

Sept. 5, 1961

J. S. DIGATE
IMPRINTING DEVICE

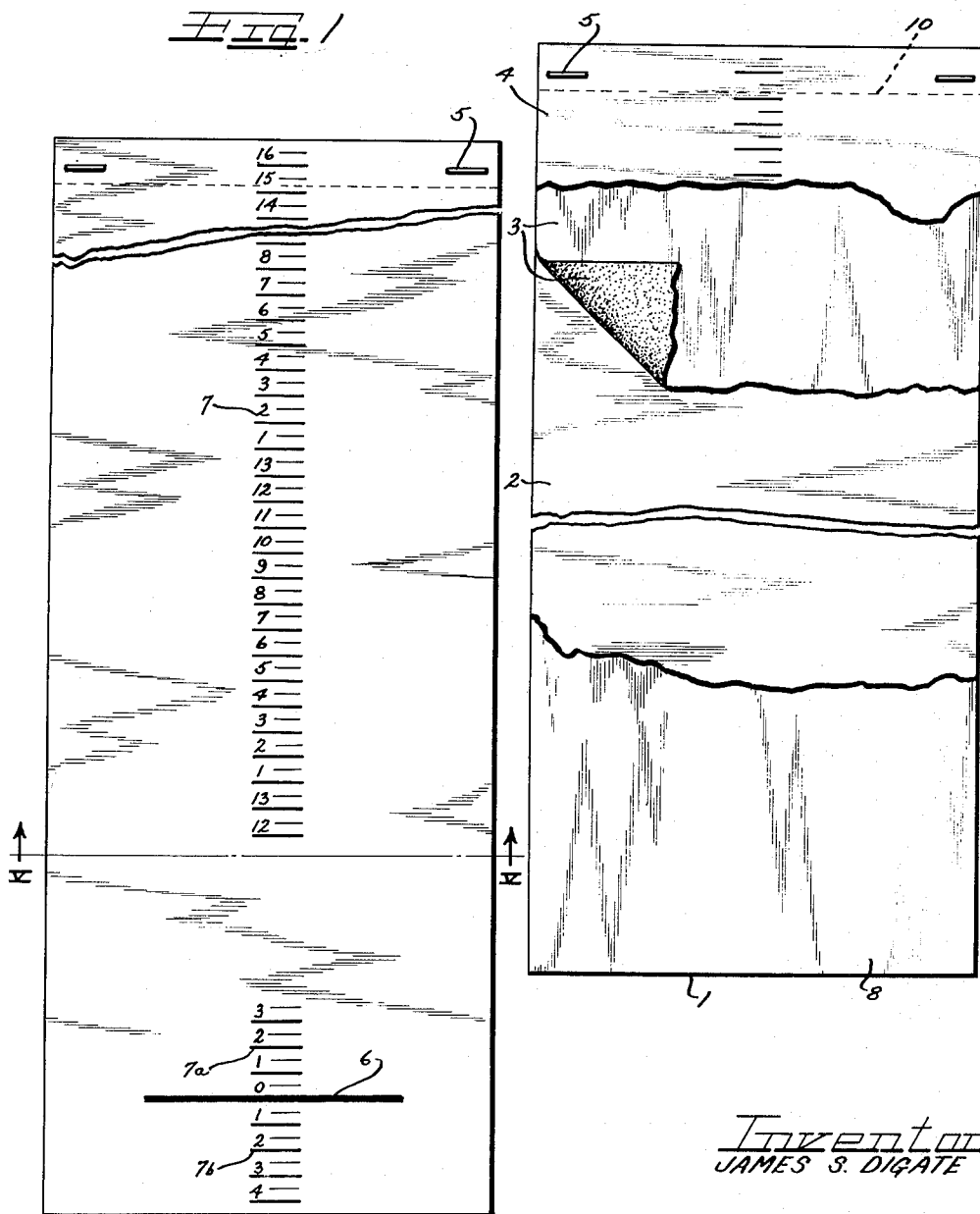
2,998,983

Filed Oct. 8, 1957

3 Sheets-Sheet 1

Fig. 2

Fig. 1



