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ELECTROSENSITIVE RECORDING BLANK

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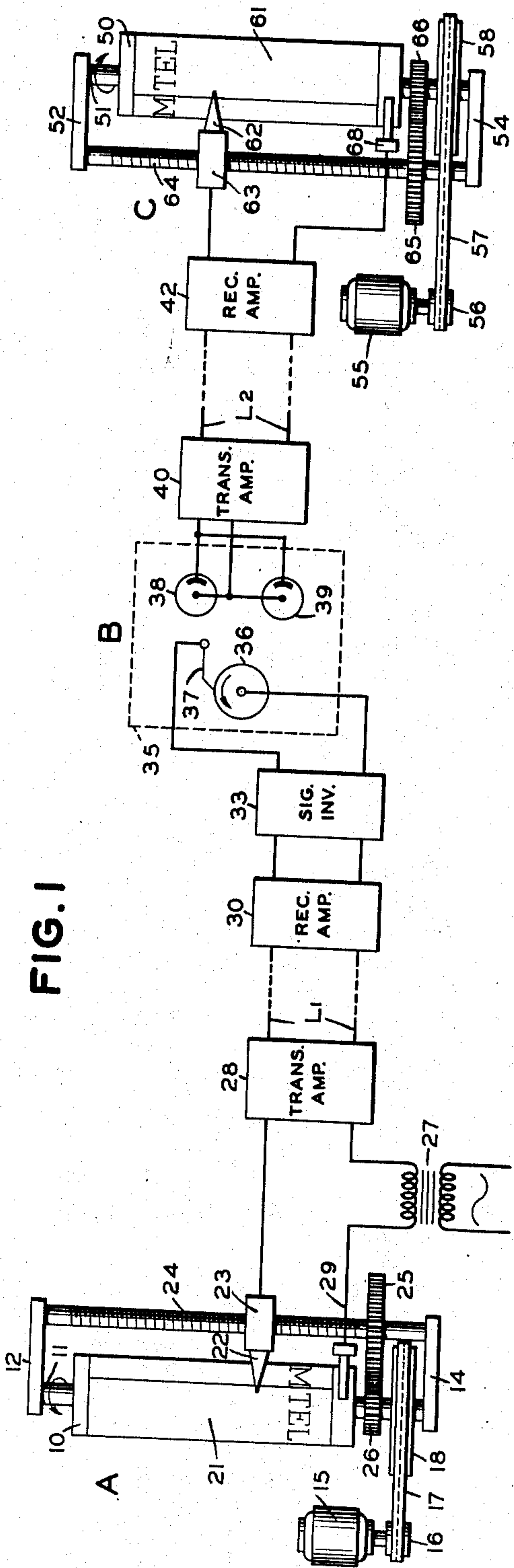


