Abstracts from the Specifications of Patents, connected with Postage and Revenue Stamps, granted by the United States Patent Office from 1863 to 1898.

BY THE EARL OF CRAWFORD, K.T.

(*Continued from p.* 162.)

EARLE, JOHN, and STEEL, ALFRED B., of Philadelphia, Penn. 13.7.69. No. 92,593. *Improvements in Printing in two or more Colours.*

A steel or copper plate is engraved as to that part of it which is to be colour "y." Then that part of the plate which is to be printed in colour "z" is cut out of the plate.

This is called the Female Plate.

Pieces of steel or copper are made to precisely fill the holes in the Female Plate. These are fixed immovably on a back plate in their right positions, and then engraved for the printing of colour "z."

This is called the Male Plate.

For use the Male Plate is inked up, and then the Female Plate; this is then laid over the face of the other so that the design then appears on one surface, but in the two inks; the whole is then wiped down, and is passed through the roller press. Perfect and invariable registration is thus attained.

This is similar to Congreve's patent used in England in 1840 for many essays.

COOMBS, CHARLES L., of Washington, District of Columbia. 24.8.69. No. 94,079. *Improved Composition for Gumming.*

Take a solution of gelatine in hot water, and add to it drop by drop or slowly a solution of *tannin* until *nearly all* the gelatine is precipitated.

Then heat the mass to about 212° F., and stir until the precipitate is dissolved.

It may also be prepared by adding to a warm solution of gelatine a solution of tannin in excess, until *all* the gelatine is precipitated.

This precipitate is washed, and sufficient (free) gelatine is added to dissolve the whole by heat.

To be applied while warm, with a brush or other means.

When moistened and attached to any material it cannot be removed without destroying the stamp, by the action of any solvent—water, alcohol, etc.

It is occasionally advantageous to add *albumen.* The composition is cooled to 120°–130° F., and the albumen added in solution.

THORPE, WILLIAM, of St. Louis, Missouri. 5.10.69. No. 95,624. *Double Printing with Sensitive Inks.*

Use inks of different colours, and so that a solution of any *acid* will destroy the one, and a solution of any *alkali* will destroy the other. To prevent the removal of cancellation marks after use.

The *green* ink is made of about fifteen parts of *verdigris,* two parts of

ultramarine, half part of chrome-yellow, with boiled linseed oil and flake-white in sufficient quantity for consistency and body.

The *red* ink is made of about fifteen parts of litmus-red, one part of carmine-lake, with boiled oil and flake-white as required. The last is as sensitive as possible to acids, the first to alkalis.

The groundwork of the stamp should be printed in one ink, the lettering, figures, vignette, etc., in the other.

Any attempt at cleaning off obliteration marks by acid or alkali destroys that part of the printing which is sensitive to it before it has had time to act on the rest of the obliteration.

ANTISELL, THOMAS, of Washington, District of Columbia. 5.10.69. No. 95,626. *On Sensitive Printing Inks.*

Ink readily decomposed by *alkali* or *acid* made of two salts, fifteen parts of verdigris, one part chrome-yellow, well blended, and flake-white to give body—the whole rubbed up with boiled oil.

When an alkali is used such as carb. sod. the copper salt is decomposed, and the colour changes. If an *acid* is used to neutralize the alkaline action, the chrome-yellow is acted upon and the colour of the stamp irretrievably damaged.

Ultramarine may be used instead of the chrome-yellow. Salts of nickel or cobalt may be used as the copper salt, but they are not so good as the verdigris.

Another very sensitive ink is sixteen parts carbonate or acetate of copper, one part extract of logwood, one part ultramarine, and flake-white sufficient for a body.

This class of inks is best for the *body* of a stamp.

Vegetable inks are best for the *lettering* or *vignettes.*

Use litmus or logwood treated with a small quantity of acid so as to change their colour to a bright red, say fifteen parts. Add one part carmine and flake-white sufficient for body. Mix with boiled oil or other suitable for plate printing.

This is highly sensitive to alkalis.

LENHER, SAMUEL, and SPENCER, HALLAM H., of Philadelphia, Penn. 7.12.69. No. 97,528. *Chemically Sensitive Paper.*

To prevent the restoration of cancelled stamps.

The paper previous to printing upon is coated with a size impregnated with an earthy substance, insoluble in water.