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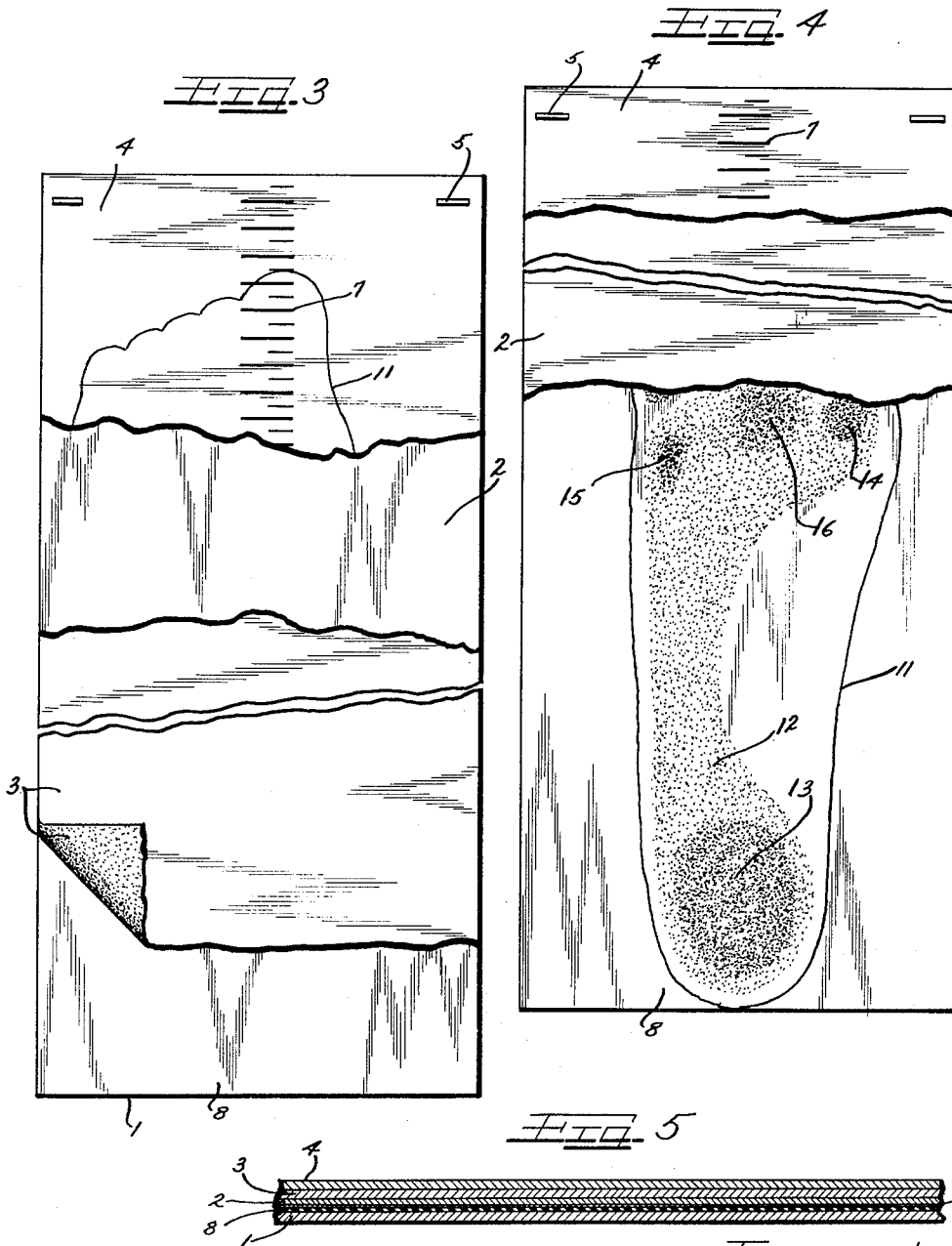
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