Fig. 1

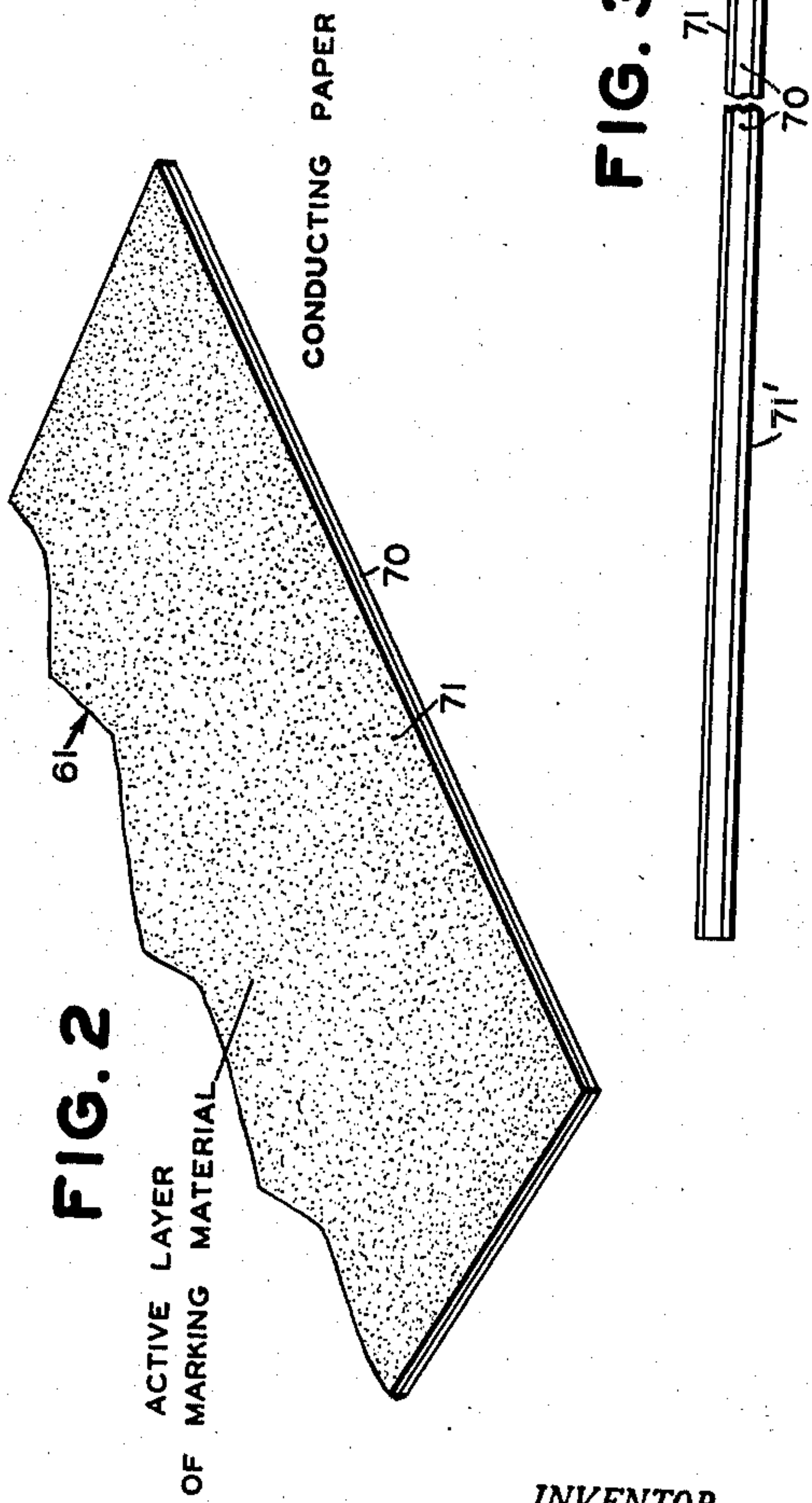


FIG. 2

Fig. 3

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ELECTROSENSITIVE RECORDING BLANK

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This invention relates to an electrosensitive recording blank and more particularly to an improved electrosensitive blank on which various kinds of subject matter may be recorded by means of telegraph facsimile or other types of electrical signals which are applied to selected elemental areas of the recording blank by means of an electrical stylus that scans the surface of the blank for applying the signals to selected areas thereof. This application relates to an improvement over the blank described in my co-pending Patent No. 2,528,005, issued October 31, 1950, the disclosure of which is incorporated herein by reference.

Facsimile communication systems are now extensively utilized by commercial telegraph companies and also by various firms and business houses for the transmission and reproduction in facsimile of telegrams, pictures, maps, drawings and other message subject matter. In such systems the transmitting blank is scanned either by optical or electrical pickup means, depending upon the character of the transmitting blank, for generating the facsimile signals in known manner. Reception of the messages commonly is effected on dry electrosensitive recording blanks. Such a blank comprises a base sheet of paper which is impregnated with a conductive substance, preferably carbon blank, so that the sheet is sufficiently conductive to pass readily the marking currents applied by the receiving stylus to the recording blank. An electrosensitive marking coating is applied to the underlying conductive sheet, which coating is changed to a dark colored sulphide in those elemental areas to which the marking currents are applied as the blank is scanned by the recording stylus during reception of a facsimile message.

