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2,104,079

7350-1

FRAUD DETECTOR

Filed Sept. 29, 1934

X 3646

Ni-Co Filler
7, 1/2 inch - 44

FIG. 1

X 250-53

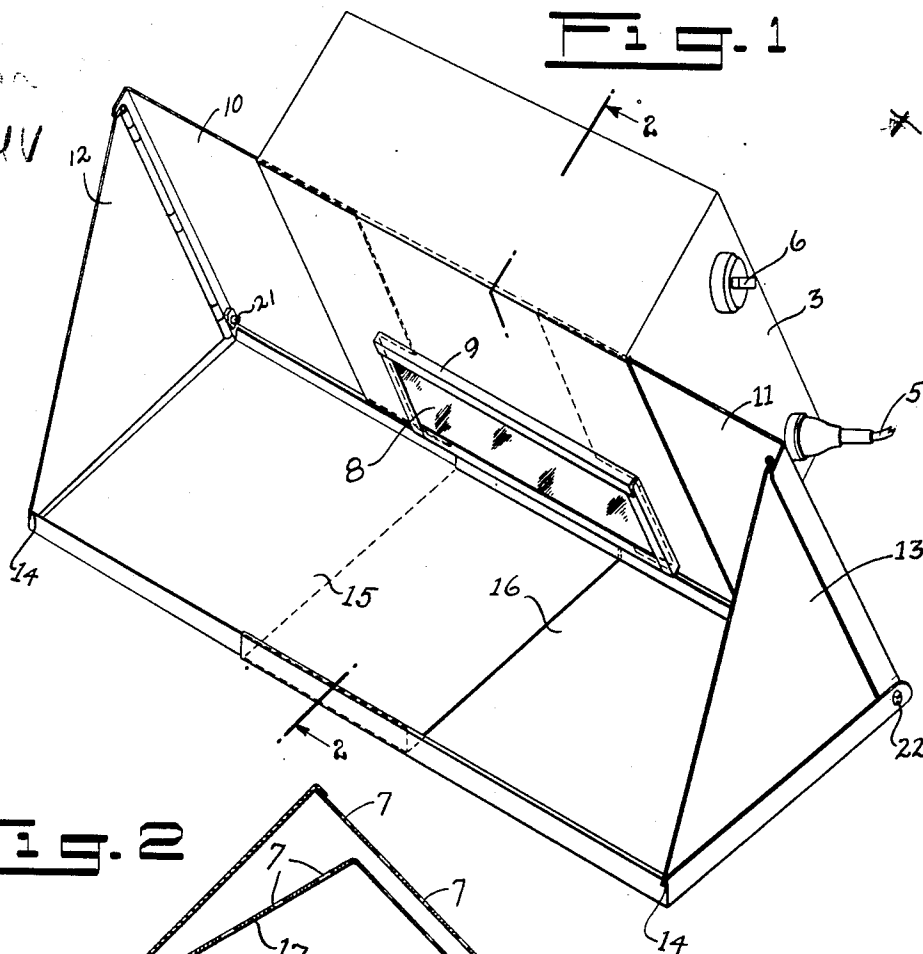
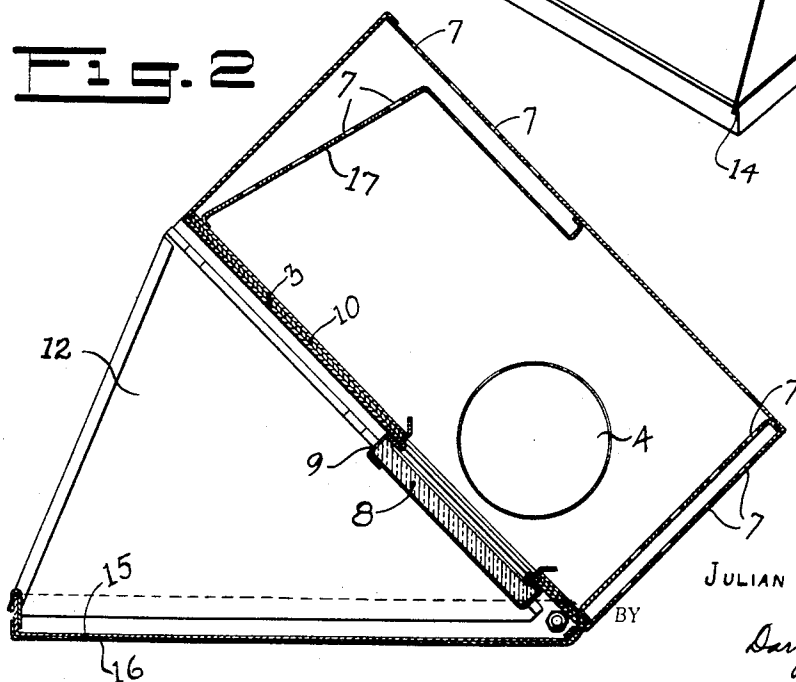


FIG. 2



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FRAUD DETECTOR

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Application September 29, 1934, Serial No. 746,058

2 Claims. (Cl. 88-14)

This invention relates to new and useful improvements in fraud detectors, and is particularly useful for detecting forgeries in checks, wills, etc.

