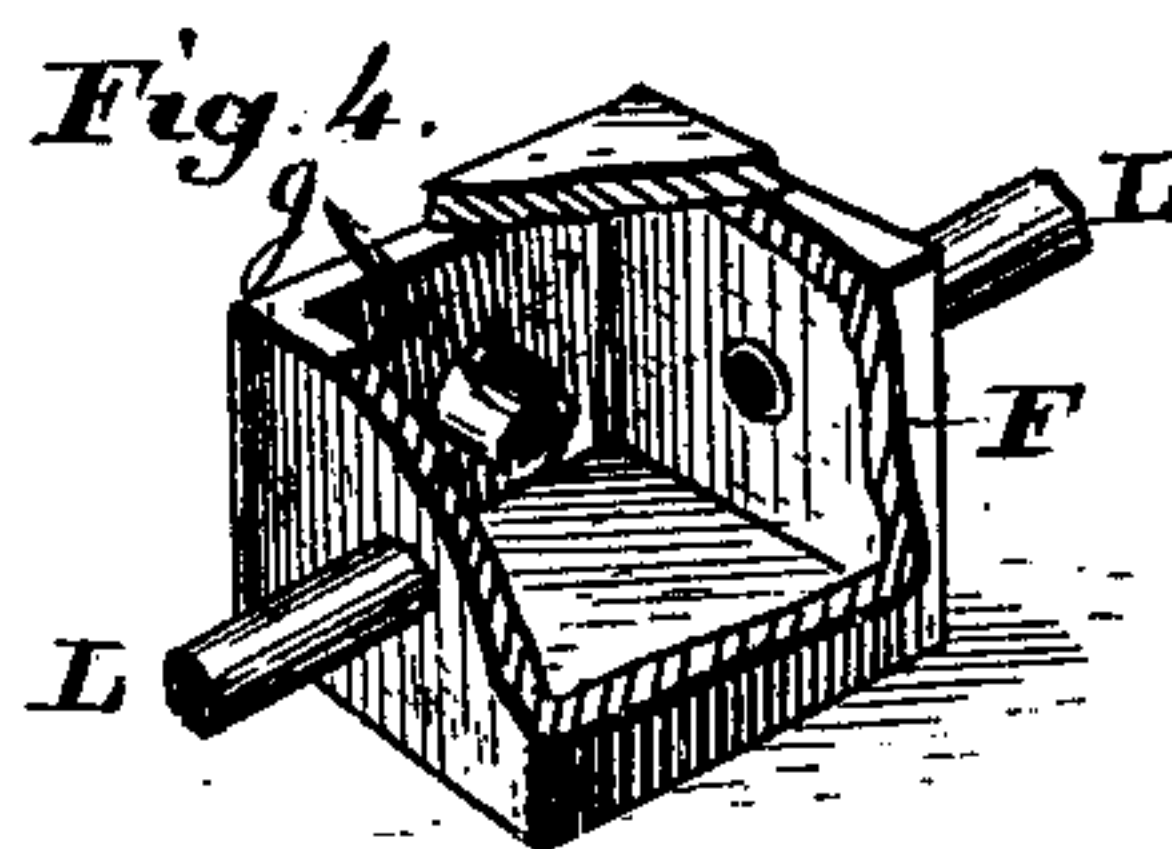
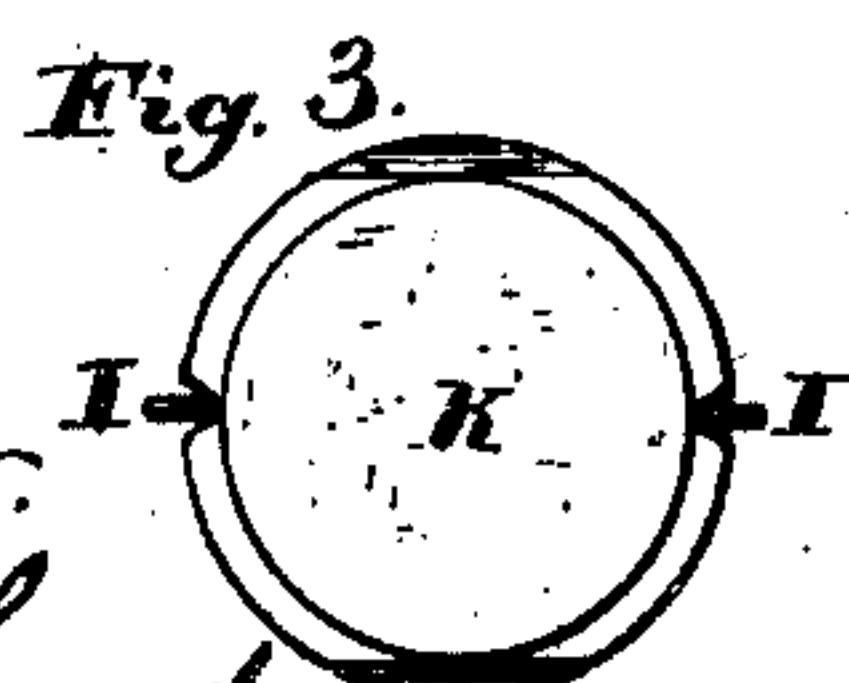
