

No. 789,625.

PATENTED MAY 9, 1905.

C. G. PETIT.
PROCESS ENGRAVING.
APPLICATION FILED JULY 9, 1904.

Fig. 1.

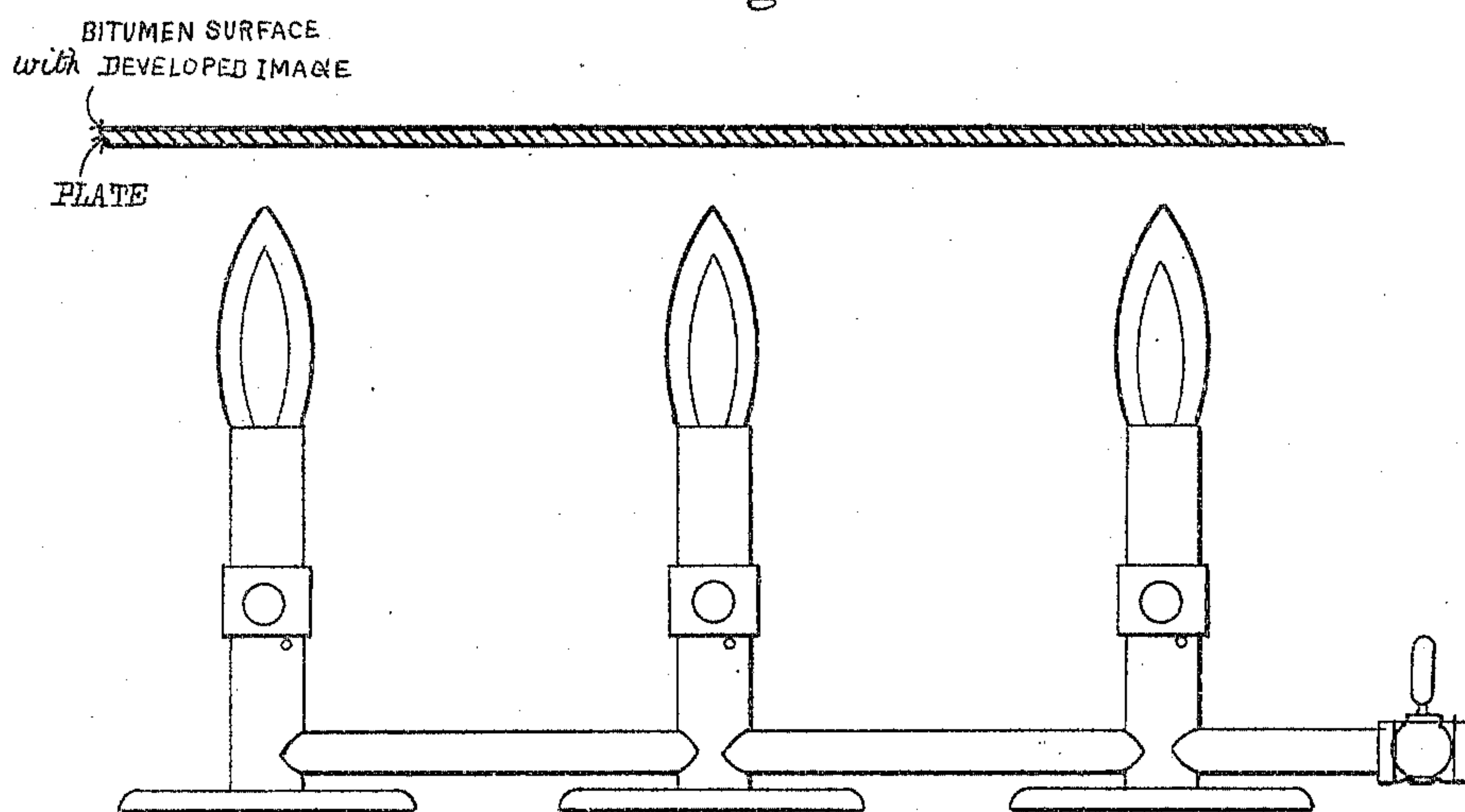
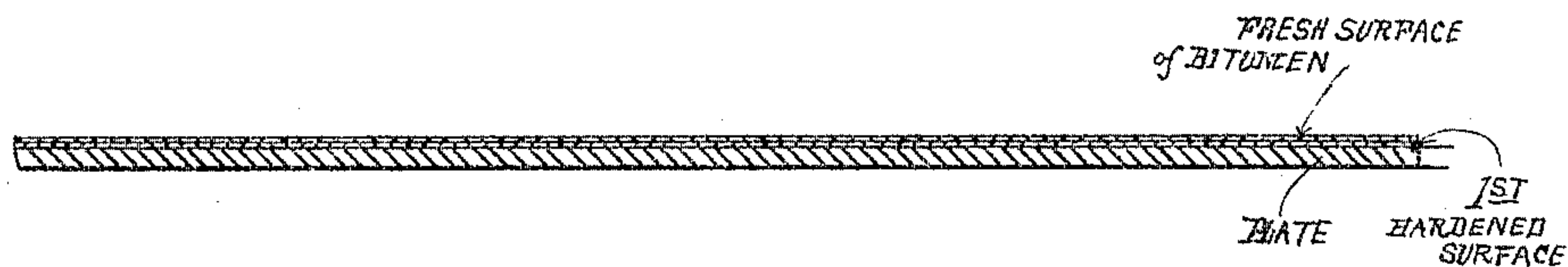


Fig. 2



WITNESSES

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PROCESS ENGRAVING.

SPECIFICATION forming part of Letters Patent No. 789,625, dated May 9, 1905.

Application filed July 9, 1904. Serial No. 215,909.

To all whom it may concern:

Be it known that I, CHARLES GUILLAUME PETIT, a citizen of the Republic of France, residing at Bellevue, near Paris, France, have
5 invented Improvements in Process Engraving, of which the following is a specification.

This invention relates to the production of printing-surfaces, and has for its object the production of a printing-surface of improved
10 appearance and greater accuracy without recourse to a retouching of the plate.

In the present condition of process engraving the general tone of the reproduction upon metal of the hatched negative plate is uni-
15 formly gray. In order to remedy this drawback, it is necessary to etch the metal anew and to work it up with a tool. It is obvious that this intervention of the operator leads him to a personal interpretation of the original
20 which is prejudicial to the truth of the result and is, moreover, very costly.

Now the process which forms the subject-matter of this invention enables the above-mentioned drawbacks to be completely avoid-
25 ed. It is wholly photographic and dispenses with any retouching whatever. It consists, substantially, in the following: After having obtained the hatched negative plate it is exposed to the light upon bituminized metal, and on developing it with turpentine a posi-
30 tive reproduction is obtained which is suitable for receiving the etching. Up to this point there is nothing new; but (and this is the essential feature of the invention) in subjecting
35 this plate, obtained as hereinbefore described, to heat before the etching operation the bitumen image is rendered completely proof against attack by the most powerful solvents, which was not the case before heating. This
40 allows of spreading over the first picture a fresh layer of a solution of Judæa bitumen, which will receive in its turn the exposure to the light under the same or preferably under a second negative of the same subject hatched
45 in a different way.

By "hatched in a different way" it is to be understood either hatched by means of a different grating or hatched by means of the same grating placed in a different position. It is to be
50 understood that this operation may be re-

peated, if need be, with successive heating, except for the last picture which precedes the etching operation and which it is not necessary to render insoluble.

By the improved process the tones of the
55 original are produced with more strength, the superposition of the dots or intersections of the lines composing the gratings giving a perfect reproduction of the original without any retouching or personal intervention of the op-
60 erator.

It has hitherto been difficult to superpose the successive layers in a manner adapted to be acted upon by the etching agent without the solvent contained in the second layer dis-
65 solving afresh the first layer. This difficulty is overcome according to this invention by rendering the picture of Judæa bitumen which it is desired to cover with another picture perfectly insoluble in benzin by heating the
70 plate sufficiently before the etching operation. This superposition, obtained without insulating material and before the etching operation, of two or more pictures of Judæa bitumen was absolutely impracticable before this in-
75 vention, because the solvent contained in the following layers dissolved the preceding bitumen pictures. As herein described, the fixing or insolubility of the successive bitumen pic-
80 tures is effected by the action of heat; but it is to be clearly understood that this invention is not limited to the application of heat and that the fixing or insolubility may be effected by any other physical or chemical means.

In the drawings I have shown the necessary
85 steps of my process for placing two surfaces upon one plate.

Figure 1 represents the plate having a bituminized surface containing an image as it may be subjected to heat. Fig. 2 shows the plate
90 with the hardened surface of bitumen and the superposed additional fresh surface of the same.

I claim as my invention—

1. The herein-described process of prepar-
95 ing a printing-surface, consisting of rendering insoluble a bituminized plate containing a developed image, and then adding an additional surface of bitumen which is adapted to receive an image.

2. The herein-described process of preparing a printing-surface, consisting of heating a bituminized plate containing a developed image, and then adding an additional surface
5 of bitumen which is adapted to receive an image.

3. The herein-described process of preparing a printing-surface, consisting of rendering insoluble a bituminized plate containing a developed image, and then adding an additional
10 surface of bitumen which is adapted to receive

an image, then developing the second image, and repeating the first step as many times as desired, treating the last-superimposed surface with an etcher without hardening. 15

Signed at Paris, France, this 28th day of June, 1904.

CHARLES GUILLAUME PETIT.

Witnesses:

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HANSON C. COXE.