March 16, 1937. W. BARTH ET AL 2,074,200

PREPARED CHEMICALS AND METHOD OF PREPARING THE SAME

Filed Feb. 8, 1935 2 Sheets-Sheet 1

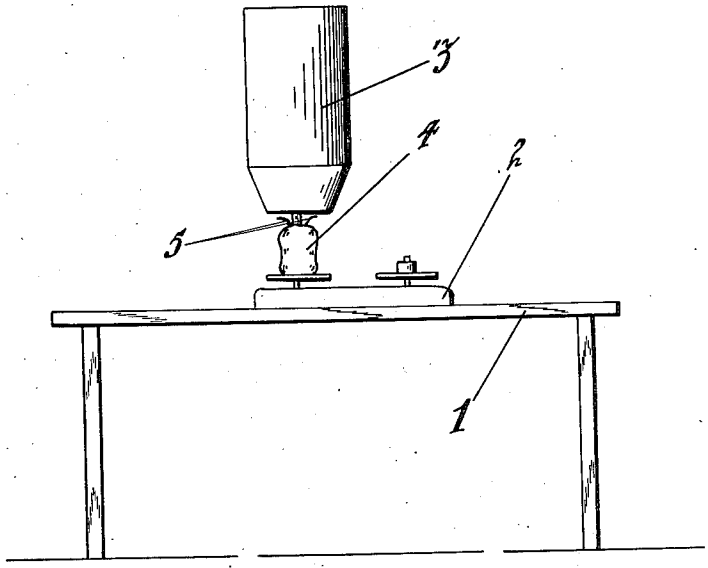

Fig. 1.

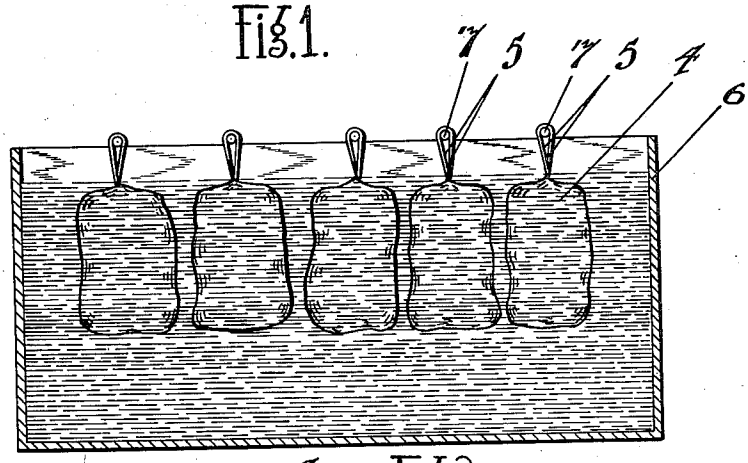

Fig. 2.

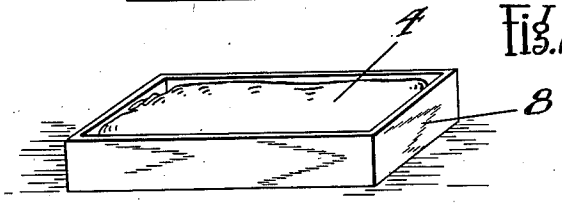

Fig. 3.

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PREPARED CHEMICALS AND METHOD OF PREPARING THE SAME

Filed Feb. 8, 1935 2 Sheets-Sheet 2

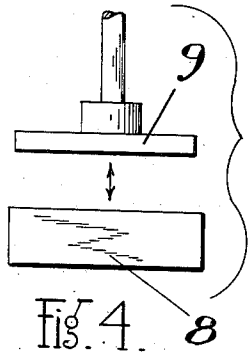

Fig. 4.

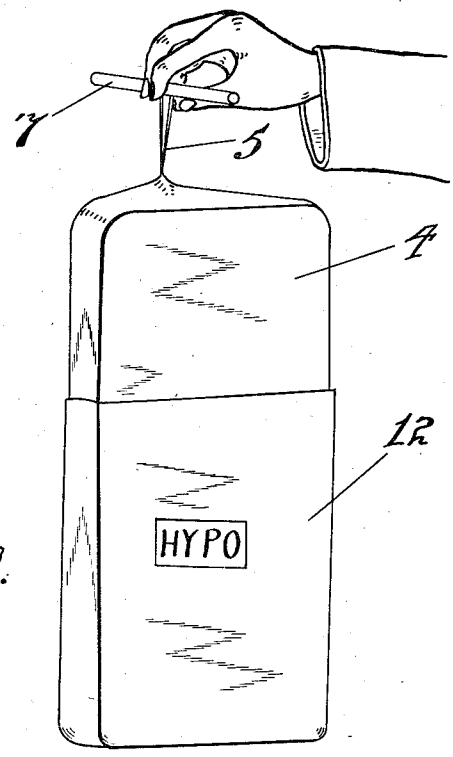

Fig. 5.

