

- [54] ELECTROPHOTOGRAPHIC MEMBER
WITH GRADED TELLURIUM CONTENT
- [75] Inventors: Hiroshi Hanada, Yokohama; Nobuo
Kitajima, Akishima; Tatsuo Masaki,
Tokyo, all of Japan
- [73] Assignee: Canon Kabushiki Kaisha, Tokyo,
Japan
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- [63] Continuation of Ser. No. 87,470, Nov. 6, 1970,
abandoned.

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- [52] U.S. Cl. 96/1.5; 252/501; 117/201;
117/215; 117/218
- [51] Int. Cl.² G03G 5/04
- [58] Field of Search 96/1.5; 252/501; 117/201,
117/215, 218

[56]

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Primary Examiner—Roland E. Martin, Jr.
Attorney, Agent, or Firm—Fitzpatrick, Cella, Harper
& Scinto

[57]

ABSTRACT

An electrophotographic photosensitive member comprises basically a base, a photoconductive layer and an insulating layer, and the photoconductive layer is an alloy layer containing tellurium. The content of tellurium increases in the direction of thickness toward the insulating layer side.

22 Claims, 6 Drawing Figures

FIG. 1

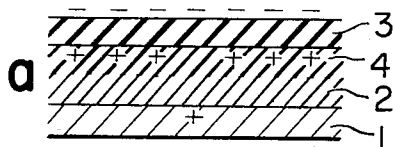


FIG. 2

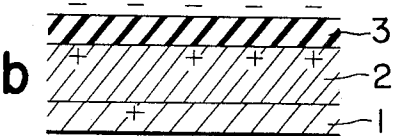
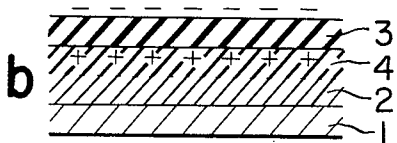
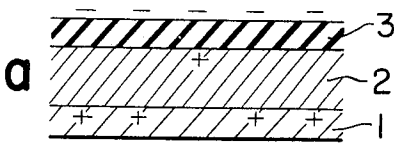


FIG. 3

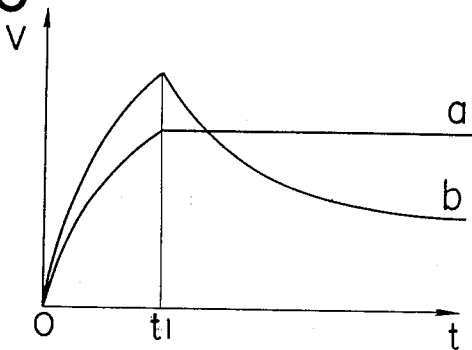
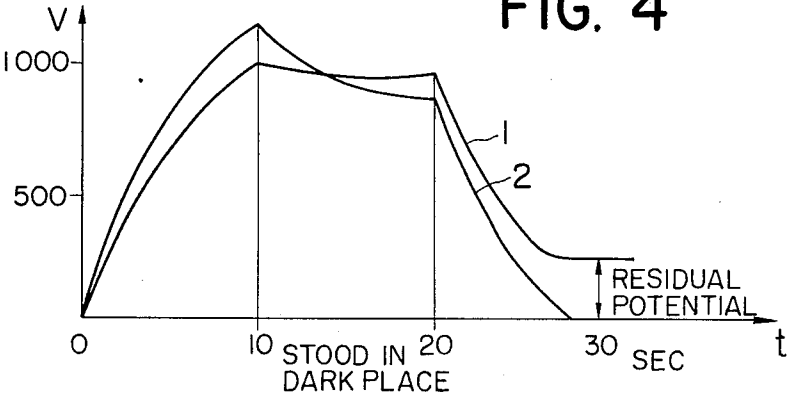


FIG. 4



INVENTOR.

BY

ELECTROPHOTOGRAPHIC MEMBER WITH GRADED TELLURIUM CONTENT

This is a continuation of application Ser. No. 87,470, filed Nov. 6, 1970, now abandoned.

