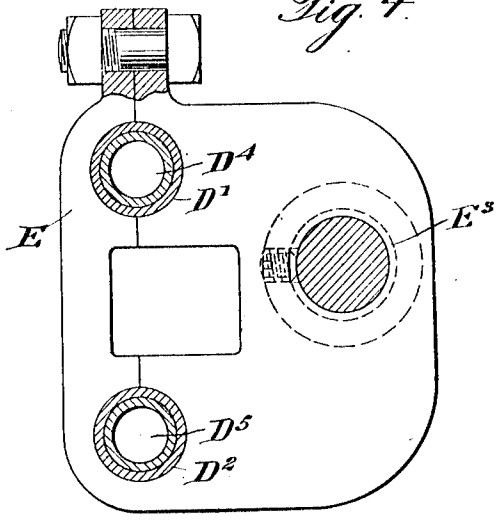


Fig. 4.



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REPRODUCING-MACHINE.

1,118,729. Specification of Letters Patent. Patented Nov. 24, 1914.

Application filed June 27, 1914. Serial No. 847,679.

To all whom it may concern:

Be it known that I, ADAM BOCK, a subject of the King of Bavaria, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Reproducing-Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved reproducing or copying machine designed for reproducing statuary, relief plates and other works of art, either of the same size as the pattern or of an increased or a diminished size, and without the aid of a skilled artisan.

In order to produce the desired result, use is made of platforms, one for supporting a pattern and the other for supporting the work, a lever mounted to swing up and down and laterally, holders adjustably mounted on the said lever, one of the holders carrying a tracer for following the contour of the pattern and the other holder carrying a carving tool for engaging the work, and means for adjusting the said holders on the lever.

A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the reproducing machine; Fig. 2 is a side elevation of the same; Fig. 3 is a cross section of the same on the line 3—3 of Fig. 2; and Fig. 4 is an enlarged cross section of the same on the line 4—4 of Fig. 2.

On a suitably constructed base A is arranged a bearing B in which is mounted to turn a vertically disposed pin C′ depending from a bearing C in which is journaled a transversely disposed pin C^2 forming the fulcrum of a lever D mounted to swing up and down on the said pin C^2 as a fulcrum and capable of swinging laterally owing to the bearing C in which the pin C^2 is journaled. The lever D is preferably formed of two tubular rods D′, D^2 connected with each other by a block D^3 carrying the pivot pin C^2, the rods D′, D^2 being also connected with each other at their forward ends by a connecting piece E and at their rear ends by a connecting piece E′ supporting a weight E^2 to counterbalance the lever and the parts mounted on the front end thereof. In the rods D′, D^2 telescope rods D^4, D^5 connected with each other at their forward ends by a connecting piece D^6. On the rods D′, D^2 of the lever D is mounted to slide a holder F carrying a tracer G or a carving tool G′ connected by a flexible shaft H with a motor for rotating the carving tool G′. On the rods D^4, D^5 is mounted to slide a holder I carrying a tracer G or a carving tool G′ connected by a flexible shaft H′ with a motor for rotating the carving tool G′. When it is desired to reproduce, for instance, a statue J on a larger scale, then the holder F is provided with a tracer while the holder I is provided with a carving tool. When it is desired to reproduce such a statue on a smaller scale, then the tracer is used in the holder I and a carving tool is employed on the holder F.

In order to support the pattern J and the work J′ to be reproduced, use is made of platforms K and K′ arranged on top of supports L and L′ mounted to slide on an inclined guide A′ attached at one end to the base A and at its other end to a second base A^2, the said bases A and A^2 and the guideway A′ constituting the framework of the machine. The supports L and L′ are adapted to be fastened in place by suitable clamping screws N, N′ engaging a slot A^3 arranged on the guideway A′. The platforms K and K′ are provided with depending shafts K^2, K^3 journaled in the supports L, L′ and provided at their lower ends with bevel gear wheels K^4, K^5 in mesh with bevel gear wheels O, O′ secured on a shaft O^2 journaled in suitable bearings R arranged on the bases A and A^2, it being understood that the shaft O^2 is inclined and parallel to the slot A^3. The platform K is provided with spanner openings or recesses K^6 to permit the application of a spanner wrench or other tool with a view to allow the operator to turn the platform K whereby a like turning motion is given to the platform K′ by the gearing described so that the platforms K and K′ rotate in unison. The shaft O^2 is provided with a key-way O^3 into which fit keys O^4 on the gear wheels O and O′ to allow adjustment of the supports L and L′ toward or from each other without disconnecting the gearings.

