

(No Model.)

H. FAWCETT.

ART OF MANUFACTURING BORDERED CARPETS AND OTHER FABRICS.

No. 364,711.

Patented June 14, 1887.

Fig. 1.

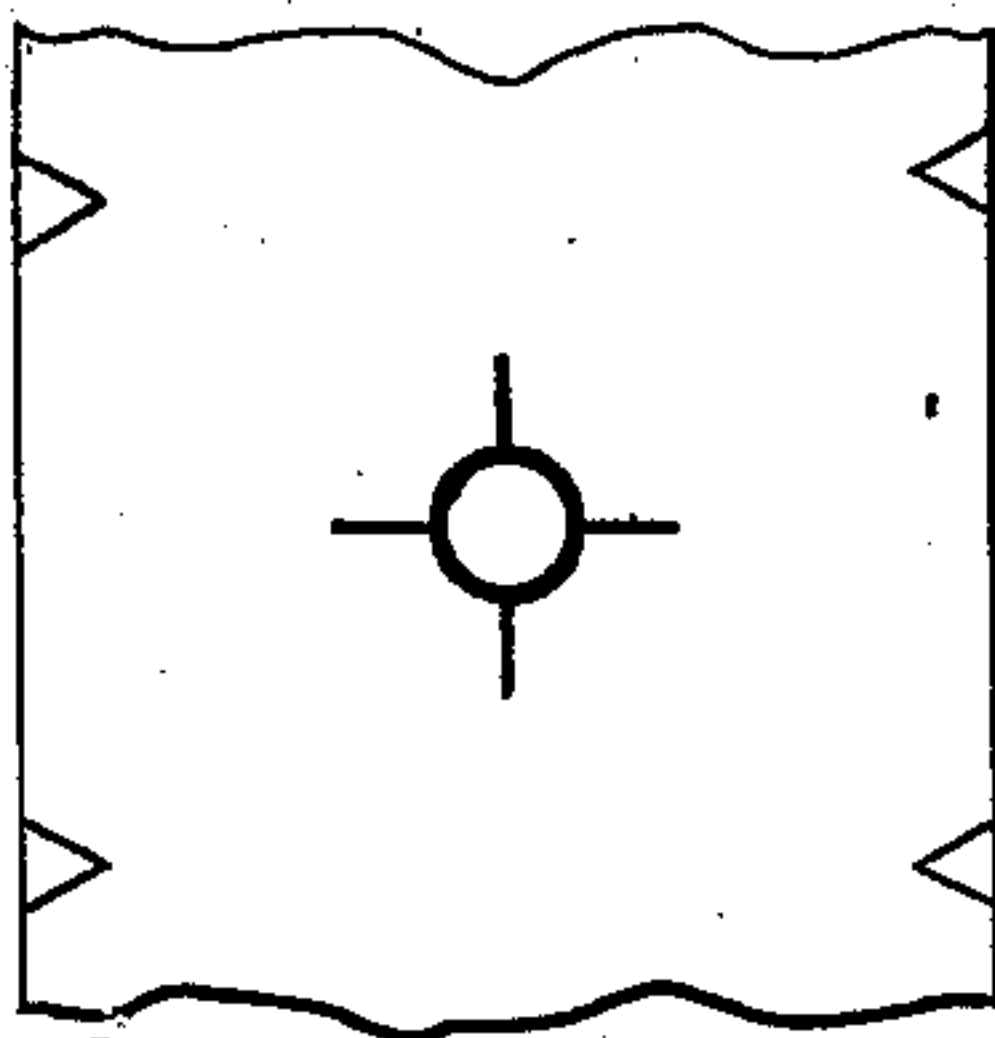