Use 1 lb. carbonate of lime, or magnesia, or baryta or other earth, easily decomposed by acids. Add 1½ oz. of glue, 2 oz. of gum-arabic, dextrine, or other gum, readily soluble, and 1 quart of water.

Dissolve the glue and the gum in the water, heated till both dissolve; then stir in the "earthy" body till thoroughly mixed smooth and of uniform consistency. Apply this to the paper and dry. This paper when slightly dampened is ready for printing. If a stamp be cancelled by printing ink, writing fluid, or other ink, any attempt to clean this off by means of an acid will decompose the earthy body and give off carbonic acid gas, destroy the size, and efface the stamp. If cleaning be tried by water or alkalis, the glutinous medium will be dissolved, and the least friction will disintegrate and deface the print.

CLARK, SPENSER M., of Washington, District of Columbia (Assignor to Adolphus S. Solomons, of same place). 21.12.69; ante-dated to 21.6.69, No. 98,031. *Double paper, one being perforated. Self-cancelling Stamp.*

A paper composed of two layers, one being perforated (in a pattern, etc.), the two being united and the printing done on the perforated side, the gumming on the imperforate side. Any attempt to clean the stamp or soak it off a letter or document, the two layers become separated. But one is no use without the other, as the printing on the upper layer impresses part of the design *through* the perforated holes on to the lower layer of paper—so the design is only complete when the one is over the other.

JONES, GEORGE T., of Cincinnati, Ohio (states himself to be a bank-note engraver). 22.3.70. No. 101,020. *Use of Two Coloured Sensitive Inks.*

Uses.—Separate plate or die for each varying coloured ink. The designs thus printed on the stamps should be disposed and combined so that any cancellation mark will of necessity cross parts of both or all such devices.

The inks are sensitive to acids or alkalis.

For *red* ink, take sixteen parts carmine, eight parts magnesia, two parts copperas, one part ammonia, delicately sensitive to *acids.*

For *purple* ink, sixteen parts aniline blue, sixteen parts deep lake, eight parts magnesia, one part pearl ash.

This is readily soluble in alkalis.

Part or all of the printing may be done on paper before sizing; also I print part of the devices on partially sized paper. Then apply a size readily soluble in alkali, and then print on this surface with an ink sensitive to acids or *vice versâ.* Thus any attempt to clean a stamp by acid or alkali will inevitably cause the destruction of the stamp.

This also defeats the usual way of softening common ink and getting a transfer for a counterfeit plate.

SIMONDS, JOHN P., of New York. 22.3.70. No. 101,170. *Orchil, Combined with Printer's Ink.*

For the prevention of erasure or removal without detection of the signatures, amounts, or written parts, or cancellations, etc., of cheques, documents, or Revenue or Postage Stamps.

The system adopted is the employment for printing a tint in oil colours on the face of such articles, of an ink the colour of which will be removed or changed by acids or other chemicals that may be employed for the removal of the written or other superscription.

Formula for the basis of inks for printing tints in oils. The proportions are all by weight.

Six parts zinc or Paris white, one part magnesia, one part beeswax, three parts printer's varnish, one part spirits turpentine, two parts orchil.

Ground together, and the ink made up in the same way as any other oil printing ink.

This seems mostly applicable to cases in which *writing* inks are used.

FLETCHER. 5.4.70. No. 101,604. *Adhesive Stamps.* [Out of print.]

ABRAHAM, LEWIS, of New York. 26.4.70. No. 102,200. *Multiple perf. Paper Combining Design.* [This is a new conception apparently.]

A stamp that cannot be used but once, as any attempt to take it off will cause fracture, or totally destroy it.

Made of two or more layers (of paper) somewhat transparent. Each is perforated with a design, so arranged that when they are superposed the various perforations, combined, make up a given design—being transparent, any inscription on inner layers is visible. (See illustrations.)

E.g., if the words Fifty Cents is wished for on the completed stamp the lettering would be distributed between the upper and lower layer (of a two-paper stamp), thus:—

Lower layer. *Upper layer.* *Combined.*

Patterns perforated on the other parts would show, by portions of them being of only one thickness of paper.

Any attempt to wet the stamp for removal or cleaning would certainly disintegrate the layers of paper and destroy the design.

[It is therefore a *mechanical* safeguard, as opposed to a chemical one.]

CASILEAR, GEORGE W., of Washington, D.C. 21.6.70. No. 104,554. *Improvement in Printing Ink.*

Ordinary printing ink dries in a permanent or *insoluble* form, so that cancel marks or writing over it may be cleaned by acids or alkalis without affecting the printed parts.