FIG. 6

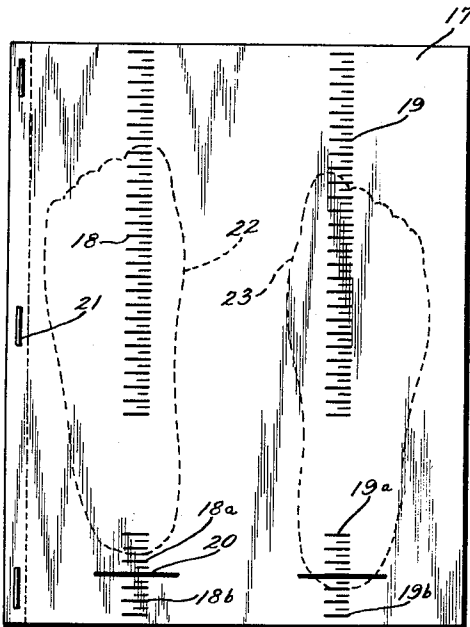


FIG. 7

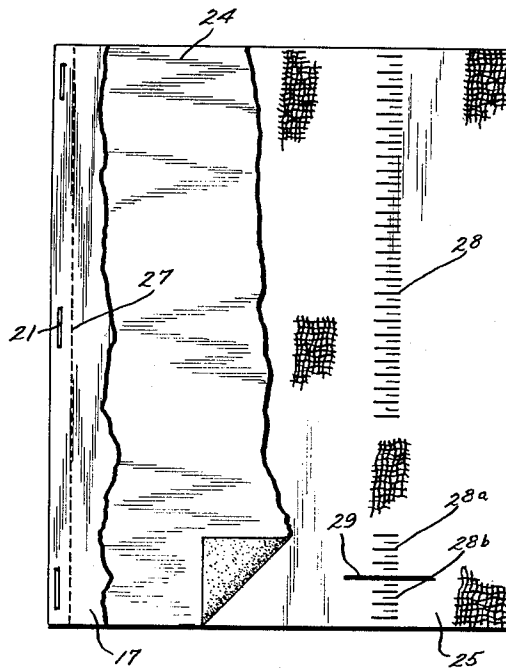


FIG. 8

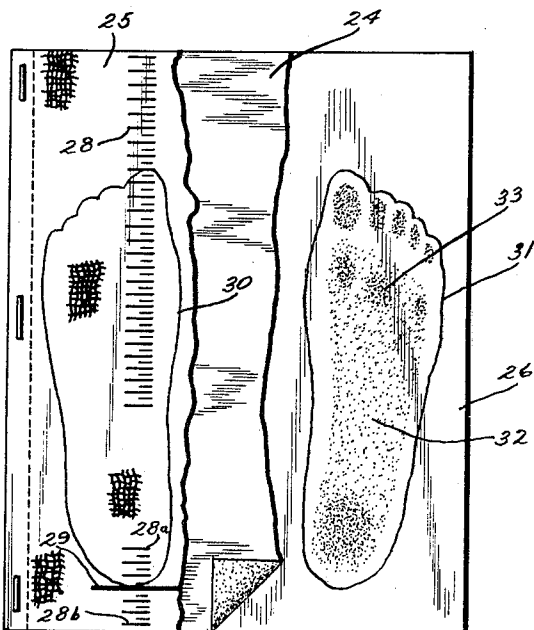
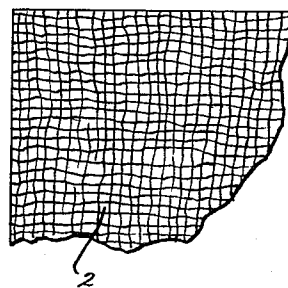


FIG. 9



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2,998,983

IMPRINTING DEVICE

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8 Claims. (Cl. 282-1)

This invention relates to improvements in an imprinting device, and more particularly to a device highly desirable for use in taking an imprint of the plantar surface of the human foot, although it will be readily understood that the device may equally as well be utilized for taking a hand print or the like, or perhaps prints of other portions of the body, and the device may have other uses and purposes as will be apparent to one skilled in the art.

More specifically, the instant invention is designed to provide a means for taking an accurate imprint of the human foot, or hand, to aid a doctor, chiropodist, or other specialist in properly providing adequate remedies, appliances, or properly fitting articles of footwear, etc., particularly if the imprint discloses the need of a remedy. Of course, while the device may find its primary use in taking imprints of the human foot, it could be used for taking the imprint of a human hand or an imprint of the foot of an animal, and to that extent where the term foot is used herein, it is to be considered synonymous with hand or other extremity.