Fig. 2^a

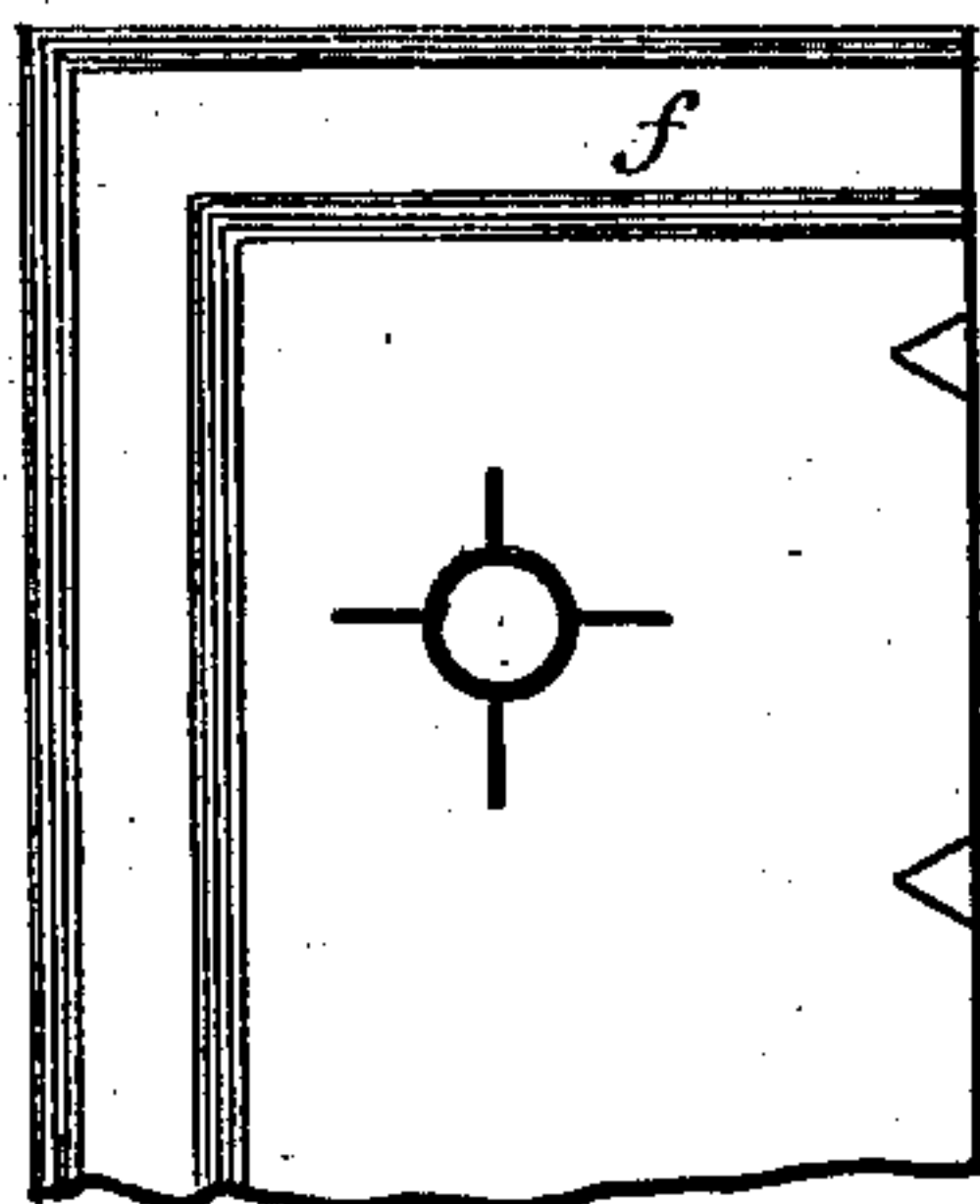


Fig. 2^b

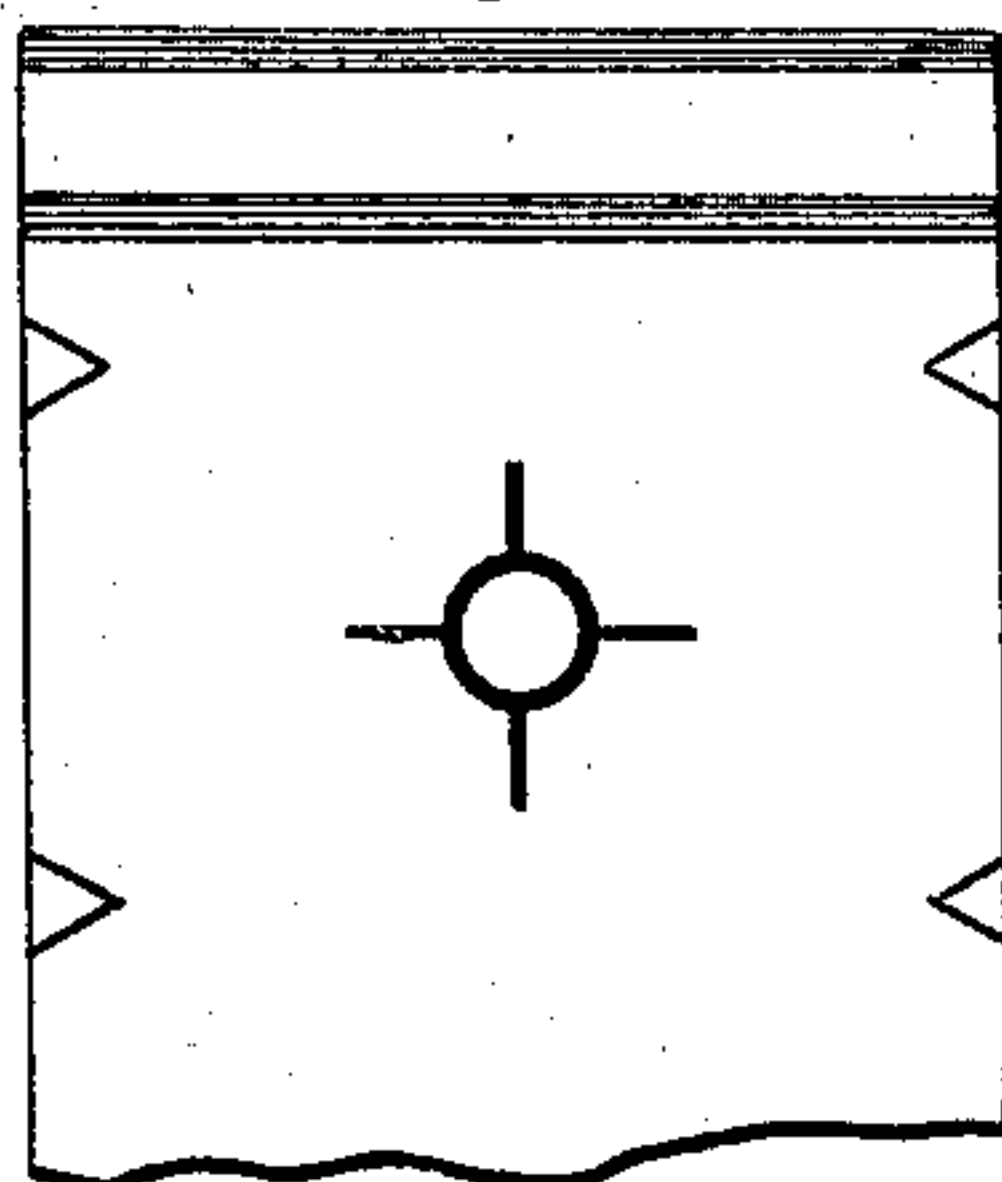


