

Dec. 9, 1941.

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2,265,659

METHOD OF MAKING DECALCOMANIA STAMPS

Filed May 3, 1938

FIG. 1.

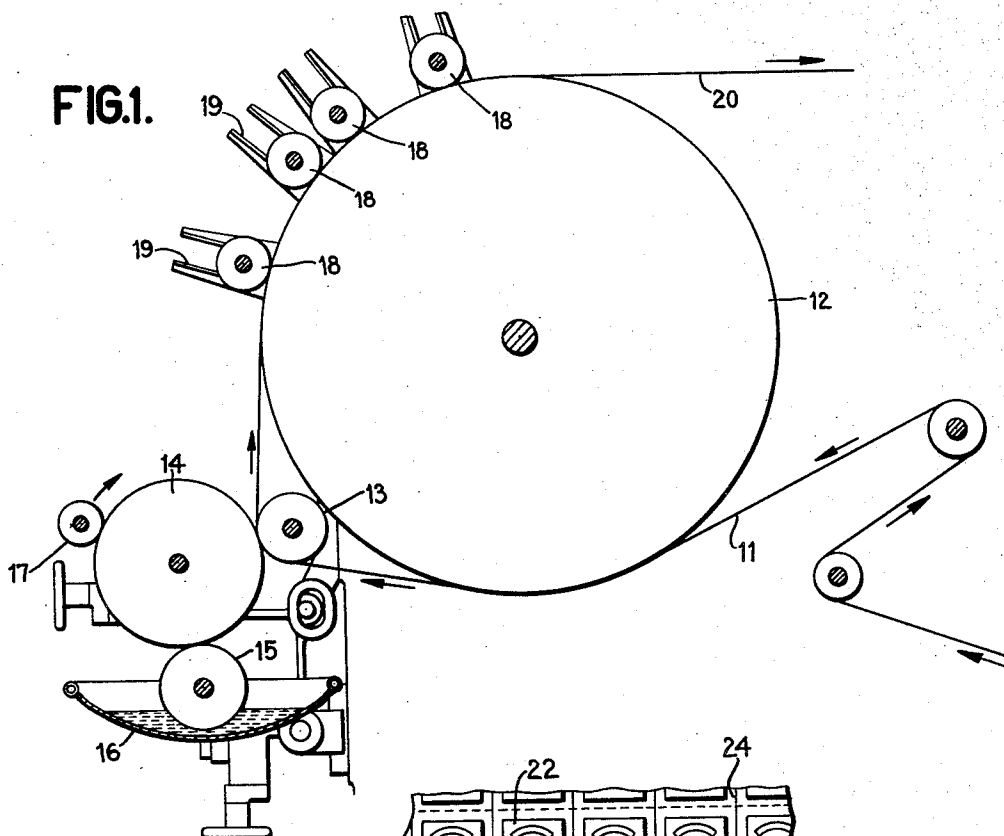


FIG. 2.

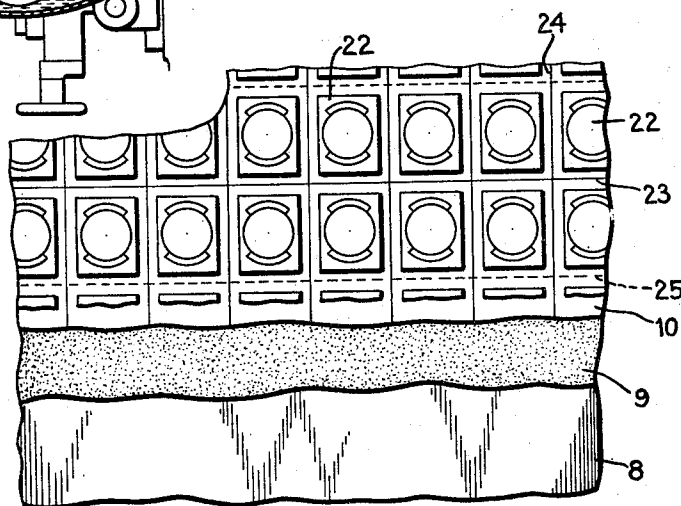


FIG. 3.



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2,265,659

METHOD OF MAKING DECALCOMANIA STAMPS

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Application May 3, 1938, Serial No. 205,690

1 Claim. (Cl. 41—33)

This invention relates generally to decalcomanias of the type having a transfer body which is secured to a paper backing by a water soluble adhesive.

