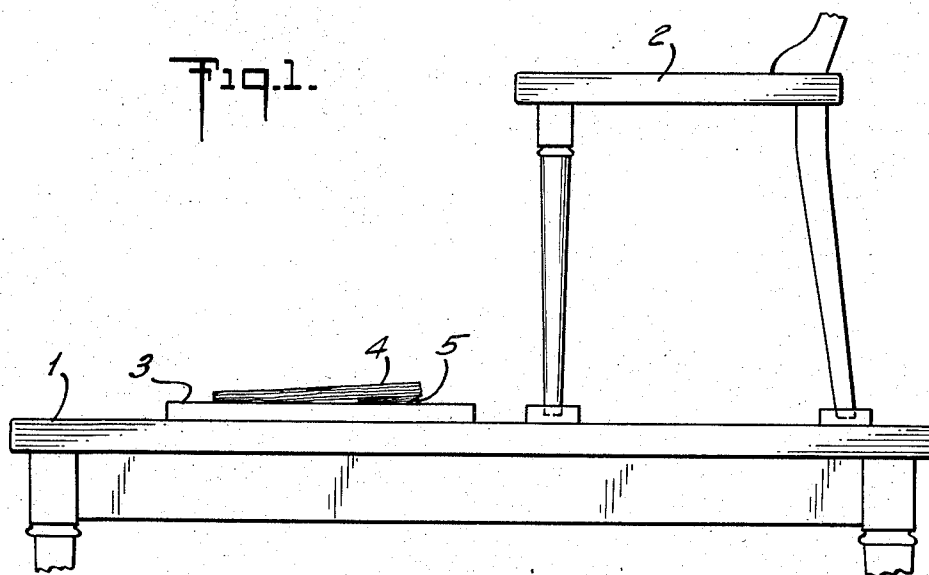
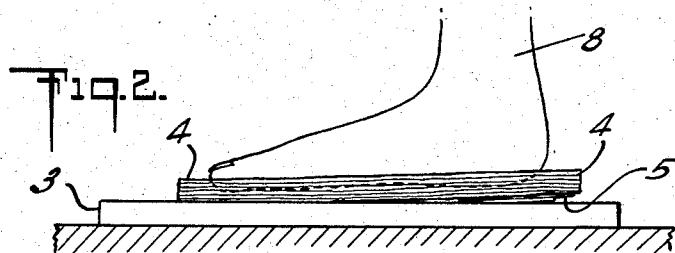
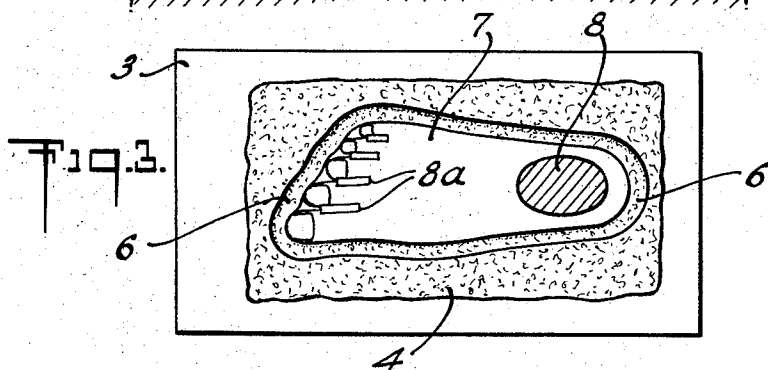
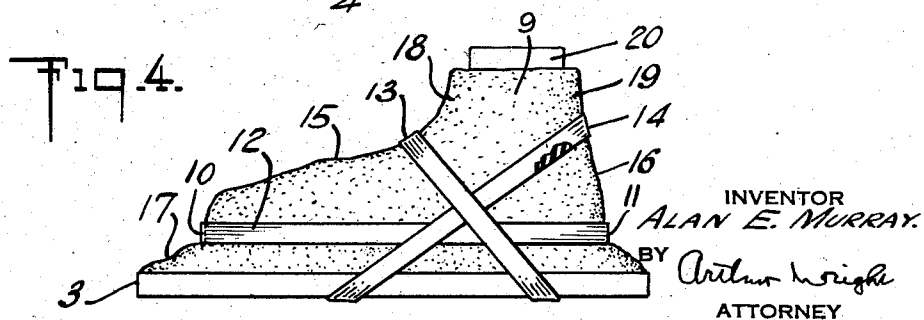


May 26, 1959

A. E. MURRAY
FOOT CASTING PROCESS

2,887,727

Filed Oct. 25, 1955



INVENTOR

ALAN E. MURRAY.

BY

Arthur Wright

ATTORNEY

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2,887,727

FOOT CASTING PROCESS

Alan E. Murray, New York, N.Y.