In accordance with the invention of my co-pending Patent 2,528,005, a recording blank having an electrosensitive marking coating comprising cuprous thiocyanate was found to possess substantial advantages over prior recording blanks, including the lead-thiosulphate coated blank which had become a standard blank for use in facsimile systems for a variety of purposes. The cuprous-thiocyanate marking coating provides a good white background and with a lighter-weight coating than that heretofore possible; the blank records with much less smoke and greatly reduced spark at the point of stylus contact, and is substantially non-toxic in operation; the blank is not subject to smoldering; recording may be effected with lower voltages than those required for recording on lead thiosulphate

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and similar blanks; no smoky fringes about the recorded characters are noticeable and this enables facsimile relay operations to be performed without cumulative effects which would produce a smudged appearance of the message, so that the message as recorded in the final station is clean-cut in appearance and acceptable for direct delivery to the customer or addressee; and the marking coating is sufficiently white and opaque so that it can successfully be tinted to any desired color even when the coating is applied to a black carbon-bearing conductive paper base.

During recording operations there is a tendency for decomposition products to accumulate on the point of the electrical recording stylus, which accumulation is highly objectionable. It is an object of the present invention to provide an improved cuprous-thiocyanate recording blank in which the marking coating embodies means for substantially preventing the accumulation of decomposition products on the recording stylus.

Other objects and advantages will appear from the following detailed description of a preferred embodiment of the invention, taken in connection with the accompanying drawings, in which—

Fig. 1 illustrates diagrammatically a facsimile system embodying transmitting and receiving stations with an intermediate repeating station, the system being of the type in which a recording blank in accordance with the present invention is adapted to be used;

Fig. 2 is a perspective view of one form of recording blank embodying the invention; and

Fig. 3 is a view, in elevation, of a modified arrangement of the recording blank.

Referring now to Fig. 1 of the drawings, there is shown a facsimile transmitting station A, a facsimile receiving station C, and an intermediate facsimile relay station B. The transmitter at station A may comprise either optical or electrical pickup devices, both of which are well known in the facsimile art; for simplicity an electrical pickup device is illustrated. The transmitter comprises a rotatable metallic cylinder or drum 10 carried by a centrally disposed driving shaft 11 which is journaled in frame members 12 and 14. During transmission of signals the cylinder is rotated, in the direction indicated by the arrow, by any suitable means such as an electric motor 15, preferably of the alternating current synchronous type, which is connected in the illustrative form shown by a driving pulley 16 and a belt 17 to a driven pulley 18 keyed to the shaft 11. To prevent slippage, the pulleys have pins thereon which are received in slots in the

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belts, as indicated. Transmission may be effected in any suitable manner, for example, as described in Kline Patent No. 2,229,091, issued January 21, 1941, in which the transmitting blank has conductive characters on a non-conductive background, or as described in Kline Patent No. 2,572,871, issued October 30, 1951, in which the transmitting blank has non-conductive characters on a conductive background. In such arrangements a scanning electrode or stylus 22, whose point bears on the surface of blank 21 bearing the characters comprising the message, is supported by a traveling carriage 23 adapted for longitudinal movement longitudinally along a rotatable shaft 24 screw-threaded throughout the greater part of its length, the shaft being rotated by driving gears 25 and 26 keyed to the shafts 11 and 24, respectively, whenever the cylinder 10 is rotated. Thus, the stylus 22 is caused to traverse the cylinder in a longitudinal direction as the cylinder rotates, the pitch of the thread of the shaft 24 determining the extent of longitudinal traversal of the stylus during each rotation of the cylinder and hence the number of scanning lines per inch. In this manner the stylus point will describe a helical path as it moves over the surface of the telegraph blank 21 and thus produces a scanning action. The transmitting blank is wrapped once around the metallic cylinder 10 in the manner shown in the figure and is releasably secured to the cylinder in any desired manner, as by elastic retaining bands such as shown in Wise et al. Patent 2,255,868, issued September 16, 1941.

After the blank has been scanned, it is taken off the cylinder and another blank placed thereon for sending another telegram, means being provided whereby the traveling carriage 23 may be manually returned to its starting position. The foregoing method of obtaining a scanning movement per se is well known, as are various methods of electrically or optically scanning a given field for producing signals in facsimile transmission systems, and it is to be understood that any of the known methods of producing signals by means of optical or electric scanning devices suitable for the purpose may be employed. The transmitting apparatus includes a transmitting amplifier 23 which is interconnected by a communication circuit L1 to the receiving amplifier 30 of the intermediate relay station B. If desired, the transmitted signals may have a carrier frequency component introduced by the transformer 27 which is connected in a series lead 29 from the transmitting drum 10.