This invention relates to an electrophotographic photosensitive member, and more particularly to a three layer element comprising a base, a photoconductive layer and an insulating layer, in which the rectifying property of the photoconductive layer is improved.

Heretofore, this kind of photosensitive element was known to be suitable for the electrophotographic system disclosed, for example, in U.S. Ser. No. 563,899 filed July 8, 1966 and U.S. ser. No. 571,538 filed Aug. 10, 1966.

In these electrophotographic systems, a three-layered photosensitive member, comprising a base, a photoconductive layer and an insulating layer undergoes a primary charge to charge, on the insulating layer a predetermined polarity, followed by a binding charge opposite in polarity, into the interface between the photoconductive layer and the insulating layer, or in the neighborhood of the interface. Then, contemporaneously with the application of the original image projection discharging is carried out, either by the corona having a polarity opposite to the aforementioned primary charge, or by alternating current, to release the aforementioned bound charge at the bright portion of the original image and, further, to leave the bound charge unchanged at the dark portion. Then the whole surface of the photosensitive member is subjected to a uniform irradiation to form an electrostatic latent image.

Therefore, the quality of the electrostatic latent image formed on such photosensitive members is dependent on the condition in which the electrostatic charge is bound.

Conventional photoconductive layers, especially those comprising Se, Se—Te, Se—Te—As etc., are high in durability and have panchromatic property and high sensitivity. However, the way in which the electrostatic charge is injected from the base into the photoconductive layer and the condition in which the injected charge is bound on and in the neighborhood of the interface mentioned above are still unsatisfactory, and these cause the final electrostatic image to be unsatisfactory with respect to contrast and other aspects.

An object of this invention is to offer a photosensitive member capable of forming an electrostatic image which is excellent in contrast and resolution.

A further object of this invention is to offer a photosensitive member of high sensitivity and panchromaticity.

Another object of this invention is to offer a photosensitive member which has a high dark resistance and improved rectifying properties.

A still further object of this invention is to offer a photosensitive member, high in durability.

Another separate object of this invention is to offer a method for manufacturing the excellent photosensitive member mentioned above.

Other objects of this invention may be obvious from the contents of the detailed description hereinafter disclosed.

FIG. 1a and FIG. 1b are sketches showing charge patterns formed on a sensitive member of this invention;

FIG. 2a and FIG. 2b are sketches showing the charge pattern formed on a conventional photosensitive member;

FIG. 3 is a graph representing the surface potential of FIG. 1a, and FIG. 1b, FIG. 2a and FIG. 2b;

FIG. 4 is a graph showing the change in potential during charging process for the photosensitive member of this invention and for the photosensitive member described in a comparison example.

Hitherto, color sensitivity and sensitivity of photosensitive elements have been successfully improved by general application of photoconductive substances belonging to the selenium-tellurium series. However, by an incorporation of tellurium, the property of the photoconductive layer is disposed towards the more n-type than when Se is used alone, and this results in the defect that injection of holes from the base into the photoconductive layer, becomes poorer.

However, since the degree of charge injection from the base into the photoconductive layer is directly influenced by the charge to be bound, it is very important to improve the state of injection.

In view of the foregoing, it is ideal to have the base side portion of the photoconductive layer in a state wherein holes are readily injected, i.e. the p-type, and the insulating layer side portion in a state wherein the charge is readily bound, i.e. the n-type.

The above described contents are applicable to a photoconductive element which contains a simple substance of Se, Te, the mixture of these substances, and further alloys of Se—Te—As or their mixture, as well as a Se—Te alloy.

Se is a p-type substance and Te is an n-type substance, but As is almost independent of either type in rectifying properties, etc.

Consequently, this invention includes providing the base side of the photoconductive layer with p-type properties and the insulating layer side with n-type properties.

Moreover, the dark resistance of the entire layer formed by lamination of a layer of low dark resistance containing a great amount of tellurium and a layer of a remarkably high dark resistance containing less tellurium has a much higher dark resistance than the layer of the same thickness in which the content of tellurium is evenly distributed.

This remarkable difference depends on the property of Se—Te alloys whereby the electric resistance is rapidly reduced corresponding to the tellurium content.