Application October 25, 1955, Serial No. 542,706

6 Claims. (Cl. 18—55.05)

My invention relates particularly to a process for making casts of the feet which is not only simple in procedure but has extraordinary effectiveness and accuracy.

An object of my invention is to provide a casting procedure by which the utmost accuracy of the foot contours may be obtained. A further object is to make casts of the feet in which the separation lines of the negative cast may accurately register and preserve the foot contours, so as to make it possible to produce a more accurate and effective positive cast therefrom. Further objects will appear from the detailed description of the same hereinafter.

While my invention is capable of being carried out in many different ways, by way of illustration I have described only certain embodiments thereof in connection with the accompanying drawings, in which—

Fig. 1 is a side elevation of a table and chair, having on the table a board on which the casting procedure is conducted while the person from whose feet the casts are being made may be seated on said chair;

Fig. 2 is a side elevation of said board showing the later stage of the process in which the foot has been returned to the board for the completion of the casting operation;

Fig. 3 is a plan view of the board showing the foot resting thereon in a plurality of rectangular pieces of terry cloth in which there is formed an annular channel or cup around the foot; and

Fig. 4 is a side elevation of the complete negative cast held in position on the board on which it is formed, by means of rubber bands.

In carrying out my invention, I provide a table 1 having a chair 2 thereon on which said person is to be seated, and having on said table a rectangular board 3. On the said board 3 I place, one after another, about eight rectangular pieces 4 of a looped pile fabric, such as terry cloth, having preferably the looped pile on both faces thereof, the said pieces 4 being each individually wet with water and wrung out before being placed, one after another, on said board 3. If desired, beneath the heel portion of said pieces 4 I may or may not have a plurality, for instance two, four or six, folded pieces 5 like said pieces of terry cloth 4, of approximately the same size. These pieces 5 are each wet with water and wrung out in the same way as the pieces 4 above referred to. Furthermore, they are applied, one after another, on top of one another, to form the desired elevation at the heel, each piece being folded over near the middle of said piece with the fold being located at the extreme rear or heel portion of the pieces 4. However, as shown in Fig. 1, the forward edges of said pieces 5, individually and collectively, need not register with one another but are located to provide a tapered position thereof with the edges of the lowermost piece 5 extending farther toward the left, in Fig. 1, and the other pieces 5 ending successively more to the right, in said figure. The wet mat of fabric material forms a hydraulic mat of an impressionable medium which readily

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receives an impression of the foot and such impression remains in the mat after the foot is removed. The impression forms a reservoir for a pool of molding material in which the foot is placed to form a final impression of the bottom of the foot while in weight-bearing condition.

Now the person is made to stand up on the terry cloth pieces 4 and 5, which squeezes out a little of the water, just sufficient to make the water visible, around the margin of the foot. Thereafter, the said person is seated on the chair 2, whereupon the operator makes an annular channel or cup 6 with his fingers all around the margin of the foot in the said pieces 4, adjacent to the foot, so that the inner and outer rims of the annular channel or cup are at just about the undercut line of the foot.

Now I prepare a mixture of powdered plaster of Paris and water having the consistency of a thick cream or a thin mud, and having therein about one tablespoon of salt to the whole batch of plaster of Paris mixture and water used in making the negative cast of the foot, to accelerate the setting thereof. Some of this thin plaster of Paris mixture is now put into the impression 7 of a foot 8 which has been made in the pieces 4, the foot 8 having been removed or lifted in order to permit the introduction of the plaster of Paris, to fill the impression 7 up to the level of the inner margins of said annular cup. Preferably, now, the foot is greased all over with vaseline or almond oil or face cream or hand lotion. The foot 8 is then returned to the impression 7 which causes the plaster of Paris to overflow and fill the channel or cup 6. This provides an impression of the foot, including the toe-recess pyramid, in a thin layer of plaster of Paris approximately $\frac{1}{16}$ " thick. With the fingers, the operator then clears the edge of the foot all around, down to the undercut line, by removing with the fingers any excess of the plaster of Paris mixture extending above the undercut line, and to the same level from between the toes. At the same time the operator clears out some of the plaster of Paris from the channel 6, thus producing a shallow channel, approximately $\frac{1}{4}$ " deep and having the width of the finger, all around the foot, to aid in centering the negative portions of the cast. Now, if desired, but which may be omitted if desired, pieces or strips of $\frac{1}{8}$ " thick plastelene, a molding clay mixed with oil, 8a, may be placed between the respective toes, to be later removed as hereinafter referred to; before making the positive cast, the plastelene strips being inserted to provide space for strengthening the webs of plaster of Paris between the toes in the positive cast and in order to prevent them from becoming broken. Thereupon, I brush all over the exposed plaster of Paris, beyond the margin of the foot, with a silicate of soda solution in water, which is allowed to dry. This produces an extremely effective and accurate lower negative plantar cast having the contours of the foot in its body-weight-bearing position while supported in a hydraulic medium, especially as it has not been necessary to lift the foot out of the impression containing the plaster of Paris before making the upper negative cast, and so that the extreme inner margin of the negative plaster cast on the foot has been preserved and not disturbed by foot lifting in any way. It is found, furthermore, that this innermost margin of the lower negative cast is better preserved by this procedure in relation to the upper portion of the negative plaster cast. As a consequence, also, the positive cast to be made in this composite negative cast becomes far more accurate and effective, especially at the meeting portions of the upper and lower negative plaster casts. It will be noted, also, that this effectiveness and accuracy retains the weight-bearing position and shape of the foot. The said weight on the foot may be merely the leg, or the weight