In the past, many and various types of imprint-taking devices have been developed, but in most cases these devices were of the apparatus type embodying some form of mechanism to be used with an imprint-receiving card or the like. Many of these mechanisms could not readily be transported from place to place, and even though they were transportable, they were bulky enough to be inconvenient and not as quickly usable as is desired. Further, some extraneous means had to be utilized to protect the imprint taken on the card in the event it was desired to file that imprint away for future reference. The danger of damaging the imprint was augmented in the event data regarding the imprint and the patient had to be entered upon the card bearing the imprint after the taking of the imprint. Obviously, devices of this character embodying some form of mechanism would be objectionably expensive in comparison with the simple form of the instant invention.

With the foregoing in mind, it is an important object of the instant invention to provide an imprint assembly comprising merely several superposed flexible sheets and nothing else is needed in order to take an accurate imprint.

Another feature of the instant invention is the provision of an imprint assembly comprising several superposed sheets fastened together along a margin thereof, which sheets may themselves be used to provide the imprint, and then the sheets may be filed away without further protection for an indefinite period.

Still another feature of the invention is the provision of an imprint assembly comprising several superposed sheets, one of which is treated in a manner to insure a positive clear, and true imprint by virtue of pressure being urged upon a transfer sheet.

Another feature of the instant invention is the provision of an imprint assembly comprising a base sheet having a slightly tacky surface that will readily receive an imprint from a transfer sheet such as pressure carbon paper, the assembly also including a facing sheet to protect the imprint after it is once made.

Also an object of the instant invention is the simple form of imprint-taking assembly, comprising several

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sheets in superposed relationship, one of which is an imprint-receiving sheet, another an imprint protective sheet, and a cover sheet carrying suitable directive and other indicia thereon, the whole assembly being readily filable as is, and easily carried in the pocket of the operator in the event the imprint is taken at a remote location from the operator's office.

Still another object of the invention is the provision of a foot imprint assembly which is extremely economical in character and not only perfects the imprint, but also protects it after being made, the entire assembly being the particular file and record regarding a particular patient.

Also an object of the invention is the provision of an imprint assembly comprising a plurality of paper-like sheets, one of which is of a character to receive an imprint from a pressure sensitive carbon paper, and the entire assembly being of sufficient width to receive the imprint of both feet or of both hands on the one receiving sheet.

It is also an object of this invention to provide a foot imprinting device provided with size indicia of such character that it is not necessary to place the foot in a specific and precise location for acquiring the size thereof, but the indicia is such that the accurate size may be obtained regardless of the association of the foot with a base line throughout a relatively wide range.

Still another object of the instant invention is the provision of a new and novel method of taking an impression of an extremity.

While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawings, in which—

FIG. 1 is a top plan view of an imprint assembly embodying principles of the instant invention;

FIG. 2 is also a plan view of the assembly with parts broken away to indicate structure therebeneath, the device being in condition prior to use;

FIG. 3 is a view similar in character to FIG. 2, but showing the device adjusted for the taking of an imprint;

FIG. 4 is also a top view of the assembly with parts broken away to illustrate the structure therebeneath, after an imprint has been made;

FIG. 5 is an enlarged fragmentary transverse vertical sectional view taken substantially as indicated by the line V—V of FIG. 1;

FIG. 6 is a top plan view of an imprint assembly embodying principles of the instant invention, and of a size to receive impressions of both feet at the same time;

FIG. 7 is a plan view of an imprint assembly of slightly different construction, showing the upper two pieces of material broken away to indicate structure therebeneath;

FIG. 8 is a plan view of the structure of FIG. 7 illustrating steps and the result of taking a foot impression, with parts broken away; and

FIG. 9 is a greatly magnified fragmentary view of the surface of one of the sheets included in all illustrated embodiments of the instant invention.

As shown on the drawings:

The first illustrated embodiment of this invention comprises several paper-like sheets arranged in superposed relationship. Looking at FIGS. 1 and 2, and more particularly FIG. 2, it will be seen that the assembly includes a base or bottom sheet 1, a protective sheet 2 thereover, a transfer sheet 3 which may be in the form of pressure carbon paper, and a cover sheet 4. These sheets are preferably secured together along a margin of the assembly, and in the illustrated instance that is the top

margin with the sheets being held by staples or the equivalent 5, although it will be understood that the marginal portions of the sheets may be glued together if so desired.