In order to obtain the desired proportion between the pattern and the work, it is necessary to adjust the holders F and I toward or from each other and relative to the pivot pin C^2 of the lever D. For this purpose the holders F and I are provided with nuts F′ and I′ in which screw the threaded

portions P′ and P² of a screw rod P mounted to turn in a bearing E³ arranged on the connecting piece E previously mentioned. The threaded portions P′ and P² are of a different pitch and the screw rod P is provided at one end with a suitable handle P³ to permit the operator to turn the said screw rod with a view to move the holders F and I toward or from each other at a different ratio according to the scale on which the work is to be reproduced from the pattern.

When the work J′ to be reproduced is to be on a larger scale than the pattern J then the latter is placed on the platform K and the work is placed on the platform K′, the said platforms K and K′ being moved a distance apart according to the relative proportion between the pattern and the work, and in a like manner the holders F and I are spaced apart so that the centers of the tracer G and the carving tool G′ are in a vertical transverse plane passing through the centers of the platforms K and K′. The carving tool G′ is rotated and the operator having hold of the lever D swings the same up or down and laterally to cause the tracer G to follow the contour of the pattern J thus causing the tool G′ to carve the work J′ correspondingly. As the work progresses the operator turns the screw rod P so as to move the tracer G and the tool G′ in the proper proportion in a lengthwise direction according to the thickness of the pattern J and the work J′, and the operator periodically turns the platforms K and K′ so as to cause the carving tool G′ to act on the work on the corresponding parts with a view to completely finish the work according to the pattern.

The reproducing machine shown and described is comparatively simple and durable in construction and can be readily adjusted for reproducing a statue, panel or other work of art on a larger or a smaller scale. For panel work it is not necessary to revolve the platforms K and K′ as the depth of the work is readily obtained by swinging the lever D laterally.

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

1. A reproducing machine, comprising platforms for supporting a pattern and the work, a lever mounted to swing up and down and laterally, holders adjustably mounted on the said lever, one of the holders carrying a tracer for following the contour of the pattern and the other a carving tool for engaging the work, and means for adjusting the said holders on the lever.

2. A reproducing machine, comprising platforms for supporting a pattern and the work, a lever mounted to swing up and down and laterally, holders adjustably mounted on the said lever, one of the holders carrying a tracer for following the contour of the pattern and the other a carving tool for engaging the work, and means for proportionately adjusting the said holders one relative to the other and to the fulcrum of the lever.

3. A reproducing machine, comprising platforms for supporting a pattern and the work, a lever mounted to swing up and down and laterally, holders adjustably mounted on the said lever, one of the holders carrying a tracer for following the contour of the pattern and the other a carving tool for engaging the work, a bearing held on the said lever, a screw rod mounted to turn in the said bearing and having threaded portions of different pitch, and nuts on the holders and in which screw the said threaded portions of the screw rod.

4. A reproducing machine, comprising platforms for supporting a pattern and the work, a lever mounted to swing up and down and laterally, holders adjustably mounted on the said lever, one of the holders carrying a tracer for following the contour of the pattern and the other a carving tool for engaging the work, means for adjusting the said holders on the lever, and means for turning the said platforms in unison.

5. A reproducing machine, comprising platforms for supporting a pattern and the work, a lever mounted to swing up and down and laterally, holders adjustably mounted on the said lever, one of the holders carrying a tracer for following the contour of the pattern and the other a carving tool for engaging the work, supports on which the platforms are mounted to turn, an inclined guideway on which the said supports are mounted to slide, and means for turning the said platforms in unison.

6. A reproducing machine, comprising platforms for supporting a pattern and the work, a lever mounted to swing up and down and laterally, holders adjustably mounted on the said lever, one of the holders carrying a tracer for following the contour of the pattern and the other a carving tool for engaging the work, supports on which the platforms are mounted to turn, an inclined guideway on which the said supports are mounted to slide, an inclined shaft, and gearings connecting the said inclined shaft with the said platforms to rotate the platforms in unison.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADAM BOCK.

Witnesses:
THEO. G. HOSTER,
GEORGE H. EMSLIE.