

UNITED STATES PATENT OFFICE.

CHARLES CORNELIUS PALTRIDGE, OF MALVERN, SOUTH AUSTRALIA.

PROCESS OF TREATING PAPER.

SPECIFICATION forming part of Letters Patent No. 652,287, dated June 26, 1900.

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To all whom it may concern:

Be it known that I, CHARLES CORNELIUS PALTRIDGE, a subject of the Queen of Great Britain, and a resident of Cheltenham street, Malvern, South Australia, have invented certain new and useful Improvements in Processes of Treating Press-Copying Paper, of which the following is a specification.

My invention relates to an improved process for treating paper whereby it is rendered fit for receiving press-copy impressions without necessitating the subsequent application of moisture thereto. Hitherto several attempts have been made to achieve the above object by treating paper with a mixture, such as glycerin and chlorid of sodium; but in the majority of cases where paper has been treated in this manner it has been found in practice that while the paper gives the desired effect when the chemical preparation is comparatively new or fresh, yet it very readily becomes dry and totally unfit for achieving the desired result.

My invention consists in treating the paper with an oleo-resinous substance, preferably turpentine, and subsequently applying glycerin thereto. These two substances or chemicals when applied to paper mutually assist each other in retaining their moist elements, and the paper thus treated maintains its copying properties for a considerable time.

In carrying my invention into effect I prefer to use thin paper of good quality and more or less semitransparent in its manufactured state. Such paper as is known as "tissue-paper" is in this respect well adapted to my purpose; but for convenience of manufacture I may use that class of paper generally known commercially as "manifold-paper," as such paper is already treated with turpentine, and it therefore only remains to add a glycerin coating thereto. It may, however, be mentioned that when manifold-paper is used the best results are obtained from the recently-manufactured material, as I find by actual experiment that the properties of the turpentine when applied to paper alone have a tendency to evaporate, and thereby render the paper less suitable to my process.

A simple method of preparing the paper is as follows: A sheet of paper of approved qual-

ity is laid over a flat surface, and a coating of turpentine is applied thereto by aid of a soft sponge or camel's-hair brush. As soon as the turpentine has soaked well into the body of the paper a coating of glycerin is similarly applied. The paper is then exposed to the air for a period of from one to seven days, according to the state of the atmosphere, or it may be slightly dried in a warm dry room or oven. The paper is then ready for use and, if so desired, may be bound in book form.

In manufacturing large quantities the process can be carried into effect by aid of revolving rollers such as are employed in the manufacture of sensitized paper as used for photographic purposes.

A modification of my process consists in mixing turpentine and glycerin together, so as to form one stock solution, and employing such solution for coating the paper; but my results so far have not proved as satisfactory with this process as by applying the two chemicals separately or in successive coatings.

When paper has been prepared by my process, the method of using the same for press-copying purposes is substantially as follows: The original document having been written or printed with copying-ink is placed with its upper side adjacent to the prepared paper, and pressure is applied thereto with a copying-press in the ordinary manner. A portion of the copying-ink readily adheres to the prepared sheet, thus making a negative copy, which can be read as a positive through the paper which is rendered transparent by the turpentine. Should the prepared paper be bound in book form, it is only necessary to place a slip of blotting-paper between the used leaves to prevent adjacent copying matter from being inadvertently transferred from leaf to leaf. The blotting-paper absorbs a portion of the moisture, and thus prevents trouble arising from the cause indicated.

It is to be understood that other chemicals may be used or applied to the paper for stiffening, hardening, or rendering it more or less opaque, if so desired, without departing from the nature of my process.

Allowing a margin for atmospheric and climatic differences experiments, seem to indicate that the best proportions of the ingre-

dients are one-half gallon of oleo-resinous substance, such as turpentine, to three and one-half liquid pounds of glycerin.

5 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

10 The herein-specified improved process for treating press-copy paper for use without the subsequent application of moisture thereto, consisting in the application thereto of turpentine and glycerin or equivalents there-

of substantially as hereinbefore described whereby the paper is rendered fit for receiving press-copy impressions without necessi- 15 tating the subsequent application of water thereto.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHARLES CORNELIUS PALTRIDGE.

Witnesses:

JOHN HERBERT COOKE,
PERCY JOHN CLARK.