July 3, 1923. 1,460,391

S. SATENSTEIN

METHOD OF STAMPING BOOKBINDINGS AND THE LIKE

Filed March 29, 1922

Fig. 1,

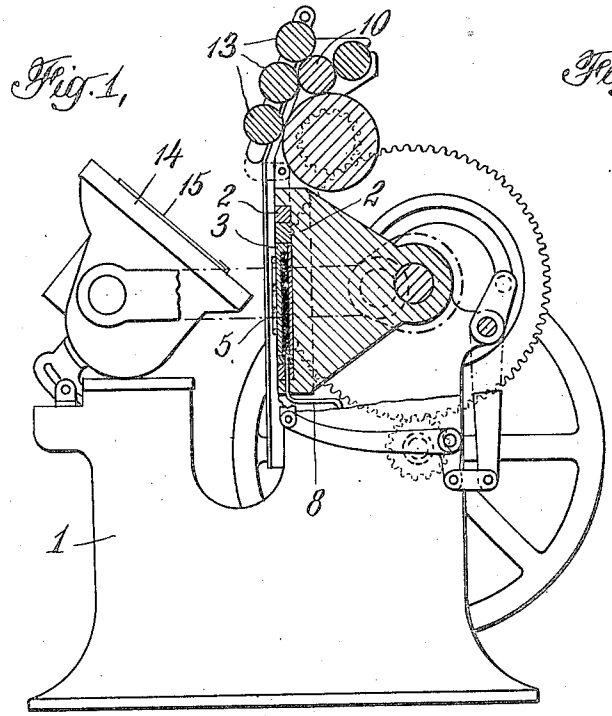


Fig. 2,

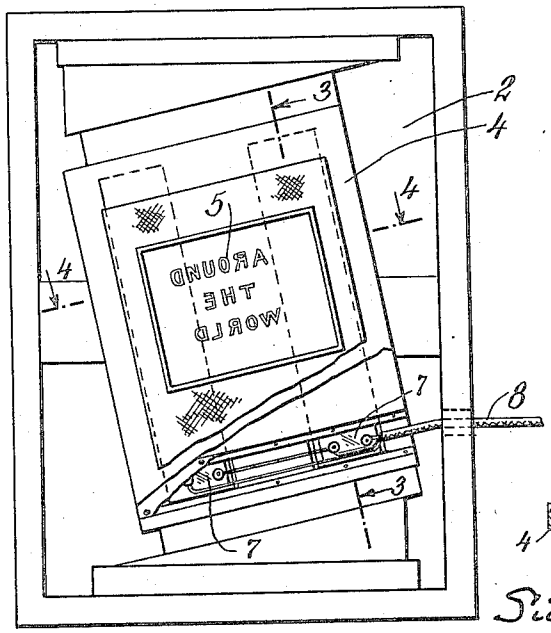


Fig. 3,

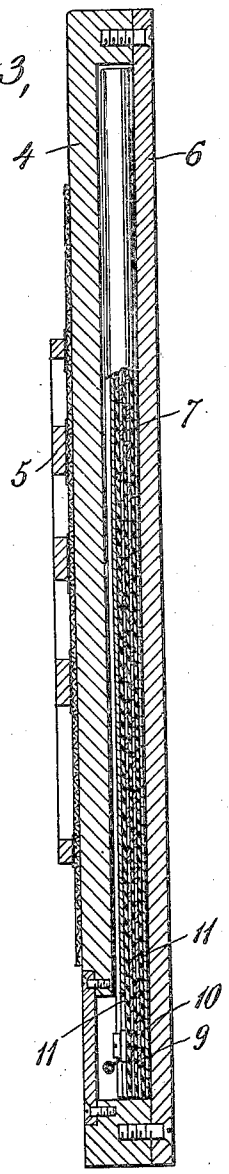
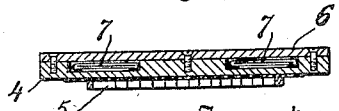


Fig. 4,



Inventor

Sidney Satenstein

By his Attorneys

Pennie Davis Marvin & Edmonds

BEST AVAILABLE COPY

Patented July 3, 1923. 1,460,391

UNITED STATES PATENT OFFICE.