One object of the invention is to provide a way of making such decalcomanias which is simpler and better than any prior way with which the applicant is familiar.

Another object is to produce decalcomanias on which the printing of the significant matter on the transfer body may be effected by the use of engraved steel printing elements. The advantages of steel engravings from a protective standpoint are well known. The actual printing on the transfer body may be effected by a single impression from such elements, or, where multi-colored prints are desired, the separate colors may be applied successively. Multi-colored printing has advantages in giving an attractive appearance to the printed matter and, at the same time, such printing may be so done as to increase the difficulty of imitating or counterfeiting the print.

Another object of the invention is to provide a way of making a transfer body which permits easily varying the thickness of the body to meet various requirements and which also does not cause variations or irregularities in the total thickness through the backing paper, adhesive and transfer body to such an extent as to interfere with uniformity in printing. The method employed compensates for any slight irregularities in the paper base or the adhesive, resulting in a uniformly smooth surface to receive the imprint as well as a uniform overall thickness between the printing couple.

Another object and a very important one, is to make it possible to employ a lithographic printing process in making the imprint upon a transfer body. So far as known, this has not heretofore been possible because of the manner in which the transfer body has been made.

In this specification the novel features are disclosed in connection with stamps suitable for showing the payment of taxes, but as indicated from the foregoing statement the invention is not limited to that use but may be employed for other purposes.

While many of the objects have been stated above, others and perhaps equally important objects will become apparent as the description proceeds.

In the accompanying drawing:

Fig. 1 shows diagrammatically an apparatus which is suitable for applying the transfer body to a paper backing which has previously been coated with a water soluble adhesive.

Fig. 2 is a plan view of a sheet of stamps illustrating the invention.

Fig. 3 is a diagrammatic representation of a

cross-section through a sheet of stamps such as is shown in Fig. 2.

In producing stamps such as shown in Figs. 2 and 3 a web of paper 8 is first coated with a water soluble adhesive 9 and dried, and is then threaded through a machine which applies a continuous coating of a transfer body material 10 on the side of the web which carries the adhesive. This transfer body material is occasionally referred to hereinafter as the ink base. Any apparatus suitable for the purpose may be employed. In the one shown diagrammatically in Fig. 1 the paper web enters at 11 and passes under a large driven roller 12 and around a smaller roller 13 which gives a somewhat sharp bend to the web opposite a driven roller brush 14. The brush 14 is driven in a direction opposite to the direction of the travel of the paper web 11 and runs in contact with a furnishing roll 15 which rotates in a tank or pan 16 containing a supply of the material employed for making the ink base. The furnishing roll is preferably a driven roll and may be of wood or any other material suitable to keep the roller brush 14 supplied from the pan 16. A doctor roll or brush 17 may be employed to cooperate with the roller brush 14 to distribute the ink base material on the brush although this doctor roll is not essential. As it rotates the brush 14 will apply a fairly uniform coating of ink base material to the adhesive on the paper web.

The transfer body material or ink base is then spread upon the dry adhesive by successively acting brushes diagrammatically shown at 18. These brushes, which may be turned to accommodate for wear, are adjustable in the guides 19 and may be set with great accuracy so that by their successive operations the coating of ink base may be regulated to a nicety. Usually the coat of body or base will, after leaving the last brush, be approximately .001 of an inch thick but this may be varied, particularly where a thicker transfer body is desired.

After the transfer material has been applied the web of paper passes away as shown at 20 to any desired form of drier. A festoon drier is preferred.

The material used for the ink base may be of any suitable composition, but it is preferred to use a material which will dry quickly and uniformly and which will have enough strength to permit easy transfer to the article to which the body is to be affixed. At the same time the material is preferably one which is fragile enough to break if an attempt is made to remove it from the surface to which it has been transferred and affixed.

From the foregoing it will be clear that the side of the paper web which carries the water soluble adhesive will be given a continuous coating of

the transfer body or ink base material and that by use of the spreading brushes 18 the material will have a very smooth surface. In addition, by using the spreading brushes the thickness through the coating, the adhesive and the paper will be uniform, as the coating may be slightly thinner or thicker at one point than at others if any irregularity in the thickness of either the adhesive or the paper must be compensated for.

In the preferred practice, after the transfer body material is dried the paper is run through a printing press and the imprints 22 (Figs. 2 and 3) of the significant matter are applied. The printing press may be of any suitable type for printing continuously from long webs or rolls or the coated web of paper may be cut into sheets and fed to a press one at a time.

As indicated above, for certain purposes steel engraved printing faces may be employed. As is well known, these steel engravings lend themselves to the use of intricate patterns composed in part, at least, of very fine lines which are in themselves a means of detecting counterfeits. However, in addition, the significant matter on the stamps may be printed by super-imposing impressions in different inks and inks of different colors. Any press or combination of presses suitable for the purpose may be employed.

So far as known, in making prior decalcomania stamps the transfer body or ink base is built up by successive super-imposed printing press impressions of the ink base material until the desired thickness of the ink base is attained. This gives a transfer unit, but as an incident the adhesive is necessarily exposed between the margins of the units. This has heretofore prevented printing decalcomanias by the lithographic printing process because the wet plates used in such a process will dissolve and to some extent pick up the adhesive. In preparing the ink base according to the present invention the coating is continuous and the adhesive is protected at all points, so that the trouble indicated cannot occur. As a result, decalcomanias such as stamps may be printed by the lithographic printing process with just as much freedom from trouble as with any other lithographic printing.

It is, of course, desirable that the printed ink base be divided into separately transferable units each carrying the desired significant printed matter. It is desirable that this be done after the sheet or web has been printed. The separation is effected by cutting between the imprints, along intersecting lines, through the transfer body or ink base, preferably by using cutters arranged to make the cuts as the paper is drawn past the cutters. In the best practice the cuts extend through the transfer body to the adhesive but may, of course, extend into or through the adhesive if desired.

Cuts such as were just mentioned are shown at 23 and 24 in Fig. 2 as intersecting cuts, and in somewhat exaggerated form in Fig. 3.

It will be apparent that by making the intersecting cuts 23 and 24 the transfer body or ink base will be divided into separately removable units and that each unit may have a relatively wide margin around the significant matter printed on the unit. This will give the stamp a distinctive appearance, and will also permit slight variations in making the cuts without encroaching upon the printed fields of the stamps.

In order to facilitate applying the stamps, the

sheets or strips of stamps may, if desired, be perforated or rouletted as indicated at 25 in Fig. 2 so as to permit tearing a sheet or strip into sections which may be easily handled. Preferably such perforations or roulettes should extend through the backing paper or at least far enough into the paper to permit of easy tearing.

In applying the transfers one of the sections is moistened as units are needed and the units are then slid off to the surfaces upon which they are to be affixed. Preferably the adhesive should be of a quickly absorptive type and should also be of such a nature that it will adhere firmly to Cellophane and like wrappers as well as to surfaces of other materials. Such adhesives contain, or should contain, a hygroscopic substance, such as glycerin. This fosters permanent adhesion, as it prevents the adhesive from becoming so dry that it will have a tendency to scale off of the surface to which it has been affixed. The hygroscopic effect may, if desired, be increased by adding a little glycerin, say 3%, to the water used for moistening the transfers preparatory to applying them. The material used for the transfer body or ink base is preferably of such a nature as not to interfere with at least partial drying of the adhesive when the surface to which the stamp is affixed is not a moisture absorbing one.

The amount of adhesive employed in preparing the web is such that after it has been moistened it will permit the transfer body or ink base to be transferred and affixed, but the base will not carry with it enough adhesive to permit of a second moistening and transfer to still another surface. Further, the material of the transfer body should not have a fibrous structure and the body should be thin, so that any attempt to remove a tax stamp, for example, or to make a second transfer will cause the stamp to be destroyed or at least so damaged as to make it unlikely that the attempt will not be detected.

The material used for the transfer body or ink base is preferably a white one, but obviously it may be colored, if for any reason white should not be preferred, or a colorless and transparent coating of the transfer body material 10 may be used when desired.

While the novel method and article have been described above in detail, particularly in connection with the production of stamp transfers, the invention contemplates the production of decalcomania transfers suitable for many purposes and it is not, therefore, the desire to be limited as to the method or the product except to the extent indicated by the claim which follows.

What is claimed is:

A method of making decalcomania transfers which includes applying a coating of water absorptive adhesive to a web of backing paper and at least partially drying said adhesive, applying on said adhesive a continuous coat of a wet ink base material which will be fragile when dry and brushing said coat in such manner as to give a smooth surface and a uniform over-all thickness through the paper web, the adhesive and the ink base coating, then at least partially drying the ink base coating, printing from engraved dies on the smooth surface of the ink base coating, and cutting through said coating along intersecting lines to divide same into separately transferable units each carrying an imprint.

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