Fig. 2^c

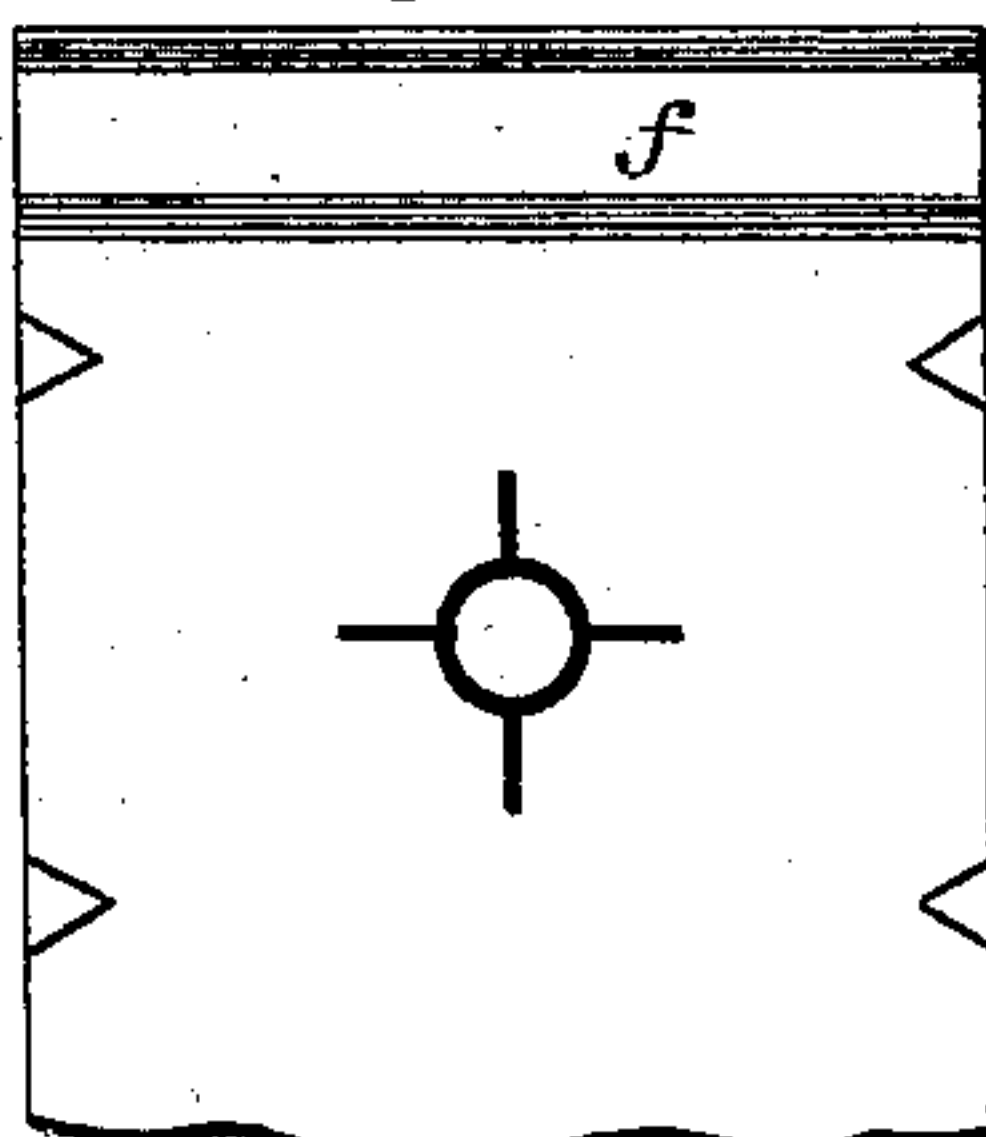


Fig. 2^d