SIDNEY SATENSTEIN, OF NEW YORK, N. Y., ASSIGNOR TO ALCHEMIC GOLD COMPANY, INC., A CORPORATION OF NEW YORK.

METHOD OF STAMPING BOOKBINDINGS AND THE LIKE.

Application filed March 29, 1922. Serial No. 547,715.

To all whom it may concern:

Be it known that I, SIDNEY SATENSTEIN, a citizen of the United States, residing at New York city, in the county of New York, State of New York, have invented certain new and useful Improvements in Methods of Stamping Bookbindings and the like; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to the printing or stamping of book-bindings, labels, hat bands, and generally to the application of impressions to any surface. The invention is particularly adaptable to the titling and decoration of bindings, although it is not limited to such use, and it is my intention to claim the method as described for all uses for which it may be employed.

In the preparation of bindings and the like, it has been customary heretofore to size and sometimes to oil the surface to which metallic leaf is applied and to impress the leaf by means of relief dies under relatively high pressure. Such application involves a number of separate operations. The leaf is first caused to adhere to the surface so that it covers entirely the space in which the title or decoration is to appear. The surface is passed through the press where the leaf is subjected to pressure by the die. The surface must then be brushed to remove the surplus leaf, and if this is of value, as when gold leaf is used, the fine particles must be recovered. Because of the cost of the leaf, the unavoidable waste and the complicated operations involved, the application of titles and decorations to bindings and the like in the manner described is relatively expensive.

It is the object of the present invention to provide a method of applying titles and decorations to bindings and the like, using metallic pigment inks as the medium of application and thus avoiding the several operations and the waste incident to the use of metallic leaf.

Further objects and advantages of the invention will be apparent as it is better understood by reference to the following specification in which the preferred embodiment of the invention is described.

I have discovered that metallic pigment inks may be successfully employed in stamping book-bindings and the like provided the plate die or type employed in the stamping operation is heated to and maintained at a suitable temperature during the printing or stamping operation. By applying heat to the printing plate in this manner the ink is caused to dry rapidly so that a clean impression is obtained which does not become blurred either in the printing or stamping operation or subsequently in the handling of the bindings. Furthermore, the rapid drying of the ink insures a smooth, hard and glossy finish on the pigment, which brings out the color and materially adds to the decorative quality of the product. The use of heat also obviates the necessity of preliminary blanking impressions in the treatment of cloth and leather having a distinct pattern or grain.

In carrying out the invention, it is desirable to utilize an ink which is capable of drying without becoming gummy and of a consistency such as to permit transference of the ink through the printing rolls to the printing plate. It is desirable, moreover, that the vehicle employed in the ink be such as to protect the pigment from oxidation and consequent discoloration. Such an ink is disclosed in the copending application of Howard Waters Doughty, Serial No. 521,169, and consists, in accordance with the disclosure in that application, of a metallic pigment suspended in a vehicle which comprises a resinous substance and a high boiling hydrocarbon derivative as a solvent for the resinous substance. In its preferred embodiment, the vehicle consists of ordinary rosin dissolved in terpineol or a solvent containing terpineol in the proportion of seven parts by weight of terpineol to two parts of ordinary rosin. The proportions of the ingredients of the solvent may vary widely as may also the particular ingredients employed. The metallic pigment, which may be, for example, a bronze powder in finely divided condition, is mixed with the vehicle in proportions to produce an ink of the desired consistency, for example, in equal proportions by weight or in the proportion of two parts by weight of the pigment to one part by weight of the vehicle. These proportions may also vary depending upon the

particular characteristics of the vehicle and pigment employed. No claim is made herein to the ink or vehicle, this being the subject matter of the copending application referred to, and it is to be understood, moreover, that the present invention is not limited to the use of the specific ink mentioned, this being merely by way of illustration of the preferred embodiment of the invention.