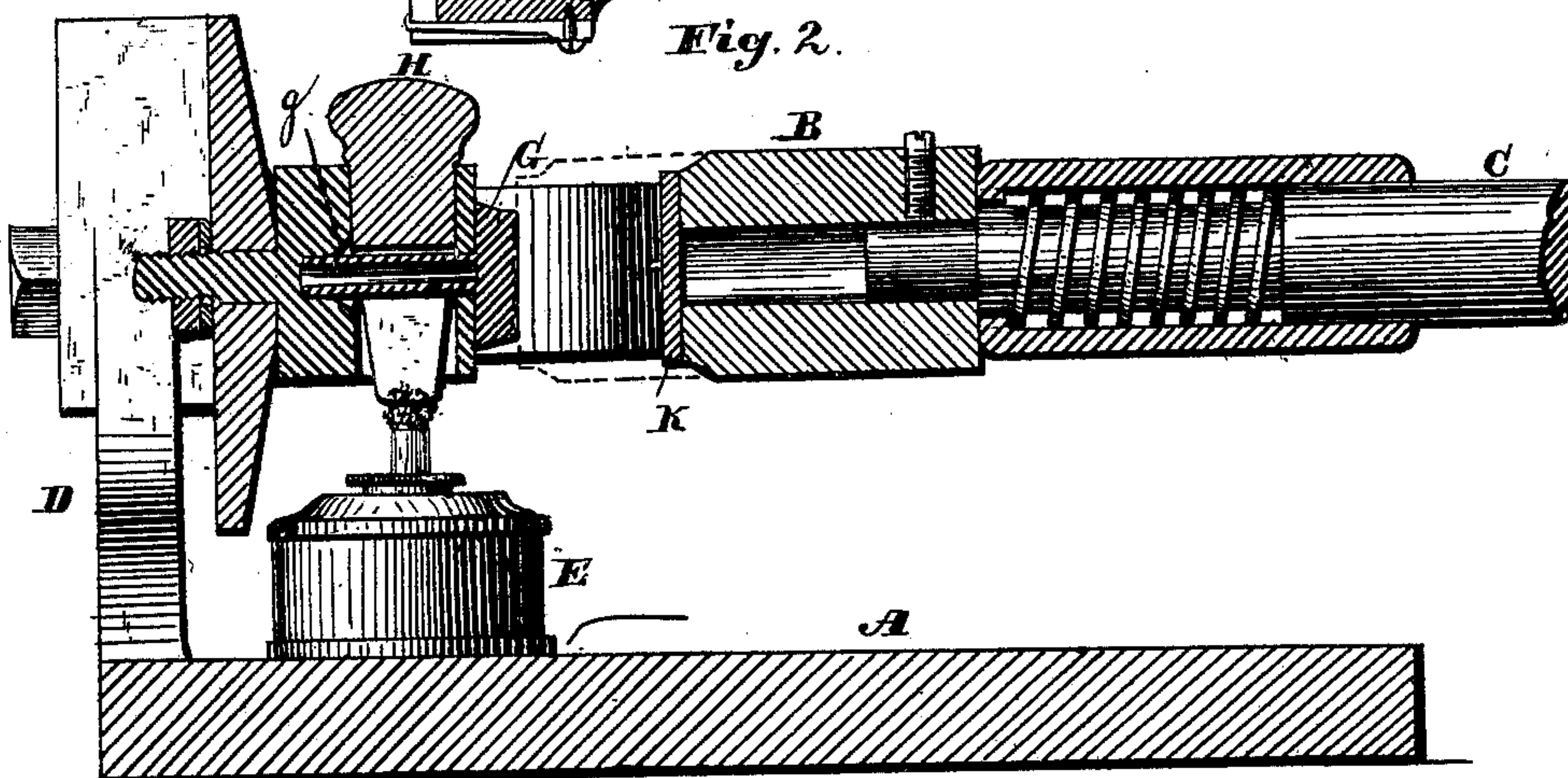