Many attempts have been made to cause the printing ink to dry in a *soluble* or permeable state to acids, etc., but they have always been found defective in their working qualities.

After continued experiment I have found that by combining *Glycerine* with the "patent Driers" of commerce with boiled molasses, I obtain a vehicle in which the ingredients mutually correct the defects of each other—the *boiled molasses* giving great strength and tenacity to the composition, and the *Drier* overcoming the disposition of the *Glycerine* to remain gummy and sticky after printing, and the *Glycerine* preventing the "*Drier*" from rendering the impression so fixed and permanent as to be insoluble and impervious to the action of fluids, acids, and chemicals such as are used for removing the inks used for cancellation, etc., thus insuring the destruction of the design as well as the cancel when such fraudulent attempts are made.

WALKER, FELIX, of New Orleans, Louisiana. 4.6.72. No. 127,663. *Self-cancelling Labels.*

Transparent paper is saturated with *coal* or other oil, and on one side is printed such device as may be required. On the reverse a coat of paste or mucilage is applied; when this is dry a further printing is made over the gum or paste. The two printings should not be opposite each other [but

each should be the complement of the other]. The outer printing is to guard against counterfeit.

If the part or spot where the stamp is to be is moistened the label will readily adhere, and when once dry cannot be removed without defacing the printed design on the pasted side, thus rendering it unfit for further use.

It is not necessary to print a device on the upper side.

Is aware of patent of M. Loewenberg, but in his case the varnish prevents the moisture from getting through the stamp, and the whole printed matter comes off with it.

CASILEAR, GEORGE W., and MCINTIRE, WILLIAM C., of Washington, D.C. 21.9.75. Filed 21.8.75. No. 167,987. *Woven Fabric in the Paper.*

An open woven fabric or warp is bedded in the paper during manufacture. [The subject of another patent pending. The fabric is apparently very open, about $\frac{1}{16}$ in. mesh, and is spread over the sheet.]

(Of no importance to my subject; probably better left out, but first see the other patent referred to as *pending*.—C.)

STEEL, CHARLES F., of New York, N.Y. 26.10.75. Filed 15.3.75. No. 169,125. *Improvements in Postage Stamps. "The water-leaf pp."*

Is in the employ of the *Continental Bank Note Company* as superintendent of the manufacture of postage stamps [formerly with the *National Company*].

Refers to his patent for a "*double paper* stamp," 16.2.69, No. 86,952.

The following is an improvement, and cheaper to produce.

Uses.—A soft unsized paper analogous to blotting-paper, and absorbent, known in the trade as water-leaf paper. The face is printed from engraved plates, or, if preferred, from surface printing plates. The ink is allowed to dry. The back is then treated with a solution of *starch* made of wheat flour, rye flour, or other materials, laying a thin coating to fill the interstices between the fibres of the paper, so as to give the back surface a firmer character than the front.

After flattening in a press, British gum, or other soluble adhesive, is applied on the back of the starch layer. After being dried and pressed again the sheets are ready for use.

[The process is illustrated by means of enlarged sections of the paper as treated.]

The soft paper allows the ink of printing or cancelling to sink into its substance; the same quality would allow the gum to penetrate and give an oily appearance to the stamp if it were not prevented from doing so by the layer of *starch*.

Any attempt to remove the cancelling ink involves wetting and friction, and the soft body of the stamp will be destroyed without fail.

SCHNOBLE, JOSEPH, of New York, N.Y. 4.1.76. Filed 1.12.75. No. 171,871. *For Perforation of the Paper for . . . Stamps.*

Uses.—Tissue woven paper. Soak in solution of beeswax in turpentine; this renders it transparent.

Then size one side of the paper with compound of glue, sugar, glycerine,

muriatic acid, and water one part by weight of each to ten of water. Composition I.

Then apply to the same side of the paper composition No. II, one part each of albumen and glycerine to two of water.

When dry print the design on the coated side, and over the print apply a suitable gum.

When once stuck down it is impossible to remove it, as if dampened to soften the gum the whole design comes away from the paper.

If used for a stamp to be cancelled omit the beeswax and apply Compositions I and II, and print on this surface. Apply the gum to the *other* side.

When cancelling ink is attempted to be removed the design comes off.

He only claims the Compositions I and II for coating the paper.

