Dec. 26, 1933. G. R. KELTIE 1,941,148

PRINTING PLATE

Filed Aug. 6, 1932

Fig. 1.

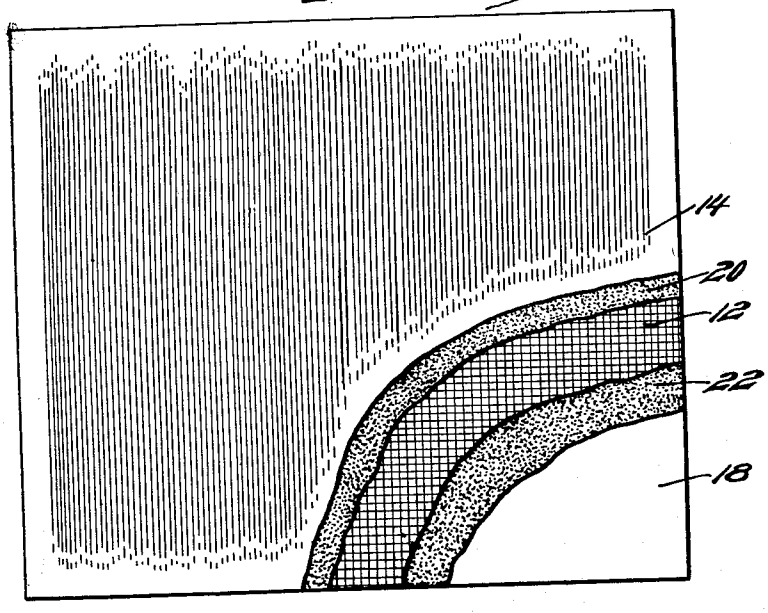


Fig. 2.

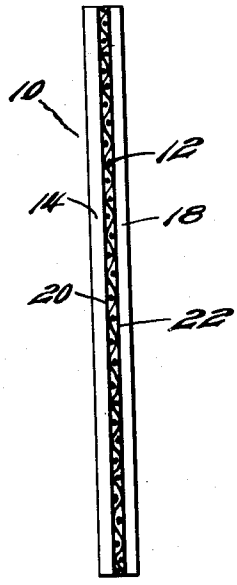


Fig. 3.

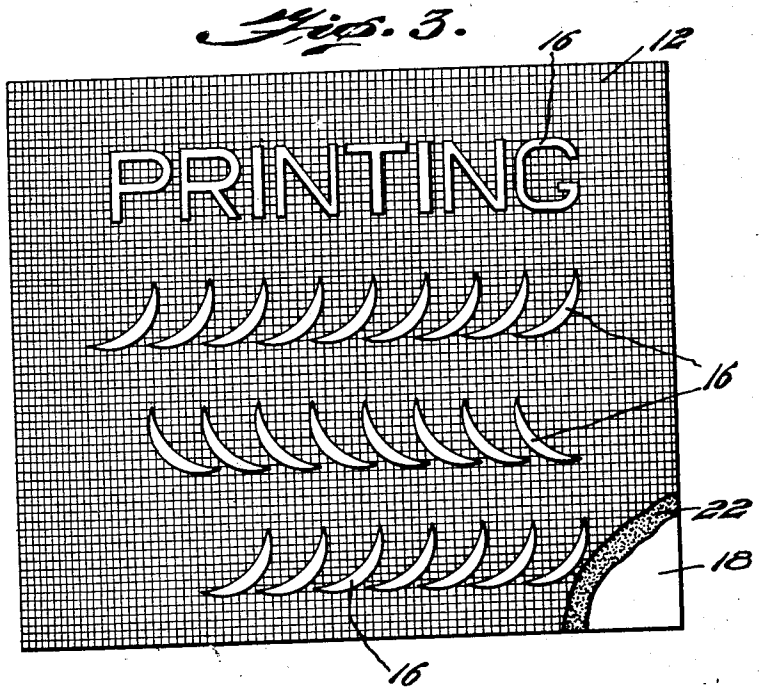
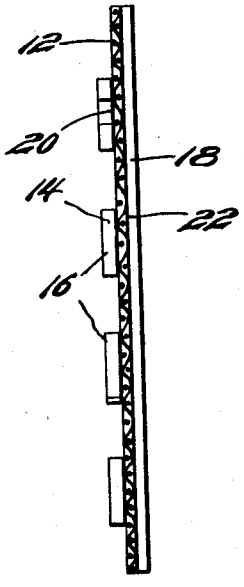


Fig. 4.



Inventor
George R. Keltie
By Thomas A. Jenkes
Attorney

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PRINTING PLATE

George R. Keltie, Woonsocket, R. I., assignor to American Wringer Company, Inc., Woonsocket, R. I., a corporation of Rhode Island

Application August 6, 1932. Serial No. 627,732

2 Claims. (Cl. 101—395)

My invention relates to improvements in printing plates particularly of a type having a resilient impression forming soft surface adapted to have portions thereof cut away to form soft resilient printing characters and a suitable backing layer for said plate preferably constructed of a flexible material readily adapted to be bent in use to the desired configuration. In order that the resilient printing characters may be readily formed from the resilient soft printing layer I preferably interpose a layer of fabric between the printing layer and backing layer so that in order to form the characters it is merely necessary to cut through the outer surface of the printing layer and pull on the cut away blank portions which will readily strip off from the fabric layer, thus eliminating the necessity of chiseling through the rubber or other printing layer as formerly thought necessary. While my printing plate may be used in any type of printing it is particularly adapted for use with inks of the water color type as in the Jean Berte process described in Patent 1,595,756 and in printing articles such as the outside of catalogs, books, etc. having roughened surfaces. If electrotyper's metal were used with such articles it would tend to crush the paper and as my improved resilient characters yield it will print the paper or other materials of this character evenly without crushing them.