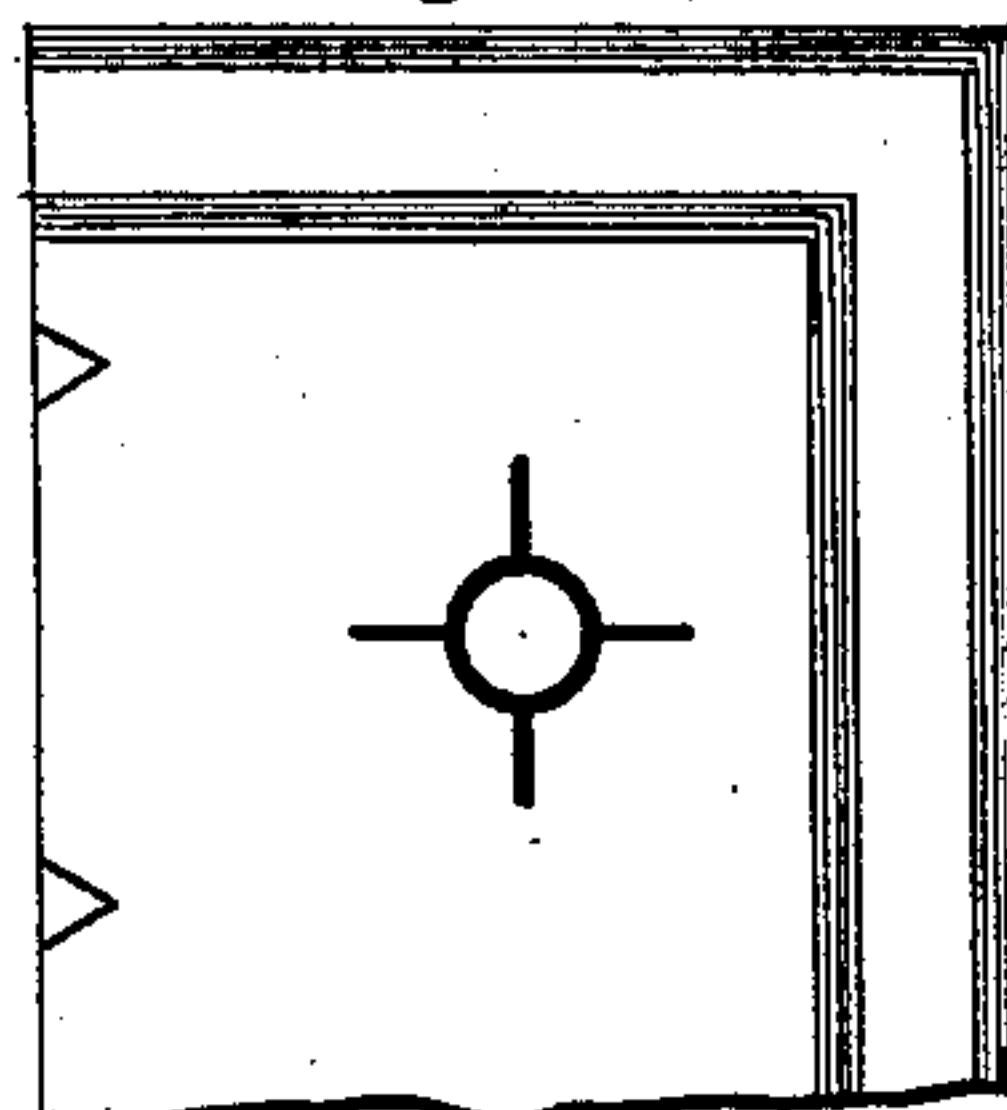


Fig. 3.

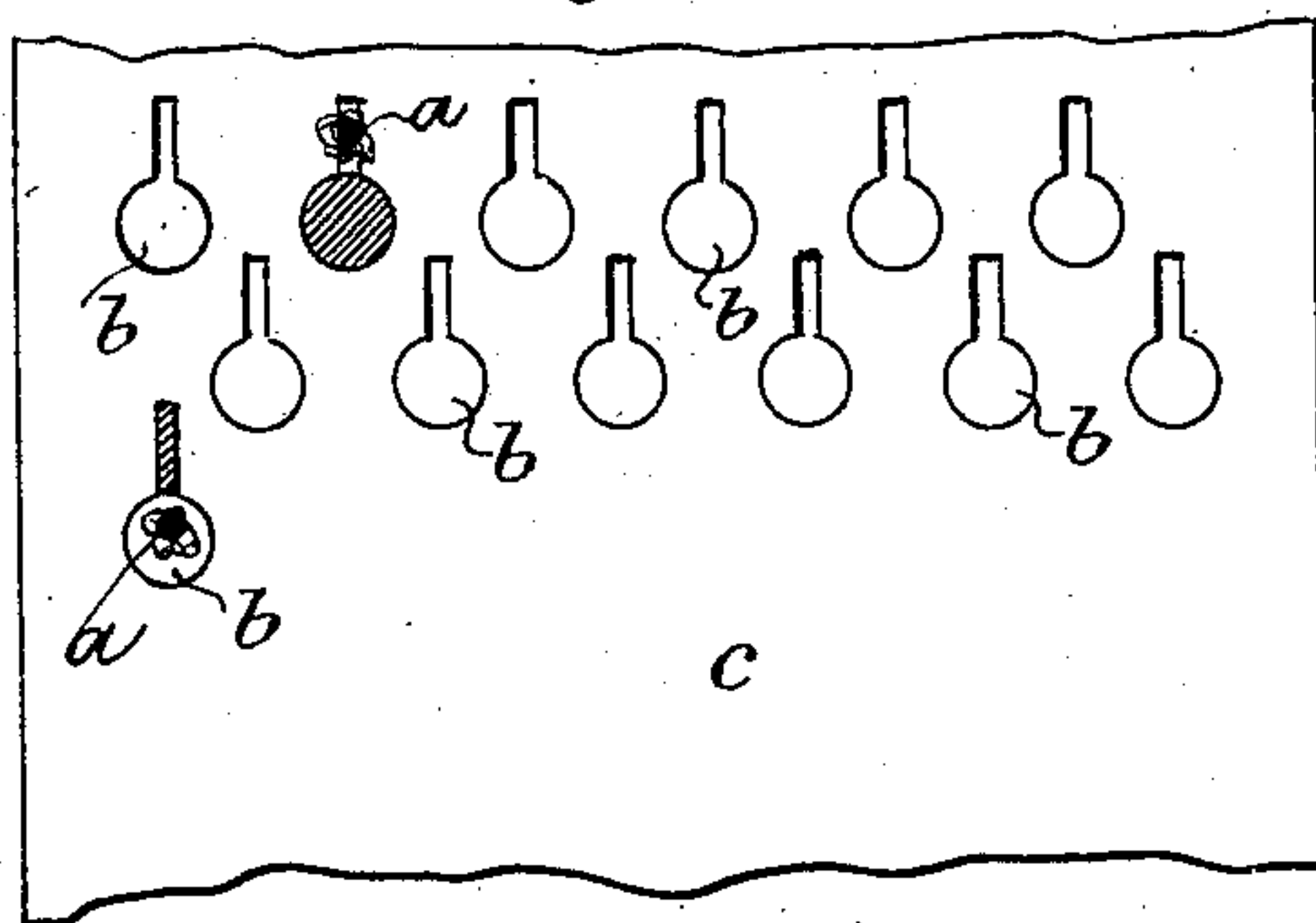


Fig. 4.

