T. I. PORTER.

METHOD OF DETECTING COUNTERFEIT ARTICLES.

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1,198,053. Patented Sept. 12, 1916.

Fig. 1.

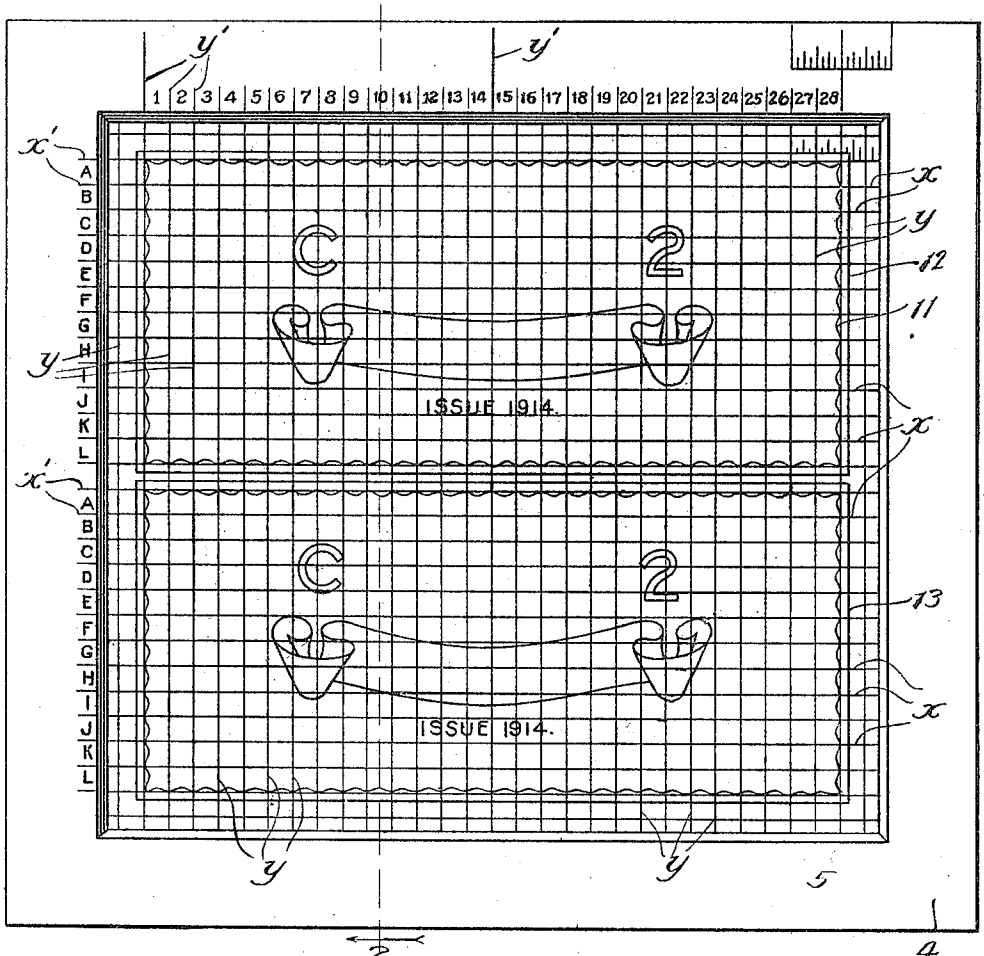
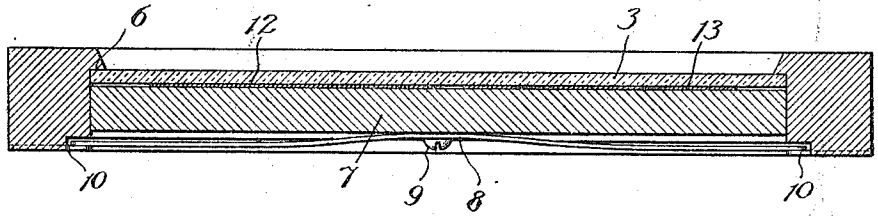


Fig. 2.



Witnesses:

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METHOD OF DETECTING COUNTERFEIT ARTICLES.

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To all whom it may concern:

Be it known that I, THOMAS I. PORTER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Methods of Detecting Counterfeit Articles, of which the following is a specification.

My invention relates to a novel method by which the genuineness of paper money, coins, certificates, bonds, postage and revenue stamps, or other articles bearing designs of any kind whether engraved, embossed, lithographed or otherwise produced thereon, may be determined.