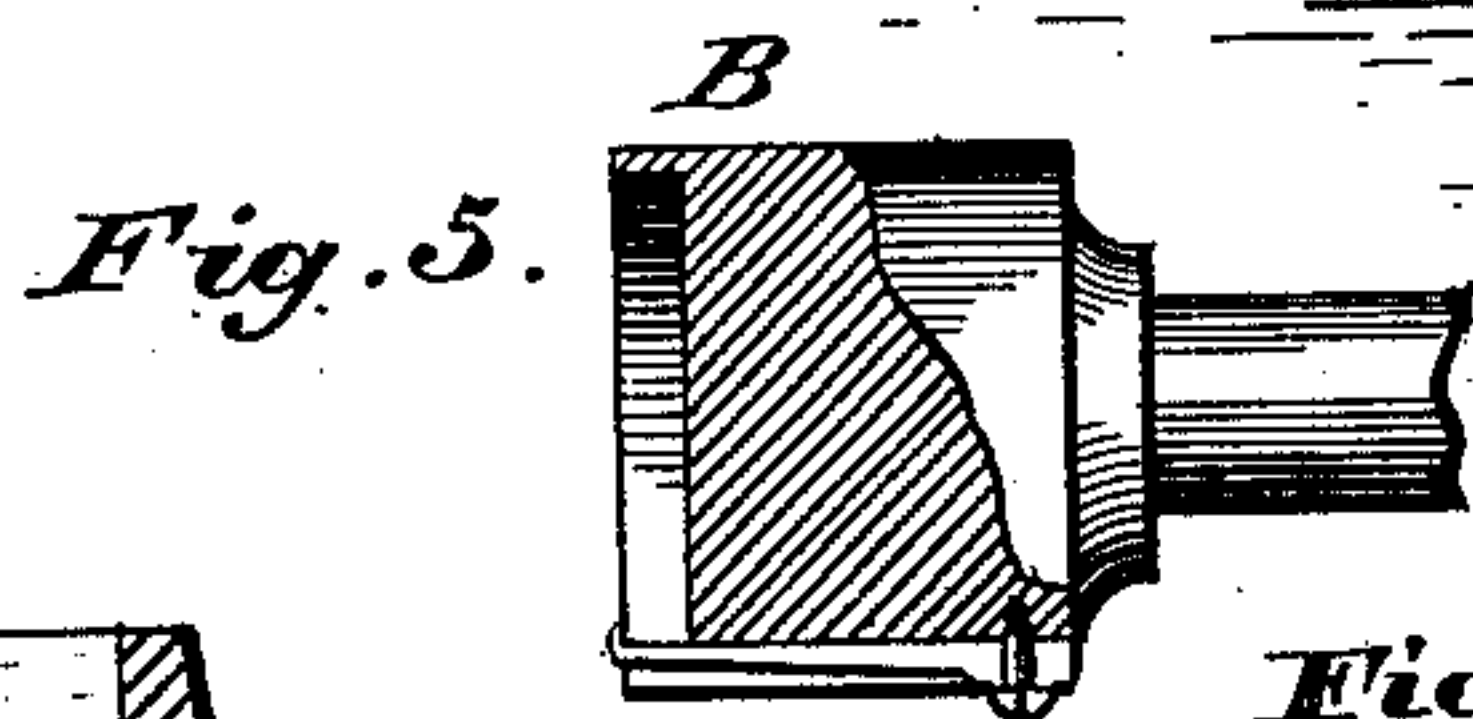
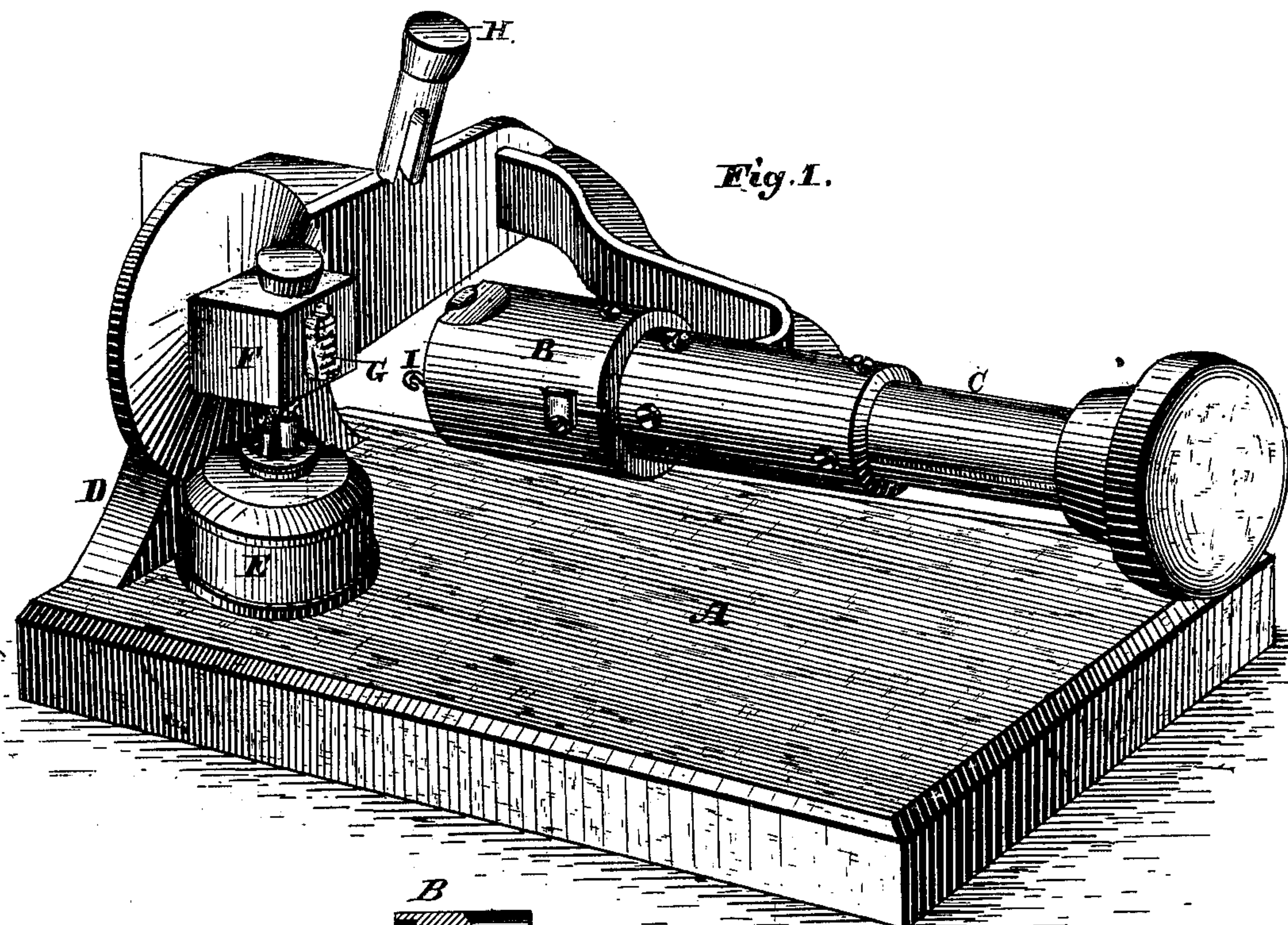