As seen best in FIG. 1, the cover sheet may be provided with directive and size taking indicia including a base line 6, and a size scale 7, which in the illustrated instance denotes full and half sizes for indicating the size of shoe for the proper foot. A portion of the size scale 7a is disposed above the base line 6 and increases in number away from the base line, while another portion 7b is disposed below the base line 6 and also increases in numbers away from the base line. With such size indicia, it is not necessary that the foot be positioned upon the cover sheet in a precise location as has been necessary heretofore. On the contrary, the rear end of the heel may be positioned approximately at the base line 6, and such positioning may vary through a relatively wide range defined by the total length of the scale portions 7a and 7b. In taking the size of a foot positioned over the scale, the scale is read at the end of the large toe on the portion 7, and at the end of the heel on either portion 7a or 7b as the case may be. If the end of the heel occurs on the portion 7a, the number at the end of the heel is subtracted from the number at the end of the toe on the scale 7 to give the exact size of the foot; and if the end of the heel is on the scale portion 7b, the number at the end of the heel is added to the number appearing at the end of the toe on the scale 7 to give the accurate size.

Data concerning the particular patient, and if desired the particular imprint taken, may also be readily placed upon the cover sheet or upon the rear face of the base sheet, as may be desired.

With reference more particularly to FIG. 5, it will be seen that the base sheet 1 preferably has an imprint-receiving coating 8 thereon, and in the illustrated instance, this coating is natural rubber or the equivalent in a semi-cured state so that it will remain slightly tacky and readily receive an impression from the transfer sheet 3 and effectively preserve that impression or imprint indefinitely. Of course, other suitable coatings may be utilized but an uncured latex has been found highly satisfactory.

The protective sheet 2 may also carry a surface coating on its underside as indicated at 9 in FIG. 5, or it may be a suitably impregnated sheet of a character that is non-adherent to the exposed face of the base sheet 1. This protective sheet may be of paper impregnated with a synthetic rubber fully cured, or a sheet of paper impregnated with or carrying a thermoplastic film thereon, such as an acetate or polyethylene film. This protective sheet 2 is also preferably creped to enhance its non-adhering characteristics in relation to the base sheet 1. In the event the sheet has only a one-way creping, that creping runs transversely of the sheet or at right angles to the scale 7. Preferably, a sheet having a two-way crepe is utilized. The utilization of creped paper provides a better imprint on the base sheet, because the high points only will establish definite contact, except where the creping is flattened by excessive weight bearing of a part of the foot, thus indicating quite plainly whether or not the foot has any defect or affliction. An effort has been made to indicate the double creping effect in FIG. 9 of the drawings.

With reference now to FIG. 2, it will be seen that the transfer sheet 3 is preferably scored adjacent the secured marginal portion of the sheet, as indicated by the dotted line 10. This is the only sheet so scored, and the scoring or line of perforations enables this sheet to be readily removed when the assembly is put to use.

In operation, the instant invention is extremely simple and yet affords a most positive result. Assuming that it is desired to take the imprint of a human foot, the transfer sheet 3 is first removed by tearing it along the line 10, and then this sheet is reinserted between the base sheet 1 and the protective sheet 2, as seen in FIG. 3. The patient

then places his foot on the cover sheet 4 in proper position and the size of the foot may be determined from the scale 7 and the scale portions 7a and 7b and the size recorded on the cover sheet if desired. It is not essential that the actual size be marked in figures, because at the start of the operation, the outline of the foot is preferably traced on the cover sheet with a suitable marking implement, as indicated at 11, and the tracing is reproduced on the base sheet 1 by virtue of carbon paper. This tracing of the foot outline occurs simultaneously with the taking of the imprint. With the full weight placed upon the foot, the imprint assembly being on a reasonably smooth surface such as the floor, a plate, a rug, or the like, the transfer sheet marks the coated face of the base sheet 1 to provide a clean and positive imprint as indicated at 12 in FIG. 4 enclosed by the foot outline 11. The normal foot has three bearing points, namely the os calcis, and the first and fifth metatarsal heads as indicated respectively at 13, 14 and 15 where there will be an expected heavier application of color from the transfer sheet. In the instance illustrated, however, there is a heavy marking at 16 generally between the first and fifth metatarsal heads, which in this particular instance is indicative of a dropping of the metatarsal or transverse arch of the foot, and further indicates the need of a metatarsal arch lift for that particular patient. In that manner, other and various defects of the foot may at once be apparent from the imprint. For example, there will not be a narrowing of the imprint beneath the longitudinal arch of the foot in case of a flatfoot condition. There will be an extended imprint laterally of a part of the foot in the case of a bunion or the like. Consequently, from the imprint taken the specialist can decide upon the proper course of treatment or upon the type of footwear that should be worn, if the foot is not normal.