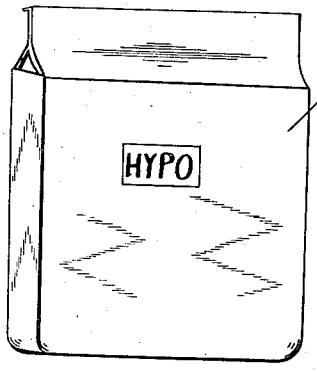

Fig. 6.

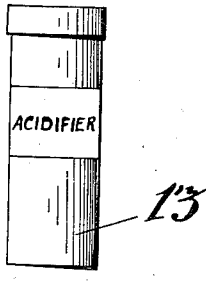

Fig. 9.

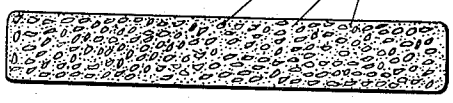

Fig. 8.

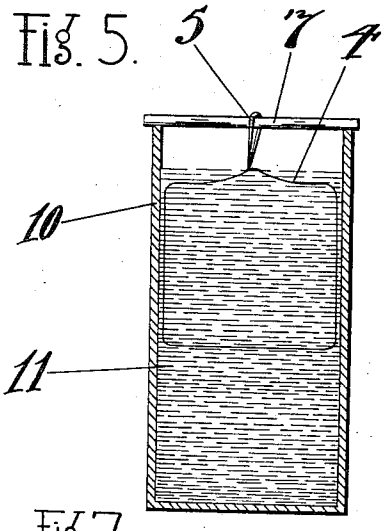

Fig. 7.

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UNITED STATES PATENT OFFICE

2,074,200

PREPARED CHEMICALS AND METHOD OF PREPARING THE SAME

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Application February 8, 1935, Serial No. 5,666

4 Claims. (Cl. 23—245)

Our invention relates to improvements in prepared chemicals and the method of preparing the same.

While we have shown and described our invention as applied specifically to photographic chemicals, it will be apparent that it is not limited strictly thereto but is of wide application.

The common material for photographic fixing baths is a mixture of sodium thiosulphate and sodium sulphite, commonly known as hypo, together with a hardener and acidifier. The practice heretofore has been to supply the hypo in cans or bottles in powder or crystalline form for dissolution in water in a tank or other suitable vessel, the acidifier and hardener being supplied in a separate bottle for dissolution in the hypo solution.

Our improved form comprises providing the hypo in brick form in a convenient holder and shaped and formed so as to fit within the fixing tank and remain adjacent the top liquid level thereof during dissolution, the acidifier and hardener being supplied in a separate package for subsequent dissolution in the hypo solution.

The brick form of hypo comprises one of the objects of our invention and another and important object consists in providing the hypo materials partly in substantially anhydrous and partly in crystalline form.

A further object of our invention lies in the method of preparing this hypo package.

One important advantage of preparing chemicals in brick form in accordance with this invention is the elimination of dust incident to the preparation and use of the chemical.

Other objects and advantages will be apparent as the description proceeds, reference now being had to the figures of the accompanying drawings forming a part of this application and wherein like reference numerals indicate like parts.

In the drawings:

Figure 1 is a diagrammatic view illustrating in side elevation the first step of preparing our improved hypo packages.

Figure 2 is a cross sectional view of a tank with a plurality of packages suspended therein, illustrating another step in one form of the process of preparation.

Figure 3 is a detail perspective view illustrating one of the packages in the mold for pressing into brick form.

Figure 4 is a detail side view illustrating the pressing and forming operation.

Figure 5 is a perspective view of the completed hypo brick being placed in its protective container.

Figure 6 is a view showing the hypo brick ready for shipment.

Figure 7 is a detail cross sectional view illustrating a fixing tank with my improved hypo brick in dissolving position therein.