Therefore, the use of a Se—Te alloy as the photoconductive layer material as well as the laminating step are important factors.

The conventional method for forming the photoconductive layer of the above-mentioned photosensitive member is to evaporate alloys of different tellurium content, or selenium of single substance, from separate evaporation sources controllably by co-vapor-deposition, or, in special cases, to evaporate an Se—Te alloy from a single evaporation source by changing the temperature of the evaporation source. However, these methods are not too desirable because they include a very difficult task, i.e., temperature control.

The feature of this invention is to easily form a selenium-tellurium alloy deposited layer in which the tellurium content is increased in the direction of thickness toward the surface insulating layer side by using the following method, in which a single evaporation source is

employed without the difficulty of temperature control. That is, the photosensitive layer can be formed by using, not complete selenium-tellurium alloys having uniform composition, by an incomplete selenium-tellurium alloys having non-uniform composition, as the evaporation source, and vapor-depositing them onto the base, or by using a mixture of complete and incomplete selenium-tellurium single substance, as the evaporation source, and vapor-depositing them onto the base. Then, a photosensitive member is made by establishing an insulating layer on the surface of the resulting photosensitive layer.

The term "incomplete selenium-tellurium alloy" refers to an alloy in which selenium and tellurium are fused nonuniformly. It is different from a selenium-tellurium alloy in which selenium and tellurium are fused perfectly to form a uniform composition. Probably, since the alloy is not completely uniform, some portion of the alloy has different phases, that is, some portions of the alloy consist only of almost selenium alone with almost no tellurium. This kind of alloy can be obtained by incompletely melting selenium and tellurium and, when the alloy is evaporated, shows an evaporation characteristic in which the evaporation of tellurium is less at the initial stage of the evaporation than at the later stage. As a result, on the base side of the vapor-deposited layer, only selenium, or a selenium-tellurium alloy of very low tellurium content is vapor-deposited, and the tellurium content of the selenium-tellurium alloy being evaporated is increased progressively corresponding to the increase in the thickness of the evaporated layer.

Furthermore, the mixture of the complete or incomplete selenium-tellurium alloy, the single selenium substance, or the mixture of the single selenium substance and the single tellurium substance has the same evaporation characteristics, as mentioned above. In the case the when mixture is used as the evaporation source, it is possible to form a photosensitive layer far more uniform than in the case where the incomplete alloys are used.

On the other hand, in a system where the photoconductive member is composed of a mixture of Se, Te, and As or an alloy thereof, the covaporization method may be used in which Se, Te, and As are vaporized from different evaporation sources, and a method may be used in which the alloys of Se, Te, and As, having different compositions, are vaporized sequentially from different evaporation sources, or by supplying them to a single evaporation source, sequentially. However, a method, which is most easily controlled and consequently excellent in reproducibility, is one in which Se, Se—Te alloy, Se—As alloy, and the like are mixed and made to coexist in a single the evaporation source, and evaporation is conducted by taking advantage of the difference in vapor pressure of the individual substances.

According to this method, Se is evaporated at the initial period of evaporation, and vapor, rich in Te or Se, is generated during the last half of the evaporation period to obtain a desired photosensitive layer without any special control during evaporation.

The substances, which are made to coexist in the evaporation source, are not limited to the above-mentioned substances and may be selected from As—Te alloys, Se—Te—As alloys and combined single substances of individual elements.

However, the alloys used should be ones that can be regarded as forming solid solutions, in which the constituting elements are melted carefully in a homogeneous single phase. An incomplete alloy, obtained by incomplete melting, having constituent elements of single substance in different phases results in poor reproducibility.

A method is also effective in which a chalcogenide substance is shaped into an appropriate form, and the composition of the chalcogenide substance thus formed is made clear, and the chalcogenide substance is sequentially evaporated to control the constituent. It is preferable that the form of the shaped chalcogenide substance mentioned above is a bar form, or other oblong forms in order to vary its composition stepwise or continuously in the lengthwise direction. It is possible to use the chalcogenide substance thus shaped as a single article or as a plurality of shaped articles together.

