

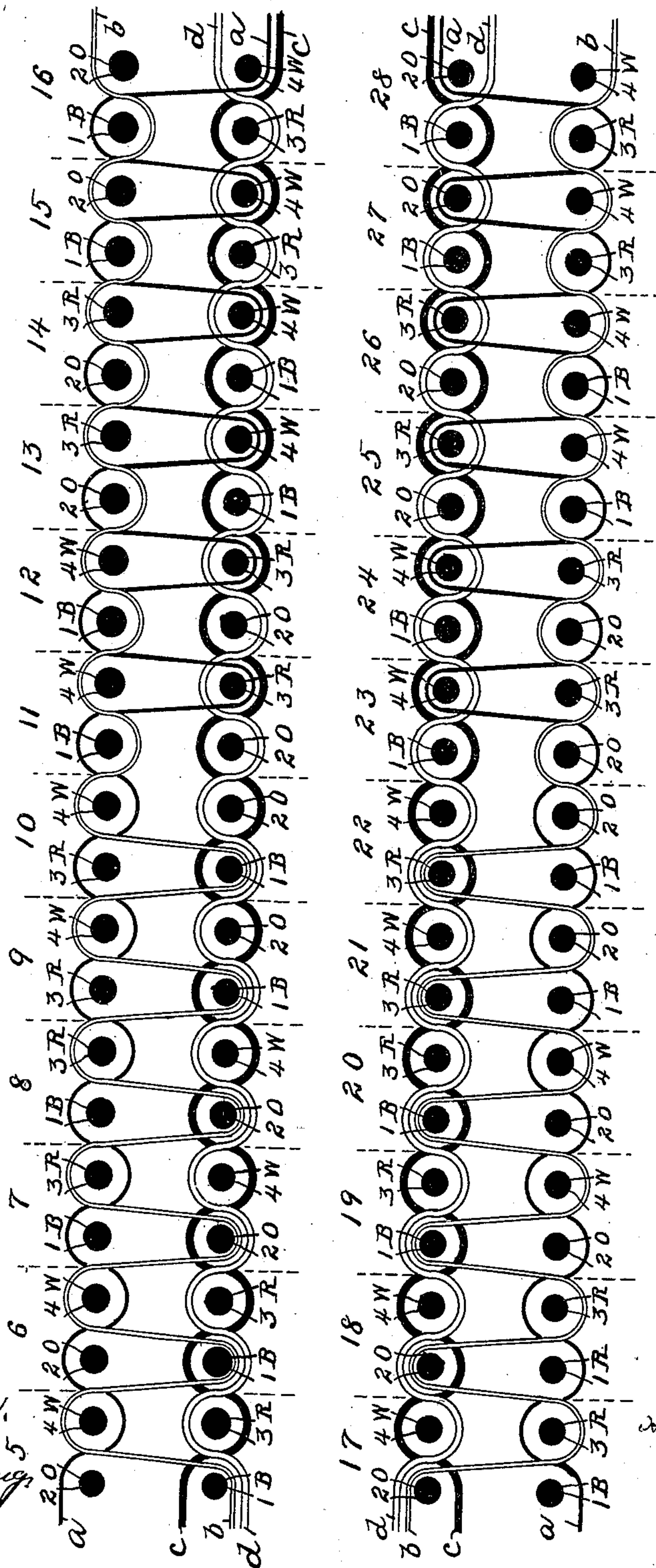
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Patented Oct. 29, 1901.

H. HARDWICK.
INGRAIN CARPET FABRIC.

(Application filed Apr. 20, 1897.)

(No Model.)



Witnesses.

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INGRAIN CARPET FABRIC.

SPECIFICATION forming part of Letters Patent No. 685,602, dated October 29, 1901.

Application filed April 20, 1897. Serial No. 632,951. (No specimens.)

To all whom it may concern:

Be it known that I, HARRY HARDWICK, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Ingrain Carpet Fabrics, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, which forms a part of this specification.

My invention has for its object the production of a novel two-ply fabric which will enable the production of many pleasing effects and by a novel use of warp will prevent the weft of one face or ply commingling with the weft of the other face or ply.