Counterfeit paper money, bonds, certificates, postage and revenue stamps, or the like, are usually made by a process involving as a step the photographing of the article to be counterfeited, and while the article produced thereby may so closely imitate the original that one examining it by the methods commonly employed is deceived as to its genuineness, certain portions of the photographed design on the article, do not, by reason of the distortions produced in the photographing process, occupy the same positions relative to other portions of the design thereof, as do the corresponding portions in the case of the original. Furthermore a straight border line or straight line of letters is oftentimes so distorted in the photographing process that such lines on the counterfeit article will be in slanting or curved position instead of straight. In the production of counterfeit coins by dies cut in simulation of the originals, the coins produced therefrom while bearing a close resemblance to the originals, nevertheless present variations in relative positions of the features of the design one to another.

My primary object is to provide a method whereby the genuineness of articles of the varieties above stated may be quickly and accurately determined.

In the accompanying drawing I have shown a device of a character adapted to be employed in carrying out my method particularly where it is desired to determine the genuineness of paper money, Figure 1 of the drawing representing the device by a face view thereof, with two sheets of paper representing bills or notes to be compared, assembled therewith and bearing an arbitrary design to illustrate the manner of using the device for detecting irregularities in the design of the one as compared with the other; and Fig. 2 being a section taken on the line 2—2 on Fig. 1 and viewed in the direction of the arrow.

In carrying out my invention I prefer to use a plate 3 of transparent material, preferably glass, with parallel lines x extending across its face from one edge thereof to the opposite edge and parallel lines y extending from one to the other of the other edges of the plate, the lines x and y being uniformly spaced and arranged at 90° to each other, as represented, to cause the glass to present a checkered appearance, each one of the squares thus produced being preferably of the same area, one-quarter inch square. These lines may be formed on, or in, the plate 3 in any suitable manner (as for example by diamond ruling) so long as they can be seen by the observer when the plate is positioned over the article to be compared.

The plate 3 in the construction illustrated is used in connection with a frame which, as to its general features of construction, is the same as the printing frames commonly employed by photographers and involving a frame section 4 provided centrally with an opening 5, with a continuous shoulder 6 extending about the opening 5 and against which the plate 3, inserted into the frame 4 from the rear side thereof, bears, and a follower 7 adapted to fit the interior of the frame 4 and be releasably secured in position as by spring clips 8, one only of which is shown, pivoted between their ends as indicated at 9, and adapted to enter grooves 10 in the side of the frame 4 by swinging the clips at their pivots and while holding them with their ends pressed toward the follower 7.

By preference the face of the frame 4 is provided with extensions y' of the lines y, the spaces between these lines being marked from 1 to 28 inclusive, as shown in Fig. 1. The face of the frame 4 also is provided with lines x' which form continuations of the lines x, the spaces between the first thirteen of the lines x^1 being marked A to L inclusive, and the spaces between the next thirteen lines exclusive of one space, being similarly marked.

In the use of the device the articles to be compared, such as the bills or notes, are positioned between the rear side of the plate 3 and the follower 7. It is desired that the upper bill indicated at 12, and which we will assume is an original bill, be so positioned in the frame that the exact center of the design thereon, and which in the case of a bank-bill or note would be a point midway of the ends of the border of the design, register with the one of the lines y in line with the line y' which separates the spaces 14 and 15, and that the top of the design on the bill 12 register with the line x^1 defining the top space A of the upper series of letter spaces. The bill or note which we will assume is a counterfeit and which is to be compared with the bill 12, is represented at 13, and would be so positioned that the center of the design thereon will register with the one of the lines y^1 which separates the spaces 14 and 15, and the upper line of its border will register with the line x^1 immediately above the letter A of the second series thereof.

With the original bill 12 and the one sought to be campared therewith and the genuineness of which is in dispute, namely, the one represented at 13, in position as stated, the operator may by means of the lines x and y readily determine, by comparing the positions of features of the design on the bills relative to these lines, whether or not the bill is genuine.

It may happen that while the upper portion of the design of a counterfeit bill is the same as the outer portion of an original bill, the distortion produced in the photographing process hereinbefore referred to will cause portions of the design intermediate its edges to occupy a different position relative to the border or other portions of the design in the case of the counterfeit than they do in the case of the original. Thus in the illustration presented in the drawing it will be noted that the letter C and the numeral 2 appearing on the face of each of the bills 12 and 13 are somewhat closer together in the case of the bill 13 than in the case of the bill 12 and tip slightly toward the center of the bill, and further, the scroll beneath the said letter and numeral presents slightly greater curvature lengthwise of the bill in the case of the counterfeit than in the case of the original. Furthermore the letter and numeral referred to, and the scroll, as also the phrase "Issue of 1914," occupy different positions relative to the lines which define the spaces A to L inclusive in the case of the counterfeit 13 than in the case of the original 12. The above description will serve to clearly indicate the way in which my improved method may be employed to detect a counterfeit bill. It will be noted that by this method exceedingly slight variations, immediately stamping the bill or other document as a counterfeit, may be detected by locating the features of the bill 12 relative to the intersecting lines superposed thereon, with the position of corresponding features of the counterfeit bill 13 relative to the similar lines superposing it.