However, in order to improve the form of the photosensitive member formed in this way, a special limitation must be given to the temperature condition of the base on which vapor-deposition is to be effected. The boundary temperature has been found to be about 63°C. A photosensitive layer obtained by vapor deposition at a base temperature of lower than 63°C has the disadvantages that, when charged by corona discharging, the photosensitive layer shows a relatively high residual potential, even after the charge is discharged and, fails to show high contrast. These disadvantages adversely affect the repeated use of the photosensitive layer.

On the other hand, when the evaporation is initiated at a base temperature above 63°C, the photosensitive member thus obtained does not show an residual potential at all or possibly a and negligible degree of residual potential.

A base temperature ranging from 65° to 75°C is desirable since the resulting photosensitive member does not show any residual potential at all.

FIG. 1 and FIG. 2 are given to show the comparison of charging states of a conventional photosensitive member with a photosensitive member according to this invention comprising a base, a photoconductive layer wherein an insulating layer and the photoconductive layer contains more Te at the insulating layer side than at the base side.

FIG. 2 shows the charging state for a conventional photosensitive member and FIG. 1 shows the charging state for a photoconductive layer according to this invention. In both drawings, 1 represents a base, 2 a photoconductive layer, 3 an insulating layer, and 4 a layer contacting with the base and facilitating the injection of an electric charge, and "a" refers to a state in which the electric charge is injected by primary charging and "b" refers to a binding state of electric charge after completion of the primary charging.

As shown in FIGS. 1a, in the photosensitive member according to this invention, the injecting state of the electric charge is quite excellent, whereas in the conventional photosensitive member shown in FIG. 2a, the injecting state is not good. After primary charging, the electric charge distribution is almost unchanged in FIG. 1b, whereas in FIG. 2b, the electric charge due to injection is slowly produced, even after completion of the primary charging, and the surface potential is drastically reduced. The reduction rate is shown graphically

in FIG. 3. The curve *a* shows the charge in surface potential of the photosensitive member according to this invention and the curve *b* shows the change in surface potential of a conventional photosensitive member, *t*₁ being the charge ending time.

In curve, *a*, the surface potential change is hardly noticeable, whereas the surface potential in curve *b* of the conventional photosensitive member shows a large decay.

In this photosensitive member, particularly when the photoconductive layer is Se—Te—As alloy, a good injection is hard to obtain when the Te content exceeds 6%. Therefore, it is desirable for the Te content of the portion contacting the base be less than 5%, preferably less than 3%.

As to the sensitivity and panchromatism, particularly good results are given when the Te content exceeds 10%. When the photoconductive member is composed of Se—Te alloy and when the Te content exceeds 10%, comparatively rapid degradation due to crystallization, is produced. This phenomenon is liquidated by adding less than 5% of As and, in addition the As serves not only to impede crystallization but also to improve both durability and panchromatism.

Therefore, as is clear from matters described above, the photosensitive member according to this invention has the characteristics of low dark decay and high surface potential. This enables the electrostatic image formed to have a high contrast and a high sensitivity.

Furthermore, a photosensitive member rich in durability and panchromatism can be offered. This invention will be described hereinafter in more detail by referring to the following examples.

EXAMPLE 1

A mixture of selenium 100: tellurium 7 by weight was enclosed in a pyrex glass container under vacuum, melted at 500°C for 1 hour followed by rapid cooling. 30 g of selenium-tellurium alloy of unhomogeneous composition, which was produced by the above procedure and was not yet completely fused, was vapor-deposited under vacuum onto an aluminum base plate.

The vapor-deposition conditions were as follows: the vacuum in the device was about 3×10^{-5} mm Hg, a shutter, which separates the vapor source and the aluminum base plate, was closed first, and then the above-mentioned selenium-tellurium alloy was placed in a quartz tray and heated to 180°C for about 10 minutes by the heat radiated from a tungsten wire placed slightly above the tray to expel gases. Next, the shutter was opened, and the temperature of the vapor source was increased to 250° and 350°C, and the vapor-deposition onto the aluminum base plate was effected for 14 minutes, while the aluminum plate was kept at 65°C.

