UNITED STATES PATENT OFFICE.

CARLETON ELLIS, OF LARCHMONT, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CHADELOID CHEMICAL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST VIRGINIA.

PROCESS OF DETACHING WALL-PAPER.

1,083,007. Specification of Letters Patent. Patented Dec. 30, 1913.

No Drawing. Application filed February 18, 1908. Serial No. 416,544.

To all whom it may concern:

Be it known that I, CARLETON ELLIS, a citizen of the United States, and resident of Larchmont, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Processes of Detaching Wall-Paper, of which the following is a specification.

This invention relates to an improved process of removing old wallpaper from the walls to which it is attached, and has for its object the speedy removal of a wallpaper without injury to the plaster, wood or other surface to which said wall-paper may have been attached, all as more fully hereinafter set forth.

The removal of wallpaper by scraping or by steam treatment, or by both conjoined, offers many difficulties, and is, generally speaking, laborious. I have found certain solutions of certain salts of a hygroscopic nature to be of great utility in the softening of such old wallpaper preparatory to its removal and my improved process consists in the application to said wallpaper, of solutions of hygroscopic salts, which in the terms of this art may be described as substantially "neutral", that is to say, have no deleterious action on varnish or wood or other materials with which they may accidentally come in contact. Highly acid solutions are dangerous to handle, and if they come in contact with woodwork or with painted surfaces are liable to cause serious damage. Volatile solvents ordinarily act upon paint or varnish.

My invention comprises the use of neutral salts which are placed in suitable solution, which solution when applied to wallpaper readily retains moisture, or in fact even absorbs from the moisture of the air an additional amount of water thereby maintaining the wallpaper in a damp condition until the paste or other adhesive is so softened that the paper may be readily detached from its support.

I preferably employ such hygroscopic salts as the chlorids of calcium, magnesium, and zinc, these being cheap, readily available and highly efficient for the purpose. The chlorid of zinc solutions have the additional advantage, when concentrated, of "parchmentizing" the paper, rendering it capable of being stripped from the wall as a firm sheet. I may, however, use hygroscopic salts such as acetate of potash and the like. I dissolve the salt or salts in water or water and glycerin or other suitable solvent to form preferably a rather concentrated solution and apply this solution to the walls with a brush or sponge and allow the composition to remain thereon until the wallpaper is detachable. From one to twenty-four hours may be required for this purpose, depending upon the number of sheets of wallpaper to be removed and upon the character of said paper. The rapidity of action is generally enhanced by applying the composition in a heated condition. This may be accomplished by simply warming before use, or by using a spraying device which is adapted to handle such hot applications. Some very highly sized or water-proofed papers, or papers containing designs imprinted with water-proof ink, are occasionally somewhat resistant and I have observed that the addition to the composition of a moderate amount of alcohol, acetone and the like, is occasionally an aid in accelerating the penetration of the solution. In extremely dry weather the action of the solution may be slightly accelerated by placing in the room where the paper is being treated, open pans of water, or by generating steam through the boiling of water contained in suitable vessel. The hygroscopic salt thereby is enabled to take up the maximum amount of moisture and to thus bring about rapid softening of the wallpaper, even in the driest weather.

A suitable composition for carrying out my process is made by dissolving two pounds of zinc chlorid and two pounds of calcium chlorid in one gallon of water. This may be applied hot or cold, but preferably by hot spraying, or by means of a hollow brush appliance.

Another composition useful in treating wallpaper of a somewhat water-proof character is made by dissolving eight pounds of zinc chlorid in one gallon of water and in adding thereto one-half gallon of wood alcohol or denatured alcohol.

Another formula comprises ten pounds zinc chlorid and five-eighths of a gallon each of wood alcohol and water.

A composition useful for paper which has been exposed for a long time is made by dissolving eight pounds of magnesium chlorid

in three quarts of water and one quart of glycerin. A little methyl acetone aids the penetrative qualities.

Certain pastes are more readily softened by a solution which is slightly acid and for such application I prefer to use weak acetic acid in preference to a mineral acid, especially the fixed mineral acids. To make a suitable weakly acid solution, I add about eight ounces of concentrated acetic acid to a gallon of the composition. Hydrochloric acid may be used to advantage with zinc chlorid solutions. An illustrative formula comprises ten pounds zinc chlorid, one pound hydrochloric acid, one gallon water and one-quarter gallon denatured alcohol.

Casein pastes which are not readily softened by an entirely neutral or slightly acid composition are more easily softened by a solution which is slightly alkaline, and to effect suitable alkalinity of the solution I prefer to employ for such applications a hygroscopic metallic chlorid which is slightly basic; a result which may be brought about by the treatment of neutral solutions of the chlorid with a basis body or hydrate in regulated quantities. Ammonia sometimes may be used to advantage in these compositions. When an especially resistant wallpaper is to be detached it is sometimes desirable to thicken the composition either with a soluble or insoluble thickener; as, for instance, whiting or other mineral or vegetable filler. Irish moss solution or pectinous matter may also be used for thickening, the proportion, of course, being relatively small. A formula illustrating such a composition comprises 75% granulated calcium chlorid, two pounds, Irish moss, 1 ounce and water, 1 quart. A little alcohol or ammonia may be introduced.

What I claim as my invention is:—

1. The process of detaching wallpaper which consists in applying thereto an aqueous solution of a hygroscopic salt having a substantial solvent action on cellulose fiber, in allowing said solution to remain in contact with said wallpaper and thereby distend and dissolve the fiber thereof, in simultaneously softening and loosening the adhesive securing the wall paper in position and in thereupon removing said wallpaper from its support.

2. The process of detaching wallpaper which consists in applying thereto a hot solution of a hygroscopic salt having a substantial solvent action on cellulose fiber, in allowing said solution to remain in contact with said wallpaper and thereby distend and dissolve the fiber thereof, in simultaneously softening and loosening the adhesive securing the wallpaper in position and in thereupon removing said wallpaper from its support.

Signed at New York in the county of New York and State of New York this 22 day of May A. D. 1907.

CARLETON ELLIS.

Witnesses:
FLETCHER P. SCOFIELD,
RICHARD WASTEOAT.