WINNER, JOSEPH E., of Philadelphia, Penn. (Assignor of one-half to Henry K. Fox, of same place). 21.3.76. Filed 29.12.75. No. 175,228. *Double Paper in Part.*

The principle claimed is a stamp printed on a double paper which he calls protected or guarded.

The blank sheet has another sheet of thin paper pasted down upon it so that they become one. This guard sheet does not cover the whole surface, but may be a cross or other figure. When printing is made the design is partly on the single and partly on the double part of the paper.

Any attempt to clean a cancel mark would soften and scratch the "guard" doubled part.

Proposes that this "guard" paper should be of different colours, thus to signify different values, and permitting all printing to be in black or one coloured ink.

Does not claim a double paper simply, but a partly double partly single paper.

Also the colouring as distinctive of value. (Illustrated.)

FLETCHER, ADDISON C., of New York, N.Y. 28.3.76. Filed 9.3.76. No. 175,242. *Improvement in Postage . . . Stamps.*

The stamp is printed in the ordinary way, gummed and perforated ready for use.

Then by means of suitable dies the body of the paper of each stamp is cut entirely in detached lines radiating from a common centre, leaving connecting portions to keep the divided parts together, but separating the centre and outer portions to such an extent as to render it almost impossible to remove the stamp in an entire condition when once stuck down.

This patent was used by the U.S. Government for a short time on stamps printed by the American Bank Note Co.

Owing to the pattern of the cutting die it is known as *Fletcher's Cogwheel.*

DUMMER, SAMUEL R., of Jersey City, N.Y. 23.5.76. Filed 20.4.76. No. 177,821. *Mechanical Cancellation.*

Principle involved.—Tearing off part of the stamp, thus destroying it for future use.

Method proposed.—In the face of a finished stamp two slits are cut, and

through the slit is threaded a slip of paper, which is gummed to the back of the stamp between the slits, and the other end projects and lies loose on the face.

Pulling at this slip tears away that portion of the stamp to which the end of the slip is gummed, destroying it, and leaving a hole in it. Doing this would tear the envelope also, but this is overcome by putting a patch or "re-enforcing piece" on the back of the stamp larger than the part to be torn away. This is gummed round the *edges* to the back of the stamp, and on it a device may be printed.

Therefore when the slip is torn away the surface of the stamp is destroyed, and below the part removed is disclosed the device, till then hidden.

(Impracticable.)

VANDER WEYDE, PETER H., of Brooklyn, N.Y. 25.7.76. Filed 29.7.75. No. 180,394. *Cancellation by Heat.*

Rehearses failure of means of cancellation by chemical means a few hours after application of the moisture to stick the stamp down. All have proved impracticable and unreliable.

Uses pigments which will resist dryness and moisture, cold and light, but not heat, as they volatilize at a temperature of from 212° F. to 300° or 350° Fahrenheit, not sufficiently high a temperature as to injure or even change any ink, writing fluid, or vegetable colouring matter.

Compositions which can be used are *bi-iodide of potassium* for *scarlet*, *realgar* for *dark red*, *orpiment* for *yellow*, *red iodide of mercury*, and some coloured *cyanides* and *fulminates*.

All permanent colours may also be used.

So as not to destroy the denomination of the stamp part of it is printed in ordinary ink, the rest of the design in one or other of the substances above mentioned.

The letters are put in bulk into a box, which is heated by a coil of steam pipe to 300°, or other suitable temperature. A few minutes to this heat is sufficient to volatilize all the sensitive parts of the device on the stamps, and they are effectually cancelled.

EHRHARDT, LOUIS H. G., of Philadelphia, Penn. 1.8.76. Filed 15.4.76. No. 180,564. *Against Removal of Cancellation Marks.*

Uses a paper prepared with a special size, on which is the printing. Take ordinary unsized paper, and subject it to a bath of size, soluble in water, composed of *gum tragacanth* four pints, dissolved *starch* one pint, to which is added one ounce of *acetate of alumina*, also in solution, or any other ingredients which will produce a soluble size that will thoroughly permeate the fibre of the paper, and leave one or both surfaces completely covered by the size.

On one side print the design with any ink in ordinary way, the other side being gummed as usual. Subject to calendering and finishing processes, and it is ready for use.

The contact with any fluid used to efface a cancel mark will ensure the destruction of the design, as it softens the size, which is the only agent by which the ink design is held in union with the paper.