5 I have discovered that chemicals which are invisible in ordinary light become visible when viewed in light of particular wave lengths, and that various other substances when viewed in light of the same wave lengths take on a different aspect than when viewed in ordinary light.

10 This is particularly noticeable in the case of chemicals which are used as ink removers. The signature of a check, or the amount of money for which the check is written, may be completely removed by a suitable ink eradicator, and a different amount of money or signature inserted. In ordinary light the altered check may appear to be perfectly regular. If viewed in light of the wave lengths utilized in practising my invention the original writing stands out with perfect clarity so that it is not only immediately obvious that the check has been changed, but the original writing on the check may be observed.

20 My invention also finds use in the case of forged bills. A bill which has been engraved with ink other than that used by the United States Government may appear in ordinary light to be perfectly genuine. If it is compared with a genuine bill under the light I use with my invention, the difference in the inks becomes immediately apparent.

30 Another use for my invention is in connection with the examination of gems both for their genuineness and for the detection of flaws therein. A genuine gem may be compared with an imitation and the imitation at once detected, while flaws in a gem stand out in a much more pronounced manner than in ordinary light.

40 After a large number of experiments with various wave lengths of light I have discovered that the best results are obtained when all wave lengths are absorbed by my light filter except those wave lengths in the visible portion of the spectrum lying approximately between 6745 and 7580 Angström units and that portion in the violet between approximately 3407 and 4132 Angström units. Small quantities of light of other wave lengths may be present without seriously affecting the results, and the wave lengths mentioned may vary by as much as 100 Angström units and still be useful.

50 In order to produce light of these wave lengths I use an incandescent bulb with a tungsten filament, such as those produced commercially for household use. For best results the temperature

of the filament should be approximately 3000 degrees centigrade. This temperature may be obtained by using a 100 watt, 64 volt light on a 110 volt line. I may also obtain results which are reasonably satisfactory, but not of the best, with a lamp in which the filament is at a lower temperature such as may be obtained for example by using a 250 watt 110 volt lamp on a 110 volt line.

5 In combination with the light source I provide a light filter. The light filter with which I have had the best results is a piece of optical nickel-cobalt glass such as may be obtained from any glass manufacturer. In fact the Corning Glass Works of Corning, New York, produce a glass which they call their No. 587, which produces excellent results. Although this particular glass transmits a small quantity of ultra-violet light along with the wave lengths mentioned above, I have discovered in the course of my experiments that this ultra violet light does not in any way enhance the results.

25 For the best results in practising my invention the light should be concentrated on the object to be viewed and other light should be shut off, that is the room should be darkened, but this is not absolutely necessary as if the light is sufficiently concentrated the results may be observed in a room to which a normal amount of daylight is being admitted.

30 In practising my invention I assemble the apparatus in suitable compact form, as shown in the drawing, in which

Fig. 1 is a perspective view of my apparatus; and

Fig. 2 is a section along the line 2-2 of Fig. 1.

35 In the drawing there is a casing 3 in which is enclosed an electric light bulb 4, as above described. Wires 5 lead into the casing and to the bulb. The electricity may be turned on or off by means of a switch 6 mounted on the casing. I provide vent holes 7 in the casing to afford suitable ventilation in order to avoid overheating. The inner surface of the casing is provided with an aperture in which is held a piece of optical nickel-cobalt glass 8. A sliding retaining member 9 is provided to hold the glass in place so that in the event it should become broken it may be easily replaced. Two sections 10 and 11 are provided to slide in apertures at two opposite edges of the inner surface of the casing 3. To these members are hinged triangular sections 12 and 13 having notches 14 at one corner. Also secured to these members 10 and 11 by

means of nuts 21, 22, are sliding base members 15 and 16.

My apparatus is shown open and arranged for use in Fig. 1. The object to be examined is placed on the base members 15, 16 under the light from bulb 4 coming through filter 3. In order to close it so that it may be carried from place to place, if desired, the notches 14 are removed from the corners of the base members 15 and 16 and the wings 12 and 13 folded inwardly. This releases the base members 15 and 16 which may then be folded upward and the entire sections 10, 12 and 15 on one side and 11, 13 and 16 on the other pushed towards one another so that the apparatus is folded into a compact box. A brace 17 gives added strength to the structure.

The apparatus may be used directly over a

bulky object, such as a ledger, by removing nuts 21 and 22, which permits the removal of base members 15 and 16.

What is claimed is:

1. A fraud detector comprising a casing, an electric light bulb enclosed within said casing, a window in said casing, a piece of optical nickel-cobalt glass in said window, a pair of wing members slidably mounted in said casing, and a pair of base members secured to said wing members and adapted to be opened to form a surface partially enclosed by said wing members on which an object may be placed for inspection.

2. The combination in accordance with claim 1 comprising means for detaching said base members.

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