The selenium-tellurium alloy photosensitive layer thus obtained was 40 μ thick, and the mixing ratio of selenium and tellurium varied continuously in the direction of thickness, and the portion up to 10 μ from the base plate side was a layer in which the weight ratio was selenium 100: tellurium 2, the portion between 10 μ and 30 μ was of selenium 100: tellurium 7, and the portion between 30 μ and 40 μ of selenium 100: tellurium 12. These ratios were the average values of measurements performed by chemically analyzing each evaporated layer obtained by interrupting the vapor-deposition appropriately with the shutter.

EXAMPLE 2

In Example 1, 30 g of a well-mixed mixture of selenium and tellurium powders at the ratio of 100: 7 by weight was used in place of the selenium-tellurium alloy, the temperature of vapor source was 220°C, a little higher than the melting point of the mixture, and vacuum evaporation was conducted in a similar manner for about 1 hour.

The selenium-tellurium alloy deposited photosensitive layer thus obtained has almost the same characteristics as the one obtained in Example 1.

EXAMPLE 3

A three layer photosensitive member was produced by establishing a light transmissive insulating layer of about 10 μ thick on the surface of each photosensitive layer obtained in Examples 1 and 2. Apart from these, a three layer photosensitive member was produced by forming a selenium-tellurium alloy layer of homogeneous composition, in which selenium and tellurium having a weight ratio of 100: 7 were completely fused, onto an aluminum base plate to a thickness of 40 μ and by establishing on its surface the same insulating layer as those established on the above mentioned two plates.

To these three photosensitive members was applied the electrophotographic process disclosed in U.S. Ser. No. 571,538 filed Aug. 10, 1966 and U.S. Ser. No. 563,899 filed July 8, 1966 to produce electrostatic latent images. In both of the former photosensitive members according to this invention, latent images having electrostatic contrast of higher than 1200V were obtained. However, in the case of the latter photosensitive member where the selenium-tellurium alloy deposited layer was of homogeneous composition, only an electrostatic contrast of 600V was obtained. This difference is due to the fact that the photosensitive member according to this invention has a remarkable rectifying property.

EXAMPLE 4

15 g of selenium-tellurium alloy of homogeneous composition containing 15% of tellurium, obtained by completely melting, and 15 g of selenium single substance were made to coexist in a single evaporation source and were vapor-deposited onto a base plate, the base plate side portion of the deposited layer was almost all selenium alone, and as departing from the base plate toward the surface portion, the tellurium content in the selenium-tellurium alloy layer increased gradually. To the photosensitive member, obtained by establishing an insulating layer on the surface of the photosensitive layer, was applied the electrophotographic process, disclosed in U.S. Ser. No. 571,538 and U.S. Ser. No. 563,899, to produce a latent image. The photosensitive member showed an excellent injection characteristic in a primary charging, and electrostatic image of high contrast was obtained.

This method produced a photosensitive layer of far less nonuniformity than that obtained using the selenium-tellurium alloy, as a result of incomplete fusing. According to the method of this invention, the vapor-deposition was effected with good reproducibility by the use of a selenium-tellurium alloy of completely homogeneous composition and a proper amount of pure selenium.

EXAMPLE 5

85 g, 10 g, and 6 g of Se, Te, and As of high purity, respectively were mixed and vacuum enclosed in a heat resistive glass, and were melted at 630°C for 10 hours. The melted body was given large and strong vibrations about every 30 minutes for agitation, and a homogeneous, almost perfect solid solution was obtained. 50 g of this Se-Te-As alloy and 20 g of selenium of high purity were placed together in a single vaporization source and, under conditions of vaporization source temperature of about 330°C, pressure of 2×10^{-5} mm Hg, and the base plate temperature of 60°C, the vapor-deposition was conducted for 30 minutes. A photosensitive layer about 60 μ thick was formed on the base plate and about 10 g of substance remained in the vaporization source.

A polyester film 25 μ thick was adhered to the surface of the photosensitive layer opposite to the base plate side by using a small amount of a binding agent, hardened at room temperature to produce the photosensitive member A.