I have discovered that the best results are obtained when the ink above described is transferred to the binding or other surface by a printing plate which is preferably heated to a temperature sufficient to dry the ink during the impression interval. A temperature of approximately 140° F. is satisfactory with the particular ink described. The temperature of the plate may vary considerably, depending upon the composition of the ink, without materially affecting the results obtained. It is preferably maintained at a substantially uniform temperature, and this may be readily accomplished by the use of electric heating elements arranged behind the plate in heat-transmitting relation thereto.

In carrying out the invention a printing press of the ordinary swinging platen type or an upright stamping or embossing press with an inking attachment may be employed. The heated printing or stamping plate die or type is supported on the bed of the press, and the heating elements therein are connected to a source of electric current whereby the desired temperature is maintained. The ink is preferably applied by inking rollers which are not affected by the heat. Rollers of vulcanized oil or rubber are satisfactory for this purpose. The rollers are fed from a suitable fountain plate or roll regulated to supply ink as required to the inking rolls. The inking rolls travel over the printing or stamping plate between each impression applying ink thereto. The ink is immediately transferred to the binding which is disposed by the operator upon the swinging platen. Because of the temperature of the plate, the ink is substantially dry before the pressure is released. The operation involved is thus quite as simple as any ordinary printing operation, the titles and decorations being complete when the surface is withdrawn from the press by the operator following the impression. Of course, the bindings may remain in the press for one or more impressions as desired, but in ordinary work it is sufficient to apply a single impression.

In order that the invention may be clearly understood, I have shown in the accompanying drawing the means whereby it may be carried out, it being understood, however, that the invention is not limited to the particular apparatus disclosed, nor, in fact, to any special mechanisms or devices. In the drawing,

Fig. 1 illustrates in vertical section a printing press suitable for use in stamping book bindings;

Fig. 2 is a plan view partially in section of the printing plate and heating means therefor;

Fig. 3 is an enlarged sectional view on the line 3—3 of Fig. 2; and

Fig. 4 is a reduced sectional view on the line 4—4 of Fig. 2.

Referring to the drawing, 1 indicates the frame of the press which is provided with a bed 2 to receive the heated plate 3. The latter comprises a base 4 to which a printing plate 5 may be secured, and cover plate 6. Heating elements 7 are supported within the base 4 and are connected by conductors 8 to a source of current. The heating elements may be of any suitable construction, consisting, for example, of sheets 9, preferably of mica, upon which resistance conductors 10 are wound. The resistance conductors are insulated from the base 4 and cover 5 by insulators, such as sheets of mica 11. Other forms of heating elements may be used. The press is provided with a fountain roller 12 to which the ink may be applied, and inking rollers 13 travel as is usual in printing presses between the fountain roller and the printing plate, thus serving to transfer the ink after each impression to the printing plate.

A swinging platen 14, adapted to be actuated in the usual manner, is provided, and the binding or other surface 15 to be stamped is placed upon the platen as the latter swings downwardly. The binding is then carried upwardly into contact with the printing plate to receive the impression, after which the platen returns and the binding is removed by the operator.

From the foregoing, it will be understood that I have devised a novel method of stamping surfaces such as book-bindings, labels, hat-bands and the like. By the application of this method the tedious process of stamping involving the use of metallic leaf is entirely avoided; the time required to complete the stamping is materially reduced and waste of material, which is unavoidable in the use of metallic leaf, is eliminated. The invention is particularly adapted to the preparation of bindings in large editions where frequently the cost of binding must be reduced to a minimum. Bindings prepared in accordance with the invention closely resemble those prepared by the application of metal leaf, and, in fact, can hardly be distinguished if the pigment employed in the ink is in a sufficiently finely divided condition.

Various changes may be made in the de-

tails of the operation without departing from the invention or sacrificing any of the advantages thereof.

I claim:

A method of stamping which comprises transferring a metallic pigment ink containing a solvent which is not volatile at atmospheric temperatures by pressure to a surface and drying the ink on the surface during the impression interval by the application of sufficient heat to ensure volatilization of the solvent.

In testimony whereof I affix my signature.

SIDNEY SATENSTEIN.