(No Model.)

F. W. MARTIN.
Ornamentation of Wood.

No. 231,233.

Patented Aug. 17, 1880.



Attest:
J. Henry Kaiser.
William S. Leonard.

Inventor:

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UNITED STATES PATENT OFFICE.

FREDERICK W. MARTIN, OF NORWICH, CONNECTICUT.

ORNAMENTATION OF WOOD.

SPECIFICATION forming part of Letters Patent No. 231,233, dated August 17, 1880.

Application filed June 16, 1880. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. MARTIN, of Norwich, New London county, and State of Connecticut, have invented a new and useful Improvement in the Process of Wood Ornamentation and in Machines for carrying out the same, of which the following is a specification.

My invention relates to improvements in processes of wood ornamentation in which the wood, bone, or ivory to be ornamented is coated with varnish, which varnish is afterward removed from the wood in just those parts which are to be colored or ornamented. Color is then dabbed or brushed in and set with an acid. The remainder of the varnish is then removed.

My invention consists in an essential improvement of the old process, by which the varnish is at once removed from all parts desired to be colored at a single operation, instead of the slow method of cutting it carefully out, the said improvement being the burning out of the parts to be colored by means of a male die upon which the proposed ornamentation is cut; and my invention also consists of a novel machine for carrying into effect this new process of burning out the varnish.

In the drawings, illustrating my wood-machine, Figure 1 is a perspective view of the same; Fig. 2, a longitudinal section; Fig. 3, an end view of the presser with a piece of wood or bone to be ornamented held in place by springs. Fig. 4 is a modification of the devices for heating the male die; Fig. 5, end of presser, partly in section.

Similar letters refer to similar parts in all the views.