To the photosensitive member a primary charge of -1,500V and then a secondary charge by DC of opposite polarity were applied resulting in a sensitivity of 3 lux-second, contrast of 700V, and the panchromatic property had spectral sensitivity to red, green, and blue colors.

On the other hand, the photosensitive member B, obtained by placing only the Se-Te-As alloy in the evaporation source as the above-mentioned example and by evaporating it as before, had a bad injection property and showed a contrast of only about 100V.

EXAMPLE 6

A photosensitive layer was formed in a manner similar to the photosensitive member A of example 5. What was different was that one-third of the base plate which was about 50 cm² in area was covered with a shutter after about 10 minutes from the initiation of vaporization. The covered portion was found to have a vapor-deposited film of about 20 μ thick. After another 10 minutes or so, another one-third portion of the base plate area was covered with the shutter. A film of about 40 μ thick was formed on this portion. Then, after another 10 minutes the further remaining one-third portion was covered with the shutter to finish the vapor deposition. The thickness of the film of the final portion was about 60 μ .

On the other hand, a photosensitive member was formed in a manner similar to the photosensitive member B, and the three step procedure was applied thereto as before.

The results shown in Table 1 were obtained by analyzing separately each portion, having different film thickness.

Table 1

	Photosensitive member A			Photosensitive member B		
	Se	Te	As	Se	Te	As
Up to 20 μ from the base plate	98	1	1	85	10	5
From 20 μ to 40 μ	92	5	3	85	10	5
From 40 μ to insulating layer	87	10	3	85	10	5

EXAMPLE 7

Several kinds of Se-Te alloys which differ from each other in Te content, were poured into an oblong aluminum container in 10 steps for Te contents of 0 to 15% in weight. The container was cooled rapidly to obtain a bar-like alloy. A 2 cm portion of each step was cut off and 2 cm portions were arranged in such an order that the one containing the least amount of Te was placed nearest to the vaporization source. One end of the bar was placed in a vaporization source composed of a quartz crucible and the other portion was supported on water cooled metal plate installed at about 60° with respect to the horizontal direction, and vapor-deposition was effected onto the plane plate by the usual method well known in the field of electrophotography.

As the one end of the bar evaporated, the other portion slid down by its own weight and no special driving operation was needed. After about one hour of vapor-deposition, the bar was partly vaporized, and a vapor-deposited film about 40 μ thick was obtained.

To the surface of the vapor-deposited layer thus obtained was adhered a transparent insulating film 25 μ thick by using a small amount of adhesive. An excellent photosensitive member was obtained which, when subjected to the electrophotographic process that increased the contrast by primary charging, secondary corona discharge contemporaneously with irradiation of radiant energy and, if desired, the whole surface irradiated by radiant energy, showed excellent injection property of the electric charge from the base plate and which was of high contrast, highly sensitive, of high resolution, and panchromatic.

COMPARISON EXAMPLE

20 g of Se-Te alloy containing 10% by weight of Te and 20 g of 99.999% Se were made to coexist in a single quartz evaporation source and evaporation was effected on a nickel-plated brass base plate for about 20 minutes under a vacuum of 10^{-5} mm Hg, a base temperature of about 60°C, the temperature of the evaporating source being about 300°C, to produce a photosensitive member.

The curve 1 in FIG. 4 represents the charge and discharge characteristics of this photosensitive member.

EXAMPLE 8

A photosensitive member was obtained in the same manner as the Comparison Example above, except that the base temperature was about 63°C.

The characteristics of this photosensitive member is shown by the curve 2 of FIG. 4.

From FIG. 4, it is obvious that the photosensitive member obtained by the methods employed in the examples of this invention has less residual potential as compared with the photosensitive member of the Comparison Example and, consequently, gives high contrast and is suitable for repeated use.

