This invention relates to a multi-ply counter which possesses such firmness or rigidity as is desired in its walls and yet affords such high flexibility or softness as is desired at certain of its edge portions.

The counter hereof comprises at least three differently-sized, superposed, bonded, counter blanks or plies, including outer plies of relatively flexible material and an inner ply of relatively stiff material. The inner-ply blank is smallest-sized and occurs between an intermediate-sized, outer-ply blank, whose upper and side marginal portions project beyond the upper and side marginal portions of the inner-ply blank, and the largest-sized, outer-ply blank, whose upper and side marginal portions project beyond the upper and side marginal portions of the intermediate-sized, outer-ply blank. The inner-ply blank, being of relatively stiff material, plays the role of a stiffening core in the counter. The largest-sized, outer-ply blank, being relatively flexible or soft, furnishes in the counter such edge portions as bend comfortably to the foot. The intermediate-sized, outer-ply blank serves to mask the stiff or hard upper and side edges of the inner-ply blank from the foot and to inhibit undesirable separation or loosening of such edges from the largest-sized, outer-ply blank. In these latter respects, the counter hereof represents a significant improvement over such two-ply counters as results from the method of my Patent No. 2,148,336, dated February 21, 1939. In such latter counters, which comprises a relatively stiff ply or blank and a larger-sized, relatively flexible ply or blank, although the upper and side margins of the relatively stiff ply may be skived, such margins may break away from the farther-extending margins of the relatively flexible ply and thus be exposed in their undesirably sharp and stiff or hard condition.

With the foregoing and other features and objects in view, the present invention will now be described in further detail with particular reference to the accompanying drawings, wherein:

Figure 1 shows in plan view an outer-ply blank for the counter hereof.

Figure 2 similarly shows an inner-ply blank.

Figure 3 similarly shows the other outer-ply blank.

Figure 4 depicts in perspective the molded counter comprising the superposed, bonded, blanks or plies.

Figure 5 represents a vertical section through the back of the counter on the line 5-5 of Figure 4.

The blank 10 in Figure 1 represents the largest-sized blank entering into the multi-ply counter hereof. Such blank, which may advantageously afford the inner wall of the counter (i.e., that lying immediately next to the foot), may be cut from sheet material of the desired relative flexibility, for instance, rubber-impregnated fibrous material. Thus, it may be cut from the relatively flexible artificial leather stock known on the market as “Onco,” which stock is produced by impregnating with a rubber-like composition a web of felted cellulose fibers, preferably a soft web composed of refined wood pulp having an alpha cellulose content upwards of about 90%, and then drying the impregnated web. The blank 12 in Figure 2, which is to serve as the inner ply of the counter hereof, may be cut from sheet material of the appropriate stiffness relative to “Onco,” for instance, fiberboard, leatherboard, or the like containing, if desired, resin size, starch, or other suitable binders or stiffening agents. The blank 11 in Figure 3, which represents the other outer ply of the counter hereof and whose size is intermediate that of the blank 10 and that of the blank 12, may be cut from sheet material, say, “Onco,” of the same kind constituting the blank 10.

Each of the blanks 10, 11, and 12 is preferably cut away or recessed at its lower edge portion to provide an elongated recess or opening corresponding to a zone normally occupied by substantially all, excepting the front terminal regions, of the material of the usual counter blank formed up into a heel flange during the customary molding of the blank. The blank 11 is preferably skived over all its marginal portions m. While it is possible also to skive the marginal portions of the blank 10 and 12, such skiving may well be omitted. Indeed, the relatively flexible or soft sheet material, say, “Onco,” constituting the blanks 10 and 12 may have a thickness of only about 1/4-in. (i.e., about 1/48” thickness), whereas the relatively stiff or hard sheet material, say, fiberboard, constituting the blank 11 may have a thickness of about 2 to 3-in.
substantial coincidence, as the blank 11 is being substantially centered longitudinally on the blank 7 and the blank 12 is being substantially centered longitudinally on the blank 11.

The three blanks are preferably pried or assembled with cement between their contacting faces just before their molding into the finished counter illustrated in Figure 4 is effected, for it is described in my Patent No. 2,148,330, according to which the molding of superposed, relatively flexible and relatively stiff counter blanks to counter form is effected while the blanks are impermanently bonded (i.e., by cement still in unset state) and are hence free to undergo relative creeping movement during the molding operation. Such method of molding makes possible a shaped or molded counter structure of the desired finished configuration, that is, one more faithfully or accurately representative of the mold than otherwise.