My invention belongs to that class of fabrics in which the wefts on one face are bound to the wefts on the other face throughout the fabric by having warps which bind the wefts of two faces in one shed. With this character of fabric, which, broadly considered, is old, there is a tendency for the wefts of one face to grin through to the other face, spoiling the surface of the fabric. Several methods have been attempted in order to obviate this difficulty. The most generally adopted form is to use a stuffer-warp lying between the two plies, which prevents the wefts of the two plies commingling. This construction has many disadvantages, among which may be mentioned that the stuffer-warp lying between the two plies of the fabric forms a bulky mass and is detrimental to the fabric in many cases.

I accomplish the result in my fabric, speaking generally, in the following manner: I have two sets of binder-warps, one set being heavier than the other set. This heavier set I place in one ply of the fabric, using the lighter warps to bind the other ply of the fabric and to pass from ply to ply to bind the two plies together. With such a construction as this whether the heavier warps be upon the face or the back of the fabric they prevent the commingling of the wefts of the two plies.

The drawing represents a section upon the warp of a fabric embodying my invention.

In the drawing W' , R^2 , O^3 , and B^4 represent the four wefts, in which the numerals represent the order of throw and the letters designate the colors—thus, W , white; O , olive; R ,

red, and B black. The light warps are denoted as a b and the heavy warps as c d .

I have divided the drawing into twenty-four sections (denoted 5 to 28) between the dotted lines. These sections are in pairs, 5 and 6 showing the same, 7 and 8 the same, and so on. The sections 17 to 28 are reverse effects from those shown in sections 5 to 16.

The specific description of each pair of sections of this fabric is as follows: In sections 5 and 6 the olive and white weft-threads are in one ply, the top, and the black and red weft-threads in the other ply, the bottom. The light warp-thread a passes alternately over and under the wefts in the upper ply, while the light warp b passes over alternate weft-threads in the upper ply and under alternate weft-threads in the lower ply. The heavy warp-threads c and d pass alternately over and under the weft-threads of the lower ply. In sections 7 and 8 the arrangement of warp-threads with reference to the weft-threads is the same as in sections 5 and 6, and in this section the black and red weft-threads are in the upper ply, while the olive and white threads are in the lower ply. In sections 9 and 10 the arrangement of warp-threads with reference to the weft-threads of the two plies is the same. The weft-threads of the two plies are different from the preceding sections, being different in that the red and white weft-threads appear in the upper ply and the black and olive weft-threads appear in the lower ply. In sections 11 and 12 the black and white weft-threads are in the upper ply and the olive and red weft-threads are in the lower ply. Like the other sections spoken of, one warp-thread remains at all times in the upper ply, while the other warp-thread passes alternately from one ply to the other; but differing from the preceding sections the warp-thread b remains in the upper face or ply, while the warp-thread a alternately passes from ply to ply. The heavy warp-threads, as in the preceding sections, pass alternately over and under the weft-threads of the lower ply. In sections 13 and 14 the arrangement of warp is the same as that in the preceding sections 11 and 12, the only difference being that the weft-threads olive and red are in the upper ply and the weft-threads black and white in the lower ply. Likewise in sections 15 and 16 the ar-

5 rangement of the warp is similar to that in sections 11 and 12, the difference being in the arrangement of the weft. In these sections 15 and 16 the wefts black and olive are in the top ply and the wefts red and white in the lower ply. Sections 17 to 28, so far as the weft is concerned, are identical with the corresponding sections 5 to 16, the difference between the two sets of sections being only
10 in the fact that the heavy warps lie in the upper ply, while the light warps bear the same relation to the lower and upper plies that they did in sections 5 to 16 with reference to the upper and lower plies.

15 Throughout the construction of this fabric the heavy warps are in one ply and the light warps in the other ply, and at intervals the light warps pass from one ply to the other, binding the two plies together.

20 The fabric of my invention, as may be seen from the foregoing description, is formed prac-

tically by weft and binding or light warp, in which upon one face or ply the heavy warp surrounds the weft and prevents it from commingling with the weft of the other ply. 25

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

In a two-ply ingrain carpet having wefts in sets of four and warps in sets of four, two being heavy warps and two light warps, and in which the heavy warps lie in one ply and surround the weft in that ply, and the light warps pass from ply to ply to bind the plies together. 30

In testimony of which invention I have hereunto set my hand. 35

HARRY HARDWICK.

Witnesses:

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