of the body if the said person has been made to stand while the foot impression 7 is being made. This impression of the foot, containing as well the toe-recess pyramid obtained in the plaster, is very delicate and correct inasmuch as the plaster beneath the foot is usually not more than approximately $\frac{1}{16}$ " thick.

Now there is built up all over the foot and out to the outer margins of the board 1, more of the plaster of Paris mixture 9, as shown in Fig. 4. Care is taken, however, to form two transversely and vertically flat areas 10 and 11 near the front and rear of the plaster 9 to receive a horizontal rubber band 12, which is aided by two rubber bands 13 and 14 for holding the negative cast portions together. While the plaster is soft, furthermore, separating lines or indentations 15 and 16 are made down the front and rear of the upper negative cast 9, respectively, for the subsequent separation of the negative cast into two upper portions. The foot, with the upper cast 9, is now lifted away from the bottom portion of the cast 17, leaving on the upper negative cast an annular depending rib formed by the plaster which has entered the channel 6. The upper negative cast is thereupon separated by tapping with a hammer into a forward portion 18 and a rearward portion 19. The plastelene strips 8a can now be removed from the lower cast 17. Then the three-piece negative cast 17, 18, 19, is secured together with the board 1 by means of the rubber bands 12, 13 and 14, having, as above referred to, the very perfect meeting edges between the lower negative cast 17 and the upper negative cast 18, 19, especially because of the interfitting rib and channel 6. Furthermore, it is noted that the lower negative cast 17 has the further advantage of having no marks of terry cloth or other fabric surfaces therein, but presents a smooth surface matching the foot surface with exactitude.

The whole interior of the negative cast 17, 18, 19 can now be brushed all over with a silicate of soda solution in water and then a positive cast 20 made therein by pouring in another batch of the plaster of Paris mixture, above referred to.

While I have described my invention above in detail I wish it to be understood that many changes may be made therein without departing from the spirit of the same. For instance, this process may be carried out, if desired, by placing on the foot, before and during the casting process, a toe pad or interdigital toe-positioner of any desired kind, as, for example, such as shown and described in my copending application Ser. No. 465,109, filed October 27, 1954, upon Interdigital Toe-Positioners, Casts, Footwear, Process of Making the Same and Products Thereof.

I claim:

1. The method of making a cast of the foot which comprises placing a yielding hydraulic mat on a support which mat comprises a plurality of layers of woven fabric material, placing the foot on said yielding hydraulic mat, bringing body weight to bear on the foot to form an impression of the foot in the yielding hydraulic mat, removing the foot from the foot impression, introducing a molding material into the hollow of the foot impression, placing the foot back into the foot impression, pressing the foot down against the molding material to form an impression of the foot therein, and then covering the exposed portion of the foot with a molding material to form a negative cast of the foot.

2. The method of making a cast of the foot which comprises the steps of placing a wet mat of fabric material on a support, placing the foot on said wet fabric mat, pressing the foot down against the mat to form an impression of the foot in said mat, removing the foot from the foot impression, introducing a molding material into the hollow of the foot impression, thereafter replacing the foot in the foot impression, pressing the foot down against the molding material to form an impression of the foot therein, and then covering the exposed portion of the foot with a molding material to form a negative cast of the foot.

3. The method specified in claim 2 which includes the steps of wetting a plurality of pieces of terry cloth fabric material and then placing the plurality of pieces of terry cloth on top of each other on a support to form the wet mat of fabric material.

4. The method specified in claim 2 in which the molding material is plaster of Paris.

5. The method specified in claim 2 which includes the steps of forming a separate channel in the wet fabric mat surrounding the foot impression which is positioned adjacent thereto, and then covering the exposed portion of the foot in said foot impression with a layer of molding material thick enough to extend down into said channel.

6. The method specified in claim 2 which includes the step of bringing the weight of the body to bear on the foot to form a weight-bearing impression thereof in the said fabric mat.

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