Hitherto in this type of printing, the backing layer has consisted of a layer of electrotyper's metal which of itself is flexible. Printing plates made up of electrotyper's metal are very heavy. As my improved flexible hard rubber backing layer is much lighter than the electrotyper's metal, it is obvious that my improved printing plate may be readily shipped all over the world at a much less cost than for plates backed with electrotyper's metal.

A further feature of my invention relates to the fact that the flexible hard backing layer preferably has a similar co-efficient of expansion or contraction as a soft rubber printing layer and after it is subjected to heat either in the printing or in shipping as the printing layer and the backing layer expand and contract substantially identically, it is apparent that the printing and fabric layer will not tend to strip away from the backing layer as has often happened in use employing electrotyper's metal as a backing layer.

These and such other objects of my invention as may hereinafter appear will be best understood from a description of the accompanying drawing which illustrates an embodiment thereof.

In the drawing, Fig. 1 is a perspective view of a printing plate constructed in accordance with my invention partially broken away to show the material in the different layers thereof.

Fig. 2 is an end view of the embodiment shown in Fig. 1.

Fig. 3 is a plan view of a printing plate constructed in accordance with my invention after the blank portions have been cut away from the soft printing layer to leave the printing characters thereon, partially broken away to show the construction of the backing layer.

Fig. 4 is an end view of the cut away printing plate shown in Fig. 3.

As stated, my invention comprises a printing plate 10 comprising an intermediate fabric layer 12 of suitable woven or other preferably textile material and a printing layer 14 preferably formed of an impression forming resilient soft material adhered to the front of said fabric layer 12, whereby blanks may be cut in said printing layer and readily removed from the fabric layer 12 to form the resilient printing characters 16 from said soft fabric layer 14 as shown in Figs. 3 and 4.

My improved printing plate also includes a backing layer 18 of preferably light flexible hard material having substantially the same co-efficient of expansion as the soft rubber printing layer 14 secured to the back of the fabric layer 12.

I preferably construct my improved printing layer of a soft rubber in order that the printing characters 16 formed therefrom may be readily resilient to print water color or other types of ink evenly over an irregular surface. While this layer may be constructed of any suitable material, it is preferably constructed of soft rubber. For cheapness and ease of transportation I preferably employ as the backing layer 18 secured to the back of said fabric layer 12 a layer of light flexible hard rubber 18 and being rubber having substantially the same coefficient of expansion as the soft rubber printing layer 14, although it is apparent that any other suitable material having substantially the same coefficient of expansion as the material of the printing layer may be employed.

Inasmuch as the hard rubber backing layer 18 is light it is obvious that it adds little weight to the printing plate and as it is flexible it may be readily bent to the configuration desired for printing and retain that configuration. As the printing layer 14 and backing layer 18 both consist respectively of hard and soft rubber, it is obvious that they will have substantially the same

coefficients of expansion and hence under varying conditions of heat or cold the fabric and printing layer will not tend to strip off from the backing layer. While the printing and backing layers may be secured or adhered to the fabric layer in any suitable manner, it is obvious that where rubber is employed as in both the printing and backing layers they may be readily vulcanized thereto. In my preferred embodiment, however, I preferably employ the layer of rubber cement 20 to assist in adhesively securing the printing layer 14 to the fabric layer 12 and an additional layer of rubber cement 22 to assist in securing the fabric layer to the backing layer. It is obvious that the vulcanization may be merely thorough enough to vulcanize the rubber cement layers 20 and 22 to secure the printing and backing layers to the fabric, or it may be thorough enough to completely vulcanize all layers together. It is obvious, however, that particularly where the printing and backing layers do not consist of rubber that they may be adhesively secured to the fabric layer by cement or in any other suitable fashion.

As I preferably employ the fabric layer 12, in order to form the printing characters 16 from the printing layer 14, it is obvious that it is merely necessary to cut out the printing characters 16, when the blank portions may be readily gripped and torn away from the fabric 12, thereby entirely eliminating the difficult operation of chiseling formerly thought necessary where a soft material is not employed as a printing layer or where a fabric layer is not employed.

It is apparent that I have provided a novel type of printing plate particularly adapted for use in the Jean Berte process of printing with water colors, ink or any other type of ink or material and particularly over roughened surfaces with the advantages hitherto described.

It is understood that my invention is not limited to the specific embodiment shown and that various deviations may be made therefrom without departing from the spirit and scope of the appended claims.

What I claim is:

1. A printing plate consisting of an intermediate fabric layer, a printing layer of impression forming resilient soft material adhered to the front of said fabric layer, whereby blanks may be cut in said printing layer and readily removed from the fabric layer to form resilient printing characters from said soft material layer and a backing layer consisting solely of light flexible hard material having substantially the same coefficient of expansion as the soft material printing layer adhered to the back of said fabric layer.

2. A printing plate, consisting of an intermediate fabric layer, a printing layer of impression forming resilient soft rubber secured to the front of said fabric layer, whereby blanks may be cut in said printing layer and readily removed from the fabric layer to form resilient printing characters from said soft rubber layer and a backing layer consisting solely of flexible hard rubber having substantially the same coefficient of expansion as the soft rubber printing layer secured to the back of said fabric layer.

GEORGE R. KELTIE.