The finished or molded counter of Figure 5 is equipped with the usual heel flange h, which is afforded by substantially only the skived relatively stiff material of the inner-ply blank 11. Because of the stiffness of such material, it lends itself for sharp or accurate molding such as makes for nice seating of the heel flange h on the heel seat of the shoe insole. The three blanks or pleys of the counter all have lower edge portions in substantial coincidence at the front terminal regions of the heel flange, since the recess or opening c in each of the blanks 10 and 12 is somewhat shorter than the length of the lower edge portion of the blank 11. As best appears in Figure 5, the largest-sized, outer-ply blank 10, which preferably affords the inside wall of the counter, extends substantially beyond the upper and side marginal portions of both the inner-ply blank 10 and the intermediate-sized, outer-ply blank 11, which latter extends beyond the upper and side marginal portions of the inner-ply blank 11. There is thus exposed to the foot only the relatively flexible or soft ply material, which provides the desired comparatively thin upper and side marginal counter portions t. Such portions t are afforded by only the outer-ply blank which is capable of being compressed to a thinner state during the molding operation. Again, the regions of overlap r between the two outer-ply blanks 10 and 12 are also susceptible of being compressed during the molding operation to a thinner state and of being bonded together so tenaciously as to avoid practically any tendency for the skived upper and side marginal portions m of the relatively stiff inner-ply blank 11 from separating or loosening from its bonded position in between the tenaciously-bonded, outer-ply blanks.

It may be desired in some instances to mold the three pried or assembled blanks hereof into a finished counter structure wherein the largest-sized blank 10 affords the outer wall of the finished counter and the intermediate-sized blank 12 affords the inner wall of the counter (i.e., the wall lying immediately next to the foot). In such instances, too, the foot is in contact with material of the desired softness and resiliency, including upper and side marginal counter portions of the desired thinness as well as softness and resiliency.

I claim:

1. A multi-ply counter comprising at least three differently-sized, superposed, bonded pleys, including outer-ply blanks of relatively flexible material and an inner-ply blank of relatively stiff material, the inner-ply blank being smallest-sized, one outer-ply blank being intermediate-sized and having upper and side marginal portions projecting beyond the upper and side marginal portions of the inner-ply blank, and the other outer-ply blank being intermediate-sized and having upper and side marginal portions projecting beyond the upper and side marginal portions of the intermediate-sized, outer-ply blank, whereby the upper and side marginal portions of said counter are afforded by only the material of said smallest-sized, outer-ply blank.

2. A multi-ply counter comprising at least three differently-sized, superposed, bonded pleys, including outer-ply blanks of relatively flexible material and an inner-ply blank of relatively stiff material, the inner-ply blank being smallest-sized and being skived at its upper and side marginal portions, one outer-ply blank being intermediate-sized and having upper and side marginal portions projecting beyond the upper and side marginal portions of the inner-ply blank, and the other outer-ply blank being intermediate-sized and having upper and side marginal portions projecting beyond the upper and side marginal portions of the intermediate-sized, outer-ply blank, whereby the upper and side marginal portions of said counter are afforded by only the material of said smallest-sized, outer-ply blank.

3. A multi-ply counter comprising at least three differently-sized, superposed, bonded pleys, including outer-ply blanks of relatively flexible material and an inner-ply blank of relatively stiff material, the inner-ply blank being smallest-sized and being skived at its upper and side marginal portions, one outer-ply blank being intermediate-sized and having upper and side marginal portions projecting beyond the upper and side marginal portions of the inner-ply blank, and the other outer-ply blank being intermediate-sized and having upper and side marginal portions projecting beyond the upper and side marginal portions of the intermediate-sized, outer-ply blank, whereby the upper and side marginal portions of said counter are afforded by only the material of said smallest-sized, outer-ply blank.
side marginal portions projecting beyond the upper and side marginal portions of the inner-ply blank, and the other outer-ply blank being largest-sized and having upper and side marginal portions projecting beyond the upper and side marginal portions of the intermediate-sized, outer-ply blank, whereby the upper and side marginal portions of said counter are afforded by only the material of said largest-sized, outer-ply blank.

FRED L. AYERS.