At station B, if the signals incoming over line L1 were generated at station A from a transmitting blank having insulating characters on a conductive background the signals may be inverted by means of a signal inverter 33 so that the message recorded on the receiving blank at station B will be a positive copy of the message on the transmitting blank 21. Various of the known types of vacuum tube signal inverters may be employed. The facsimile repeating equipment at station B, diagrammatically shown within the dotted rectangle 35, may comprise send-receive apparatus such as disclosed in Wise et al. Patent No. 2,315,361, issued March 30, 1943. A metallic cylinder 36, which carries an electro-sensitive recording blank like the blank 61 at station C and made in accordance with the instant invention, is scanned by an electrical recording stylus 37 when signals are being received from station A. When synchronism of the rotating

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parts at stations A and B is properly maintained in any of the various ways known in the art, the message or image upon the original transmitting blank 21 will be reproduced in facsimile upon the receiving blank on the drum 36. Upon completion of the reception of the message, the recording stylus 37 is turned out of engagement with the recording blank and the latter is then scanned by optical pickup apparatus to relay the message to station C. The retransmitting equipment includes photocells 38 and 39 which provide an optical pickup in the retransmitting side, two photocells being used in order to effect picture reversal and to transmit a positive copy of the message in the manner disclosed in Wise Patent No. 2,176,442, issued October 17, 1939.

The signals generated by the optical pickup means pass through a transmitting amplifier 40 and thence over line L2 to the receiving amplifier 42 at station C. The amplified signals are applied to a recording stylus 62. The scanning mechanism of the recorder at station C is similar to that of the transmitter at station A, and comprises a rotatable metallic cylinder or drum 50 carried by a centrally disposed driving shaft 51 journaled in frame members 52 and 54. During reception of signals the cylinder is rotated, in the direction indicated by the curved arrow, by a synchronous motor 55, driving pulley 56, belt 57, and driven pulley 58 keyed to the shaft 51. The recording stylus 62, whose point bears on the surface of the recording blank 61, is carried by a traveling carriage 63 which moves along a threaded shaft 64 rotated by gears 65 and 66 to effect scanning of the blank as the incoming signals are received. Thus, the recorded blank 61 is a positive facsimile copy of the message on the original transmitting blank 21, which copy is suitable for direct delivery to the customer or addressee.

A recording blank 61 embodying the invention is shown in its simplest form in Fig. 2 of the drawings in which reference numeral 70 represents a sheet of fibrous material, which may be ordinary paper although highly calendered paper is preferred since it results in a smoother surface over which the recording stylus can travel without contact bounce or variation in contact resistance. Applied to the surface of the paper is an adhesive coating or film 71 which comprises cuprous thiocyanate whereby, upon application of an electrical signaling potential to selected elemental areas of the recording surface of the blank, there is formed a black copper sulphide of contrasting appearance with respect to the adjoining areas or background of the blank. The sheet 70 may be made conductive either by impregnation with an electrolyte or by having a finely divided metal powder or finely divided carbon such as carbon black uniformly distributed throughout the pulp from which the paper sheet is rolled, so that signal marking current in the stylus circuit can flow through the sheet to the underlying metal platen, such as the cylinder 50 shown in Fig. 1, on which the sheet is placed during a recording operation. Various examples of such electrolytes and conducting powders are disclosed in Kline Patent No. 2,425,742, issued August 19, 1947. Preferably, finely divided carbon is employed to make the sheet 70 conductive. The thickness of the paper will depend upon the kind of stock used, for example, the thickness may vary from .0015 inch for tissue to .003 inch for ticker stock which comprises ordinary manila paper. The degree

of conductivity of the sheet 70 is not critical, but must be sufficiently high to cause the recording stylus current readily to pass through the sheet. For example, a suitable degree of conductivity of a carbon impregnated sheet is such that if a metal plate is positioned under the sheet and an electrode whose area of contact surface is .5 sq. cm. is pressed on the upper surface of the sheet with a pressure of approximately 500 grams, the electrical resistance of the paper is approximately from 42 to 58 ohms. The resistance of papers impregnated with electrolytes will be found to be higher and may be as high as several times that of the carbon impregnated paper. It will be appreciated by those versed in the facsimile art that the necessary conductivity of the sheet 70 may vary within considerable limits and yet produce suitable marking effects, depending upon various factors such as the voltage of the recording stylus current, the thickness of the paper 70, the speed at which the recorder is to operate, and the frequency of the marking current in the stylus circuit when alternating current is employed.

There are two copper thiocyanates, the cupric and the cuprous; the cupric is black in color while the cuprous has a very clear bluish-white color. One method of making cuprous thiocyanate suitable for use in the blank of the instant invention is to take the commercially available cupric sulphate or blue vitriol and in solution reduce it to the cuprous form with a suitable reducing agent, such as sulphur dioxide. The cuprous thiocyanate is formed in this solution by the addition of a soluble thiocyanate such as the thiocyanate of sodium, potassium or ammonium. Care should be taken to completely reduce the copper solution to avoid the danger of production of even a very small amount of the cupric form which would decrease the whiteness of the finished product. The filtered and washed material is dried and dispersed in a coating medium such as a lacquer for application to the conductive base sheet. Commercially it is not the practice to wash the copper thiocyanate with sufficient care to remove all water soluble by-products of the reaction including all traces of acid. Unless this care is taken, the salts or acids will cause deterioration of the coating lacquer and an increase in viscosity or even a gel to make it unusable for commercial coating. This extreme care in washing need not be taken if a blank is made by incorporating the copper thiocyanate in the upper surface portion of the black paper web during the process of manufacture so that it becomes an integral part of the sheet.

I have found that the opacity of the cuprous thiocyanate may be increased substantially and other desirable effects obtained if certain steps are followed in the preparation of the coating material. The essential steps of the method comprise (1) reducing cupric sulphate to the cuprous form by employing a substantial excess of the reducing agent, preferably sodium sulphite, above the amount required to effect and maintain complete reduction of the cupric sulphate, (2) precipitating the copper with a soluble thiocyanate, such as NaSCN or NH₄SCN, under controlled concentration conditions, (3) washing the precipitate until the by-product impurity content (ammonium sulphate or sodium sulphate) is reduced to approximately 1% or less, (4) adjusting the pH of the final rinse of the washing step to a value of approximately 9 to 10, and (5) dry-

ing the precipitate to a moisture content of approximately 1% or less. The resulting increased opacity of the cuprous thiocyanate thus formed has been proved in practice, but the precise phenomena involved are difficult to establish, although it appears that the above method causes the formation of small amounts of certain complex salts of CuSCN with Na₂SO₄, and particularly (NH₄)₂SO₄, along with the batch precipitate, and that this increases the opacity of the coating by effecting or controlling the agglomeration of particles. When NaSCN is employed to precipitate the copper, the concentration of the solution must be sufficiently high to produce or maintain a desired amount of the complex formed, although when using NH₄SCN to precipitate the copper, the ammonium complex appears to be formed even in dilute solutions. The complex apparently is formed during the second step of the method, although the first, third and fourth steps are essential to the formation, preservation and behavior of the complex. If the above-mentioned substantial excess of the reducing agent is not present the desired increase in opacity is not obtained, so that it is a most important consideration; likewise, if the by-product impurity content is not properly reduced and if the pH of the final rinse is not adjusted to the value given the desired results are not obtained. The fifth step, namely, drying the precipitate, obviously does not contribute to the increase in opacity.

A suitable formula and procedure are as follows, the relative proportions of the compounds and water being given in amounts which will produce approximately 1 lb. of cuprous thiocyanate:

937 g. CuSO ₄ ·5H ₂ O	-----	in 1 gal. water
285-300 g. Na ₂ SO ₃ anhyd.	-----	in ¾ gal. water
130 c. c. H ₂ SO ₄ conc. (acidifying agent)	-----	in ¼ gal. water
313 g. NaSCN or 293 g. NH ₄ SCN	-----	in ½ gal. water

The lower value of 285 grams of sodium sulphite in the above formula is sufficient when making small batches of the cuprous thiocyanate, but preferably is increased about five percent or to 300 grams when making large batches so that with the extra agitation and time required there will remain a substantial excess of the SO₂ above the amount required to maintain the copper sulphate in the cuprous form throughout the entire reaction. The acidifying agent preferably is sulphuric acid. Also, the use of ammonium thiocyanate, instead of sodium thiocyanate, in the formula will be found preferable; the quantity of the NH₄SCN is 293 grams because of its lower molecular weight, assuming the same approximate purity of the two compounds. An adjustment of the relative quantities of the ingredients should, of course, be made to compensate for any variations in purity thereby to avoid needless waste, although slight excesses are not harmful to the resulting product. The foregoing values are based on 98% to 100% commercial purity.

The copper solution is filtered to remove scum, and the sodium sulphite solution added slowly with stirring or other agitation, followed promptly with the sulphuric acid which is added slowly with stirring or other agitation. Without any appreciable delay which would permit loss of SO₂, the NaSCN or NH₄SCN is added slowly and

with stirring or other agitation. A black precipitate may form first, but promptly turns white. If too much SO_2 were lost there would be decomposition of the thiocyanate and liberation of CN which must be avoided.

The precipitate is now allowed to settle, and the clear liquor is decanted to approximately 50% of the original volume. The tank is now refilled to the original volume with water and this decantation procedure repeated several more times, usually four. With the solution now at its original volume dilute NH_4OH is added until the pH is between 9 and 10 as measured by indicator test paper or electrometric means.

The precipitate is now filtered without any further washing or rinsing. Preferably, the cake shall have close to 50% water content. This cake is now broken up into lumps one inch in diameter or less and dried in trays to a moisture content of less than one percent.

When the recording paper is used with recorders in which paper sheet is wrapped around a rotatable drum, the slight bounce of the stylus over the paper lap frees the stylus from any accumulation of decomposition products on the point thereof. On the other hand, where one or more styli are used with a continuous traveling sheet or web of recording paper there is no such stylus bounce and the accumulation may become objectionable. This may be prevented by embodying certain materials in the pigment composition to prevent stylus accumulations. In general, certain hydroxides, sulphides, carbonates and basic carbonates are suitable for the purpose; for example, aluminum hydroxide, zinc sulphide, calcium carbonate, copper carbonate, strontium carbonate, barium carbonate, and basic zinc carbonate are particularly adaptable due to their chemical and mechanical properties when used as pigments. These materials may be used, when mixed with the cuprous thiocyanate, either singly or in combination.

A chemical reaction apparently takes place which, however, does not affect the desired decomposition of the cuprous thiocyanate for marking purposes. Also, with certain of the foregoing materials a mechanical effect is produced which assists in preventing stylus accumulation. Copper carbonate and basic zinc carbonate, for instance, on decomposition will yield both water vapor and carbon dioxide which may have, besides a useful chemical effect altering the decomposition products, a useful mechanical effect because of the volume of gaseous components liberated. Aluminum hydroxide likewise yields water vapor and has been found quite effective. After the initial decomposition, oxide is left which may react with and trap any sulphur released and so help prevent tarnish of adjacent unrecorded areas. A substance such as zinc sulphide probably has little chemical reactivity except that its relative ease of volatilization may cause zinc fumes to surround the stylus tip and, aided by the copper-containing smoke, lower the temperature of combustion of the carbonaceous stylus deposits so that the tiny spark will cause the stylus to burn clean. Calcium carbonate or copper carbonate is preferred due to their good mechanical properties in lacquer dispersion, and an illustrative formula of a pigment composition employing either of them is as follows, the percentages being by weight:

50% cuprous thiocyanate
35% calcium carbonate or copper carbonate
15% zinc sulphide.

Another illustrative formula in which but one of the foregoing compounds is added to the cuprous thiocyanate is as follows:

5 55% cuprous thiocyanate
45% copper carbonate

The foregoing percentages may be varied considerably except that, of course, the cuprous thiocyanate must predominate to attain the beneficial results of the instant invention. When the amount of cuprous thiocyanate is approximately 40% to 75%, the other ingredients are replaceable in whole or in part by any of the other equivalent materials mentioned, and small amounts of other pigments such as titanium dioxide may be incorporated, if desired, without substantially altering the desired characteristics of the pigment composition.

Extensive tests made with cuprous-thiocyanate coated paper have shown that such blanks do not support smoldering; in fact, if they are lighted by an open flame so that smoldering is started, the smoldering ceases as soon as the flame is removed or extinguished, and this even though the blanks are subjected to drafts of air at the time they are lighted. Thus, even under adverse conditions, if smoldering should be started it immediately ceases due apparently to the chemical behavior of the cuprous thiocyanate upon decomposition thereof.

Due to the lower signaling voltage which may be employed with cuprous thiocyanate, there is also less likelihood of any charring of the coating around the characters, and this facilitates the production of clean-cut characters. With a blank in accordance with the instant invention, it is possible to record a continuous signal and produce a sharper line than has heretofore been possible. A coating of cuprous thiocyanate is sufficiently opaque that it may be tinted to any desired color and yet cover the black underlying carbon coating, and it is unnecessary to add whitening agents to the coating to increase its opacity and produce a white background where desired.

Fig. 3 is a view of a recording blank embodying a conductive paper sheet 70 having coatings 71 and 71' of cuprous thiocyanate on opposite sides thereof, whereby the blank is adapted to record on both sides at different times, respectively, and hence each blank may be used for two different messages, thus materially reducing the cost of using such recording blanks. In the use of such a blank, recording usually is effected by means of alternating current of suitable frequency, for example, 2500 cycles, and in this case the conductive paper 70 and the under coating 71' which is resting on the metallic cylinder 36 or 50 of Fig. 1, together with the cylinder, act as electrical condenser elements. When the sheet on the recording cylinder is scanned, the stylus 37 or 62 will mark the upper coating 71, but the lower coating 71' will remain undisturbed since it is in intimate contact over a large peripheral area of the cylinder 36 or 50, thus reducing the current density below that required to cause marking of the surface 71'. Even though the coating 71' has a very high electrical resistance, displacement currents are passed therethrough at the frequencies ordinarily employed for alternating current recording, due to the condenser effect produced by the conductive sheet 70 and the cylinder 36 or 50 spaced therefrom only by the thickness of the coating 71'. After a message, 75 picture or other record has been produced on

the surface 71, a record may be made on the opposite side 71' merely by reversing the sheet and placing the previously recorded side 71 in contact with the recording cylinder 36 or 50.

Inasmuch as the material in the coating 71 to be reduced or converted represents the load of the electrical marking current, the resistance of the recording material should be concentrated in that region. In order to provide a permanent record, the cuprous thiocyanate may be suspended in a vehicle or binder of cellulose derivative lacquers, hydrocarbon resins, shellac dissolved in alcohol, or other suitable binder, the marking compound being uniformly distributed in finely divided form throughout the binder. Since the electrical breakdown strength of the entire coating is to be maintained at a uniform value, with the variations in reduction or conversion of the marking material being controlled by the intensity of the signaling currents or potentials, the thickness of the coating should be maintained at a substantially constant value throughout the useful area of the record. The coating is applied as a very thin film, the surface layer preferably being of the order of .00008 to .00015 of an inch.

As above stated, the white cuprous thiocyanate is reduced or converted by the application thereto or passage therethrough of the signaling potentials or currents to a black copper sulphide, this change in color at the points to which the signaling energy is applied providing a sharp contrast with the unchanged portions of the coating which have not been affected by the signaling potentials or currents. The thickness of the coating should be just sufficient to mask the underlying conductive base material for supplying a good background for the recorded subject matter. The marking potential applied to the coating by the stylus may be just below the marking value so that superimposed signal potentials will provide the differential necessary for effective operation. Recording may be effected either with direct or alternating currents including frequencies ranging into the carrier spectrum. Due to the opacity and whiteness of the coating it may readily be tinted to produce any desired color of background. For example, the copper thiocyanate may be tinted with from 1½% to 3%, by weight, of a suitable dye to produce any of a large number of different shades or colors.

In the illustrated embodiment of the invention the entire body of the paper base 70 is made conductive, but if desired only its surface need be conductive. This may be obtained by coating the sheet 70 with a suitable conducting substance, such as finely divided carbon, incorporated in a suitable binder, for example, synthetic resins commonly used in lacquers, such as cellulose nitrate, or water soluble materials such as casein, starch and polyvinyl alcohols. Also, a layer of metal foil may be used in lieu of the carbon layer. In such case the electrode 68 shown in Fig. 1 is placed in contact with the marginal edge of the conductive surface of the recording blank instead of being in contact with the metallic drum 50, thereby to complete the recording stylus circuit.

What is claimed is:

1. An electrosensitive recording blank comprising an electrically conductive support, said conductive support having in intimate contact therewith, over the recording surface of the blank, a coating of a recording medium comprising

cuprous thiocyanate in an amount sufficient to produce a color change in selectable elemental areas of said recording surface when electrical signaling potentials are applied by a scanning stylus to said selectable areas to produce a record by the signaling potentials applied thereto, said coating comprising approximately 40% to 75% of cuprous thiocyanate, by weight, with the remainder of said coating principally composed of a substance operative to prevent substantial accumulation of decomposition products on said stylus, said substance comprising at least one compound of the class consisting of aluminum hydroxide, calcium carbonate, copper carbonate, strontium carbonate, barium carbonate and basic zinc carbonate.

2. An electrosensitive recording blank comprising an electrically conductive support, said conductive support having in intimate contact therewith, over the recording surface of the blank, a coating of a recording medium comprising cuprous thiocyanate in an amount sufficient to produce a color change in selectable elemental areas of said recording surface when electrical signaling potentials are applied by a scanning stylus to said selectable areas to produce a record by the signaling potentials applied thereto, said coating comprising approximately 50% of cuprous thiocyanate, approximately 35% of a compound of the class consisting of calcium carbonate, copper carbonate, strontium carbonate, barium carbonate and basic zinc carbonate, and approximately 15% of zinc sulphide, the said percentages being by weight.

3. An electrosensitive recording blank comprising an electrically conductive support, said conductive support having in intimate contact therewith, over the recording surface of the blank, a coating of a recording medium comprising cuprous thiocyanate in an amount sufficient to produce a color change in selectable elemental areas of said recording surface when electrical signaling potentials are applied by a scanning stylus to said selectable areas to produce a record by the signaling potentials applied thereto, said coating comprising approximately 50% of cuprous thiocyanate, approximately 35% of copper carbonate and approximately 15% of zinc sulphide, the said percentages being by weight.

4. An electrosensitive recording blank comprising an electrically conductive support, said conductive support having in intimate contact therewith, over the recording surface of the blank, a coating of a recording medium comprising cuprous thiocyanate in an amount sufficient to produce a color change in selectable elemental areas of said recording surface when electrical signaling potentials are applied by a scanning stylus to said selectable areas to produce a record by the signaling potentials applied thereto, said coating comprising approximately 55% of cuprous thiocyanate and approximately 45% of copper carbonate, said percentages being by weight.

5. An electrosensitive recording blank comprising an electrically conductive support, said conductive support having in intimate contact therewith, over the recording surface of the blank, a coating of a recording medium comprising cuprous thiocyanate in an amount sufficient to produce a color change in selectable elemental areas of said recording surface when electrical signaling potentials are applied by a scanning stylus to said selectable areas to produce a record by the signaling potentials applied thereto, said coating comprising approximately 40% to 75%

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of cuprous thiocyanate, by weight, with the remainder of said coating principally composed of a substance operative to prevent substantial accumulation of decomposition products on said stylus, said substance comprising at least one compound of the class consisting of aluminum hydroxide, calcium carbonate, copper carbonate, strontium carbonate, barium carbonate and basic zinc carbonate, and a lesser amount of titanium dioxide to increase the opacity and brightness of said coating.

6. An electrosensitive recording blank comprising an electrically conductive support, said conductive support having in intimate contact therewith, over the recording surface of the blank, a coating of a recording medium comprising cuprous thiocyanate in an amount sufficient to produce a color change in selectable elemental areas of said recording surface when electrical signaling potentials are applied by a scanning stylus to said selectable areas to produce a record by the signaling potentials applied thereto, said

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coating comprising approximately 50% of cuprous thiocyanate, the remainder of said coating essentially comprising copper carbonate, and titanium dioxide in an amount substantially less than that of the copper carbonate.

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