Figure 8 is a detail cross sectional view through my improved hypo brick illustrating the composition thereof.

Fig. 9 is a view showing the separate acidifier and hardener package ready for shipment together with the hypo brick of Fig. 6.

Instead of packing the hypo materials in powder or crystalline form in a box, can, bottle or other container with the material loose therein and adapted to be poured therefrom into the water for dissolution, we place the materials in a bag made of cotton or other porous material. In Figure 1 we have shown a table 1 upon which is mounted a pair of scales 2 and over which is provided a hopper or container 3 from which the bag 4 may be filled with the hypo material, in a measured amount.

The bag is provided with draw strings 5 by which it may be closed.

Next the bags 4 so filled with the hypo material may be suspended for a brief determined period of time in a tank 6 filled with water whereupon a certain amount of moisture is taken up by the bag and the hypo material therein. Care must be taken not to leave the bags in the water too long and thus permit an appreciable amount of dissolution and dissipation of the hypo material in the tank. It should be stated here that each bag is provided with a small handle or cross bar 7 of wood or the like suitably attached to the draw strings 5 to facilitate handling the bag and suspending the same in the tank 6.

If desired these bags or pre-formed bags may be subjected to moisture in other ways as by spraying, steaming, placing in a damp atmosphere, and the like.

After removal from the tank 6 the bag is placed in a suitable mold 8 of the proper size and form and pressure is applied to each by means of the die 9 whereupon the dampened bag of hypo material is caused to assume the form and size of the interior of the mold 8. The molded bags are then removed from the molds 8 and permitted to dry. Upon drying they retain their molded form and comprise bricks of uniform size and shape. The size and shape of the bricks is determined by the size and shape of the fixing tanks such as

that shown at 10 in Figure 7 within which the bricks are to be suspended for dissolution to provide the fixing solution 11. It will be noted that the handle 7 provides a convenient means for suspending the bags within the fixing tank.

After the bricks are entirely dried they are placed in an outer container or sack 12 of heavy paper, cardboard, or the like for packing and shipping. This container 12 may be sealed in any suitable manner. In Figure 6 is shown the completed package together with the separate package 13 of hardener and acidifier which accompanies the same.

An important feature of the invention is illustrated in Figure 8. Part of the hypo material is provided in substantially anhydrous form and part in crystalline form. The percentage of the two forms may vary but it has been found that a mixture of 75% substantially anhydrous material and 25% crystalline material forms a very satisfactory composition. The result of this combination of substantially anhydrous and crystalline hypo homogeneously mixed within the brick, is that the crystalline hypo dissolves first in the fixing tank leaving the rest of the salt in a sponge like structure allowing the salt to come in contact with the water over a much greater area and surface and thus insuring quicker dissolution.

This mixed preparation of substantially anhydrous and crystalline hypo also contributes to the shaping and molding of the bricks for the reasons that when the bags are subjected to the first superficial moistening, the substantially anhydrous material takes up some moisture very quickly and then upon pressing as previously described, and drying, hardens into the pressed form.

Another feature of our invention is that with the hypo in this solid brick form, it can be placed in the fixing tank adjacent the top liquid level where it dissolves much more rapidly and completely than if the materials were merely placed in the tank and allowed to settle to the bottom thereof.

The cross sectional view of Figure 8 illustrates the substantially anhydrous material at 14 and the crystalline material at 15.

Of course, changes may be made in details of construction and arrangement without departing from the spirit and scope of our invention. We do not limit ourselves, therefore, to the exact form herein shown and described other than by the appended claims.

We claim:

1. A package of hypo fixing material comprising a molded solid mass of partly substantially anhydrous and partly crystalline hypo.

2. A package of hypo fixing material comprising a molded solid mass of partly substantially anhydrous and partly crystalline hypo, the proportions of said material being on the order of 75% substantially anhydrous and 25% crystalline.

3. The method of preparing a package of hypo fixing material comprising the steps of filling a porous flexible bag with a measured amount of hypo, subjecting the same to moisture, molding the moistened package under pressure and drying in solid molded form.

4. The method of preparing a package of hypo fixing material comprising the steps of filling a porous flexible bag with a measured amount of homogeneously mixed substantially anhydrous and crystalline hypo, subjecting the same to moisture, molding the same under pressure into a brick and drying in solid molded form.

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