After the taking of the imprint 12, the carbon paper or transfer sheet 3 is removed and discarded. This leaves the base sheet with the imprint, the protective sheet 2 thereover, and the cover sheet 4 which carries the essential indicia concerning the patient, etc. This three-sheet assembly can therefore be easily filed for an indefinite period of time without injuring the imprint. Since each sheet of the assembly may be of the general thickness of an ordinary sheet of paper, the assembly requires very little room, may be folded or rolled as desired, and is readily transportable in the event an imprint is to be taken at a remote location. It will be especially noted that no other apparatus need be employed than is provided in the imprint assembly, and the entire assembly is extremely economical both as to original cost and by virtue of its space-saving character.

In FIG. 6, I have illustrated a foot imprinting assembly capable of taking imprints of both feet at the same time. This assembly comprises the same set of sheets as described above in connection with FIGS. 1 to 5 inclusive, except the sheets are of sufficient width to accommodate both feet. In this instance, therefore, the cover sheet designated by numeral 17, is provided with two sets of size scales 18 and 19, each having lower scale portions 18a and 18b, and 19a and 19b on the respective sides of the base line 20. With the wider sheets, it is preferable to staple the sheets together or otherwise secure them together along a side margin as indicated at 21.

With the particular type of size scales used in the present invention, it is a simple expedient to determine the sizes of both feet, whereas it would be an extremely difficult operation to precisely position both feet on a chart at the same time. Outlines of the feet are diagrammatically illustrated at 22 and 23, and it will be noted that the rear of the heel on the outline 22 is above the base line 20, while the rear of the heel on the outline 23 is below the base line. Consequently, the reading on the scale portion 18a for the left foot would be subtracted from

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the reading on the scale 18 to determine the correct size of shoe, while the reading on the scale 19b for the right foot would be added to the reading on the scale 19.

In FIGS. 7 and 8, I have shown a slightly different form of the invention, this form also being of a proper size to make imprints on both feet at the same time. In this arrangement, the same general sheets as above described are utilized, including the cover sheet 17, a sheet of pressure carbon paper 24, a protective facing sheet 25, and the base or imprint-receiving sheet 26. The sheets are preferably secured together along a side margin thereof, and if staples are used as indicated at 21, entire sheets may be removed, or if glue is utilized, both the cover sheet 17 and the pressure carbon sheet 24 are provided with a line of perforations as indicated at 27 in this particular arrangement.

The size scale printing is not carried by the cover sheet, but is applied directly on the outer face of the creped facing or protective sheet 25. This sheet is provided with a pair of size scales 28, each having lower portions 28a and 28b on the opposite sides of a base line 29. These scales function in the same manner as the size scales previously described herein.

In the use of this form of the invention, both the cover sheet 17 and the carbon sheet 24 are removable from the assembly. The cover sheet is then discarded while the carbon sheet is inserted between the protective sheet 25 and the base sheet 26 as seen in FIG. 8. Then the outline of each foot is drawn directly upon the protective sheet 25 as indicated at 30 in FIG. 8 for the left foot, and the imprint or tracing of the foot will appear upon the base sheet 26, as indicated at 31 in the same figure, for the right foot along with the foot impression 32.

By way of example, in this instance, I have illustrated a foot impression 32 which plainly shows the three proper bearing points of a normal foot, as well as the toe contact, but this impression also denotes a heavy marking at 33 indicating a fallen metatarsal arch or callosity, and the general shape of the print 32 indicates that the inner longitudinal arch of the foot has fallen to some extent and needs correction. Comparing the print of FIG. 8 with that of FIG. 4, it will be seen that there is no decided arch on the inside of the print, which clearly indicates a degree of flatfoot.

Any data concerning the particular patient may be written directly upon the protective sheet 25, and after the disposition of the carbon sheet 24, the two sheets 25 and 26 are filed away to preserve the record for that particular patient.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. A foot imprinting assembly, comprising superposed sheets of flexible material including a base sheet having an upper surface of uncured latex, a protective sheet thereover, a cover sheet above said protective sheet, and a removable carbon sheet above said protective sheet for insertion between said base sheet and said protective sheet when an imprint is taken.

2. A foot imprinting assembly, comprising a base sheet surfaced with a slightly tacky imprint receiving material, a protective sheet thereover having a surface of release material, a transfer sheet over said protective sheet mounted for removal and insertion between said protective and base sheets when an imprint is taken, and a cover sheet.

3. A foot imprinting assembly, comprising a base sheet surfaced with a slightly tacky imprint receiving material, a protective sheet thereover having a surface of release material, a transfer sheet over said protective sheet mounted for removal and insertion between said protective and base sheets when an imprint is taken, and a cover sheet, said sheets being secured together along a margin

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of the assembly, said transfer sheet being perforated adjacent said margin to permit ready removal thereof.

4. A foot imprinting assembly comprising a cover sheet, a bottom sheet with a tacky material on the upper surface thereof, a protective sheet having a release surface positioned in non-adherent relationship on said bottom sheet and a sheet of pressure carbon paper positioned between said cover sheet and said protective sheet and adapted to be removed from its said position between said cover sheet and said protective sheet and inserted between the protective sheet and the bottom sheet whereby a foot may be placed on said cover sheet to form an impression for study and reference on said bottom sheet by transfer of material from said pressure carbon sheet to said tacky material on said bottom sheet, said protective sheet having measuring indicia thereon to assist in the interpretation of the impression.

5. A foot imprinting assembly comprising from top to bottom a cover sheet, a sheet of pressure carbon paper, a protective sheet having a release surface facing downwardly, and a bottom sheet having an upper face of slightly tacky material, said carbon paper sheet being scored for ready removal and insertion between said protective sheet and said bottom sheet whereby a foot may be placed on the cover sheet to transfer material from the carbon sheet to the tacky material on the bottom sheet to form a record of the foot characteristics for study and reference.

6. An imprinting assembly including a bottom sheet having an upper surface of adherent material to receive an imprint from a pressure carbon paper placed thereover and a protective sheet having a release under surface normally overlying said adherent surface of said bottom sheet in non-adherent contact therewith to permit ready insertion of a carbon paper between the protective sheet and the bottom sheet and transfer of a foot impression or the like through the protective sheet to the bottom sheet so that the bottom sheet may receive carbon material in permanent record form, and the protective sheet may preserve the record after use of a carbon paper without danger of transfer of adherent or carbon materials thereto.

7. An imprinting assembly including a bottom sheet having an adherent upper surface to receive an imprint from a pressure carbon sheet placed thereover, and a protective sheet having a release under surface normally contacting said bottom sheet and the adherent surface thereof in non-adherent relationship so that the bottom sheet may be readily used for receiving an imprint from a carbon sheet and may retain the imprint without destruction by engagement of the protective sheet therewith, said protective sheet being creped so that the downwardly protruding points thereof will establish definite contact with a carbon paper and the bottom sheet to indicate a normal foot weight, and so that the creping will be flattened by excessive-weight-bearing portions of the foot to form a continuous transfer indicating a defect or affliction in the foot.

8. An imprinting assembly including a bottom sheet having an adherent upper surface to receive an imprint from a pressure carbon sheet placed thereover, and a protective sheet having a release under surface normally contacting said bottom sheet and the adherent surface thereof in non-adherent relationship so that the bottom sheet may be readily used for receiving an imprint from a carbon sheet and may retain the imprint without destruction by engagement of the protective sheet therewith, said protective sheet being creped so that the downwardly protruding points thereof will establish definite contact with a carbon paper and the bottom sheet to indicate a normal foot weight, and so that the creping will be flattened by excessive-weight-bearing portions of the foot to form a continuous transfer indicating a defect or affliction in the foot, said creping being in two directions for effective visual contrast in indicating a normal

foot condition and for good weight-supporting characteristics.

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