What is claimed is:

1. An electrophotographic photosensitive member consisting essentially of a base composed of an electrically-conductive material or an electrically insulating material wherein the surface which contacts a photoconductive layer is electrically conductive, a photoconductive layer on the base, and an electrically insulating layer on the photoconductive layer, wherein the

photoconductive layer consists of a single layer composed of Te and Se, or Te, Se and As evaporated onto the base at a temperature of at least 63°C., and wherein the Te content in the photoconductive layer is equal to or less than 6% by weight at the side of the photoconductive layer nearer the base and progressively increases in the direction of thickness toward the side of the photoconductive layer near the electrically insulating layer.

2. An electrophotographic photosensitive plate as set forth in claim 1, wherein the evaporated photoconductive layer is an incomplete alloy.

3. An electrophotographic photosensitive plate as set forth in claim 2 wherein the incomplete alloy consists of selenium and tellurium melted incompletely.

4. An electrophotographic photosensitive plate as set forth in claim 2, wherein the incomplete alloy is made by melting selenium and tellurium at 500°-630°C for less than one hour.

5. An electrophotographic photosensitive plate as set forth in claim 1, wherein the evaporated photoconductive layer is a mixture containing selenium and tellurium.

6. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is composed of Se-Te alloy and elemental Se.

7. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture consists of elemental Se and elemental Te.

8. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is composed of one of the elemental substances Se, Te, and As and the alloy of two of said elemental substances.

9. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is composed of one of the elemental substances Se, Te, and As and the alloy composed of three of said elemental substances.

10. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is composed of an alloy consisting of two of the elemental substances Se, Te, and As and an alloy consisting of three of said elemental substances.

11. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is composed of one of the elemental substances Se, Te, and As, an alloy composed of two of said elemental substances, and an alloy composed of three of said elemental substances.

12. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is composed of a mixture of the elemental substances Se, Te, and As.

13. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is a mixture of

alloys composed of two of the elemental substances Se, Te, and As.

14. An electrophotographic photosensitive plate as set forth in claim 5, wherein the mixture is composed of alloys consisting of three of the elemental substances Se, Te, and As.

15. An electrophotographic photosensitive plate as set forth in claim 1, wherein the material forming the evaporated photoconductive layer was formed as a bar-like member and evaporation was made sequentially from its one end.

16. An electrophotographic photosensitive plate as set forth in claim 15, wherein the bar-like member contained tellurium and a substance having a greater p-type characteristic as compared to tellurium, and wherein the tellurium content varied in the length direction.

17. An electrophotographic photosensitive plate as set forth in claim 15, wherein the bar-like member was made of a mixture containing Se and Te.

18. An electrophotographic photosensitive plate as set forth in claim 15, wherein the bar-like member was composed of a mixture containing Se, Te, and As.

19. The member according to claim 1 in which the photoconductive layer consists essentially of selenium-tellurium alloy.

20. The member according to claim 1 in which the photoconductive layer consists essentially of selenium-tellurium-arsenic.

21. The member according to claim 20 in which the content of tellurium at the base side is less than 6 percent by weight, the total content of tellurium exceeds 10% and the arsenic content is less than 5%.

22. In an electrophotographic photosensitive member consisting essentially of a base, a photoconductive layer directly on the base and an electrically insulating layer directly on the photoconductive layer, said electrically insulating layer being adapted to retain an electrostatic latent image formed thereon, and said base being composed of an electrically conductive material or an electrically insulating material wherein the surface which contacts the photoconductive layer is electrically conductive, the improvement wherein said photoconductive layer is a single layer consisting essentially of a photoconductive mixture composed of selenium and tellurium evaporated onto said base at a temperature of at least 63°C. and wherein the tellurium content thereof progressively increases, from a value of equal to or less than 6% by weight at the side of the photoconductive layer nearer the base, in the direction of thickness of said photoconductive layer toward the side of the photoconductive layer nearer the electrically insulating layer.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,904,408 Dated September 8, 1975

Inventor(s) HIROSHI HANADA, ET AL

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 3, line 4, "by" should read --but--

Column 3, line 38, "the when" should read --when the--

Column 4, line 2, "forming solid" should read --forming perfect solid--

Column 4, line 37, "a and" should read --a--

Column 4, line 58, "FIGS" should read --FIG--

Column 7, line 38, "tha" should read --that--

Signed and Sealed this

sixth Day of *January* 1976

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks