(Specimens.)

A. PATEK.

PRINTING PLATE AND PROCESS OF PRODUCING SAME.

No. 564,290. Patented July 21, 1896.

Fig. 1.

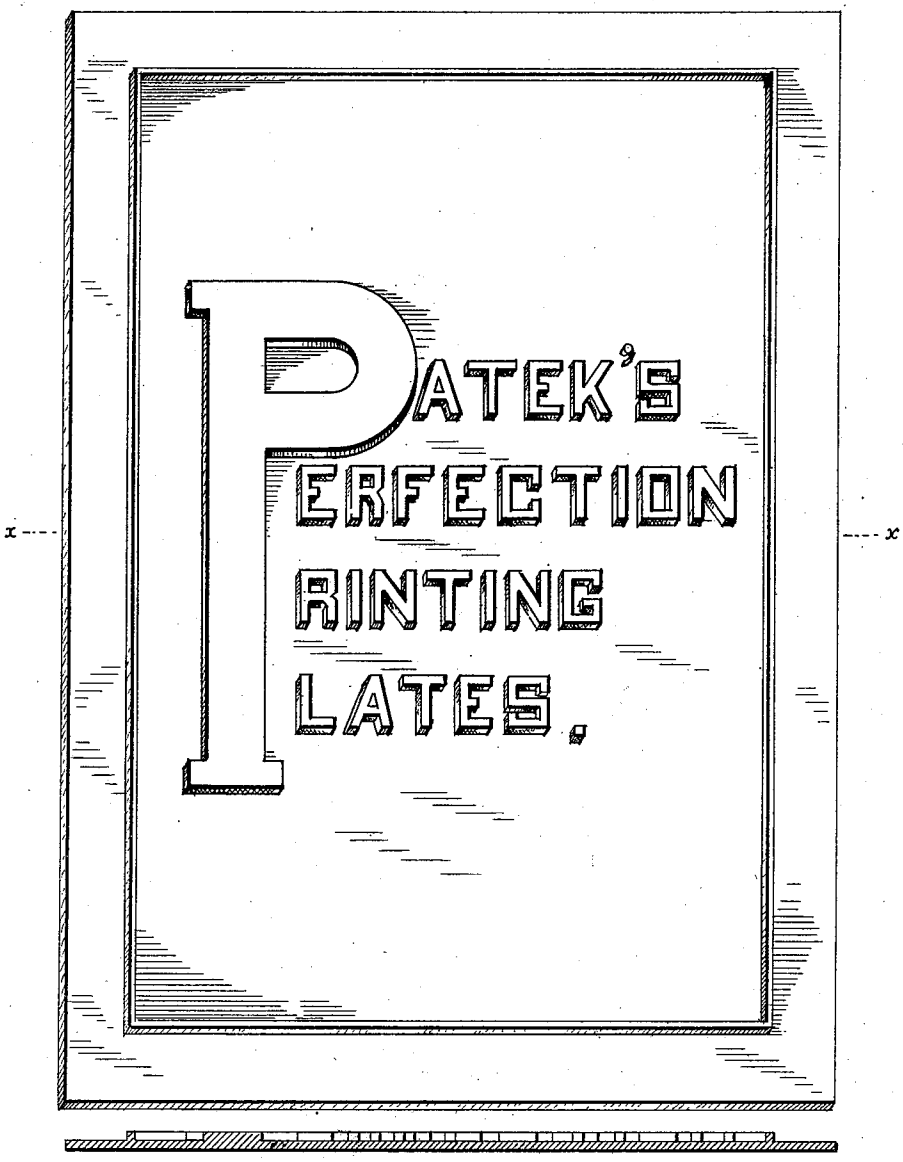

Fig. 2.

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PRINTING-PLATE AND PROCESS OF PRODUCING SAME.

SPECIFICATION forming part of Letters Patent No. 564,290, dated July 21, 1896.

Application filed September 9, 1895. Serial No. 561,886. (Specimens.)

To all whom it may concern:

Be it known that I, ALFRED PATEK, a citizen of the United States, residing at the city, county, and State of New York, have invented certain new and useful Improvements in Printing-Plates and the Process of Producing the Same, of which the following is a specification.

My invention relates to plates of which it is desirable to produce a number of duplicates ready to be placed upon a press and printed from, and my object has been to produce such plates in a simpler and cheaper manner than heretofore, of a lighter and more inexpensive material, and of a substance which will allow the plates to be adjusted upon a flat or curved bed for printing.

Heretofore in making duplicate plates from the original type it has been customary to produce the same by the stereotype process of first taking a mold or impression from the type and then running melted metal into such mold or impression, thereby producing a metal plate with the characters of the original type, or of taking a wax impression from the type and then forming a copper electrotype from such wax impression and backing it with a lead alloy and nailing or soldering it on a block. Both of these processes produce metallic printing-plates which are heavy and require expensive metal in their composition and are not practicably adjustable for use on different shaped beds. The expense and weight of the metal are very important items in the art, because it is usual to distribute such plates for use in newspapers at widely-separted points, and the expense of transportation is considerable, while the value of the metal adds to the cost. It has been my object to avoid these objections and to produce by a simple process a light, durable, and inexpensive plate which shall have sufficient flexibility to allow of its being used upon a flat or curved bed; and I will now proceed to more fully describe my invention, which I have illustrated by drawings, of which—

Figure 1 is an elevation of one of my improved plates; and Fig. 2 is a cross-sectional view of the same, taken upon the line *x x* of Fig. 1.

The reference-letters refer to similar parts in both figures.

In practicing my invention I prefer to employ type-dies or sunk type instead of the usual raised type. The matter is set up with these type in the same way as with the raised type, the result being that when the composition is finished I have secured a matrix from which, if an impression be taken, it will present the characters raised in position for printing. The matrix being ready, I unite a number of sheets of paper with paste so as to form a pad, the upper sheet or sheets being tissue paper. I use a paste containing plaster-of-paris, litharge, and rosin, and when the pad has been built up to the proper thickness I immerse it in a solution which will so act upon the materials of the pad as to make them non-absorptive when dry.

I form a solution by heating a solution of one part of soda and adding enough milk of lime to make it caustic. To this I add melted rosin until the lye will no longer dissolve the rosin, and then make a ten per cent solution of the compound in water. I dip the prepared pad, while the paste is still wet, into this solution and then immerse it in a ten per cent solution of alum in water, and then lay the pad upon the matrix and beat the moist paper into the matrix with a brush or press it in with a press, so that the materials of the pad shall enter the matrix and fill all the interstices thereof. I then subject the pad to heat which dries and hardens the same, when it may be removed from the matrix, and when thoroughly dried it will be ready for use.

The character of the paper and the proportion of the ingredients must be such that under the applied pressure the characters produced will have sufficient hardness to permit use on ordinary printing-presses, while the tenacity of the fiber of the paper must not be so far impaired as to render the plate or characters brittle or liable to break.

The plate thus produced has sufficient flexibility to allow of its being adjusted either upon a flat or a curved bed. It may be mounted upon a wood, metal, or paper block, and, owing to its fibrous character, may be attached thereto by glue, instead of being nailed fast, as in the case of metal plates.

It will be seen that the plates so produced can be readily transported through the mails at slight cost, and are ready for use without any further process of stereotyping or electrotyping. This is of great importance, as it is desirable to distribute matter in this shape to publishers at distant points and to furnish it to them in a condition for use with the least possible delay. It is also possible to use ordinary type in setting up the matter and to take an electrotype therefrom, thus securing a metal matrix from which the paper plate is formed, as already described; and as the lines of such matrix are reversed from the position usual in electrotypes, in order to provide for the reproduction of pictures upon my improved plates by the photo-engraving process, I have the pictures prepared in white ink upon black paper, when the lines will be reversed from their position under ordinary circumstances and will appear in their proper form in the paper plate.

The preparation of the pad by the treatment I have described will render its material non-absorptive, so that the ink will not enter its fibers nor cause it to become soft in use. The use of the paste and the solutions I have described will also give to the surface of the pad a lead-like hardness, so that its characters will not crack or fracture in use, and at the same time will yield sufficiently for practical purposes in printing.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The herein-described process of forming a printing-plate, consisting of first forming a matrix with the characters depressed, uniting sheets of paper with paste to form a pad, treating the same with a non-absorptive compound, forcing the prepared pad into such matrix and drying and hardening the pad by heat, substantially as described.

2. As a new article of manufacture, a printing-plate adapted for direct use upon a printing-press, the same being composed of sheets of paper, united with paste to form a pad, permeated with a non-absorptive compound, and densely compressed, substantially as described.

3. A flexible printing-plate adapted for direct use upon a press, the same being composed of a thin plate of densely-compressed fibrous material, having raised characters thereupon, substantially as set forth.

4. A thin, flexible printing-plate composed of sheets of paper, united with paste, densely compressed, and having raised characters thereupon, the surface of said plate being non-absorptive, substantially as described.

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