A is the bed-plate or frame upon which are mounted the various working parts of the machine. B is the presser which carries the block to be ornamented; C, the spring plunger or piston for operating the same. D is an upright end piece secured upon the bed-plate. E is a lamp used for heating the male die. F is the heating-chamber, to which the die G is secured by a tubular shaft, *g*. H is a plug of iron or any metal, forked at its lower end, to pass over the shaft *g*. I I are springs upon the side of the presser, which serve to retain the block K, which is to be ornamented.

L L are pipes entering and leaving the cham-

ber F, which can be used in place of the lamp whenever it is preferred to heat the die by steam.

It is to be understood that I apply this process and use the machine for any sort of ornamentation of wood, bone, ivory, or kindred substance, or the lettering or putting on of flowers or designs of any sort.

I first cover the material to be ornamented with an etching varnish, which is composed of white shellac, gum-mastic, sandarac, and seed-lac dissolved in alcohol. Now, instead of cutting out the pictures which are to be colored, I have a male die upon which the desired ornamentation is raised. I heat this die and press it directly upon the varnish. This instantly, at a single operation, removes the varnish, leaving sharp outlines to the ornamentation. I now apply nitro-muriate of tin and colors like, for example, the aniline colors or chrome for black. After the colors are dabbed or brushed in, all the remainder of the varnish is removed by alcohol. The heated male die makes no mark whatever on the wood, but simply and instantaneously burns off the varnish, so that it may take the various colors to form letters, figures, &c., as required. If several colors are to be employed a separate die is, of course, used for each color, and after each color is applied the whole surface is again varnished, to be again burned out when a new color is to be added.

The above is the novel process which I have invented, and it may be carried out by a die operated by heat.

The next part of my invention is a novel instrument to greatly facilitate and perfect the working of the above process.

The block of wood or ivory is fitted to the bottom of the presser B and held in place by side springs. It is to be understood that the bottom of this chamber is to have a recess of a shape to conform to any shapes of wood or ivory which are to be ornamented or lettered or in any way decorated. The shape of the recess in the particular machine shown is round, to contain organ-stops or checks, and shows, in Fig. 3 of drawings, the piece of bone or ivory K, held in place by the springs I I. This piece of material, in the form I have chosen to illustrate my machine, is to be let-

tered with the word "flute," which will be seen on the block G, secured to the heating-chamber F. It will be seen that the forked block H is removable for heating, and if it is desired
 5 not to use the lamp, or a gas-burner, or steam, this block can be heated in a fire and then quickly placed in the said chamber F across the tubular support *g* of the die. This will ordinarily be sufficient for burning out the var-
 10 nish from several pieces. In case, however, a large number of blocks are to be lettered or ornamented the lamp E is employed to keep the die constantly heated. If preferred, other chambers may have steam passed into them,
 15 as illustrated in a modification shown in Fig. 4 of the drawings.

The operation of my new process as carried into effect by my machine is as follows: The block K is first varnished, as above described,
 20 and when thoroughly dry is placed in the end of the presser, where it is held by springs the ends of which are rounded to permit of pushing the block readily to its place. The block H is then heated and placed in position, or the
 25 lamp is lighted, or steam admitted to chamber F. This soon heats the die G. The spring piston or plunger is operated to force the block K against the heated die. This instantly burns out the varnish in the form of the word "flute."
 30 The block is then removed and color brushed in or put in in any way. The color, of course, can only take just precisely where the varnish has been burned out by the male die. This die is removable and can be exchanged for one
 35 containing any word or picture desired. It

may be, and I intend to use it of a size to burn out at once the entire decoration or ornamentation of a wooden panel. It is, of course, evident that the spring-plunger may be operated
 40 by hand, or by a treadle-movement, or in any approved way of applying power. The plunger may, of course, be upright, and it may carry the die, and the bed-plate holds the wood to be ornamented, the only essential being
 45 that a power-moved spring-plunger shall bring a heated die and the material to be decorated together or in contact.

What I claim as my invention is—

1. The within-described process of ornamenting wood, ivory, or kindred substance, consisting of the following steps, to wit: first, var-
 50 nishing the material to be ornamented; next, removing the varnish by a heated die from the parts which are to take the color; then applying the color; and lastly, removing the varnish,
 55 all substantially as above described.

2. In a machine for ornamenting wood, the combination and arrangement, substantially as described, of the following instrumentalities, viz: a plunger recessed at its end and
 60 carrying springs to secure a piece of material to be ornamented, a male die of the design to be applied, and a heating-chamber to whose face the die is secured, all as and for the purposes set forth.

FREDERICK W. MARTIN.

Witnesses:

WILLIAM S. CONGDON,
 CHAS. W. SPALDING.