It will be readily understood that by standardizing the spacing of the intersecting lines and the positioning relative thereto of the articles to be compared one to the other, the Government in sending out descriptions of counterfeit money to enable those handling money to more readily detect counterfeits, may describe the same by stating in which space or where in a designated space, a certain feature of the design of a counterfeit bill will be found, thus enabling one desiring to determine the genuineness of a bill, by merely positioning the bill in the position of the bill 13 in the construction illustrated, to readily locate the position of such feature and thereby determine the genuineness of the bill. As for example, let it be assumed that the letter C represents a feature of a bill. It will be noted that the ends of the C lie in the space D^8 and that the line between spaces 7 and 8 passes substantially through the center of the letter C, whereas in the case of the letter C in the bill 13 in the upper end of this letter lies in the space C^8 and its lower end in the space D^8, and the line between the spaces 7 and 8 cuts through this letter about a sixteenth of an inch to the left of its center. Thus the counterfeit bill could be described by the Government by stating that the ends of the letter C will be found in the spaces C^8 and D^8. Furthermore the location of the phrase "Issue 1914" in the one case as compared with the other would provide a means of informing the handlers of money as to the detection of counterfeit bills. The above description is merely illustrative of the many conditions which may occur in the comparing of a counterfeit with an original bill, and will serve to indicate a way in which my method may be utilized.

It will be understood that the method may be practised in comparing any article bearing a design with one known to be an original wherein the relative locations of corresponding features on the articles differ in the case of the counterfeit. Besides being applicable to paper objects, having engraved, embossed or printed matter thereon, it is equally applicable to coins where it is desired to detect a counterfeit made from a die cut in simulation of the original and in which case the various features of the counterfeit die would occupy different positions relative to other features thereof than would be the case of an original, it being preferred that the lines x and y when coins are to be examined, be arranged to provide a

closer spacing than that described and this is also desired in connection with the examination of postage stamps.

While I have shown and described as the medium for comparing the relative positions of features on the articles to be compared, one with the other, a transparent plate provided with intersecting lines, which, however, is the preferred form of device employed, it is obvious that my improved method may be carried out by the use of dots, instead of continuous lines, on the transparent medium, or by using intersecting wires or strands mounted in a frame without a transparent plate, or if lines or dots are provided for the detecting purpose they could be arranged in circles or substantially so, one within the other, combined or uncombined with lines intersecting the circles, and the method which I claim could, therefore, be carried out by the use of any of those, as well as any other suitable agency.

What I claim and desire to secure by Letters Patent is:

1. The method of detecting counterfeit money, securities or the like bearing finely wrought designs, which consists in comparing the location or locations of one or more selected features in the design of the suspected counterfeit with the location or locations of the corresponding feature or features on a like article known to be genuine, by noting one or more points on a third object coinciding with the selected feature or features on one of the two articles under comparison, and noting the relation between the corresponding feature or features on the other article and the noted point or points on the third object, or a duplicate thereof.

2. The method of detecting counterfeit money, securities or the like bearing finely wrought designs, which consists in comparing the location or locations of one or more selected features in the design of the suspected counterfeit with the location or locations of the corresponding feature or features on a like article known to be genuine, by applying a third object to one of the two articles under comparison and noting one or more points on the third object coinciding with the selected feature or features on such article, and applying the same, or a duplicate object, to the other one of the articles and noting the relation between the corresponding feature or features on such other article and the noted point or points on the third object.

3. The method of detecting counterfeit money, securities or the like bearing finely wrought designs, which consists in comparing the location or locations of one or more selected features in the design of the suspected counterfeit with the location or locations of the corresponding feature or features on a like article known to be genuine, by superposing on one of the two articles under comparison, a transparent plate provided with intersecting lines and noting the position of one or more selected features in the design on such article relative to said intersecting lines, and superposing on the other of said articles the same plate, or a duplicate thereof, and noting the relation between the corresponding feature or features on the other article and the noted intersecting lines on the third object.

4. The method of detecting counterfeit articles bearing designs, which consists in comparing a suspected counterfeit with a known genuine by arranging the suspected counterfeit and the known genuine in juxtaposition, placing over said suspected counterfeit and known genuine an object of a character adapting the articles beneath it to be exposed to view and presenting different portions thereof in direct opposition to said articles, each portion being provided with marks identical in number and distribution with that of the other, and the articles being so positioned in relation to the object that the marks on the latter occupy, so far as may be, the same relative position over one article as over the other, whereby the position of a selected feature or features in the design on said suspected counterfeit relative to one or more of said marks on one of the portions of said object may be compared with the position of the corresponding feature or features in the design of the known genuine relative to a corresponding mark or marks on the other portion of said object.

THOMAS I. PORTER.

In presence of—
L. HEISLAR,
N. B. DEARBORN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."