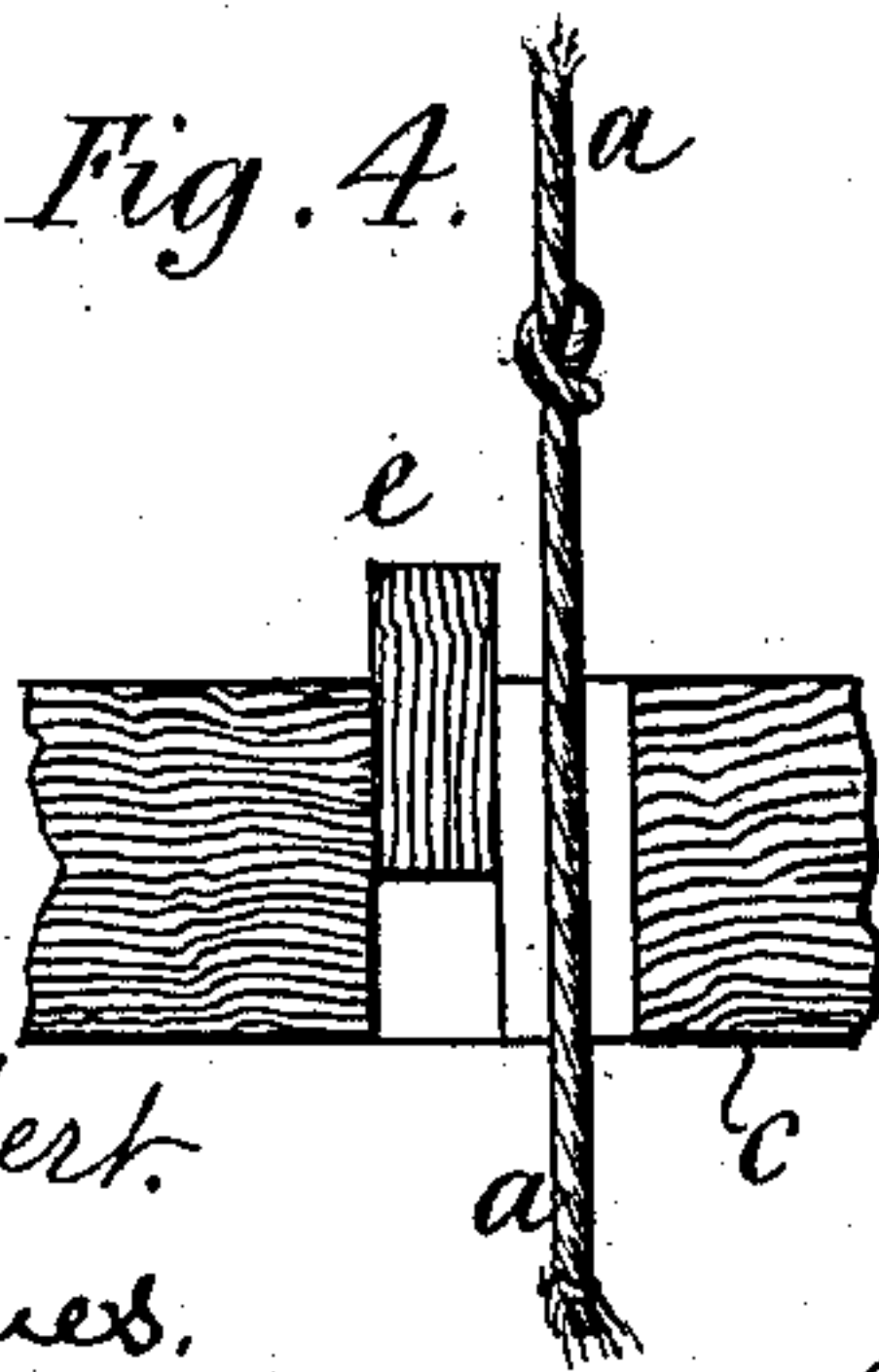
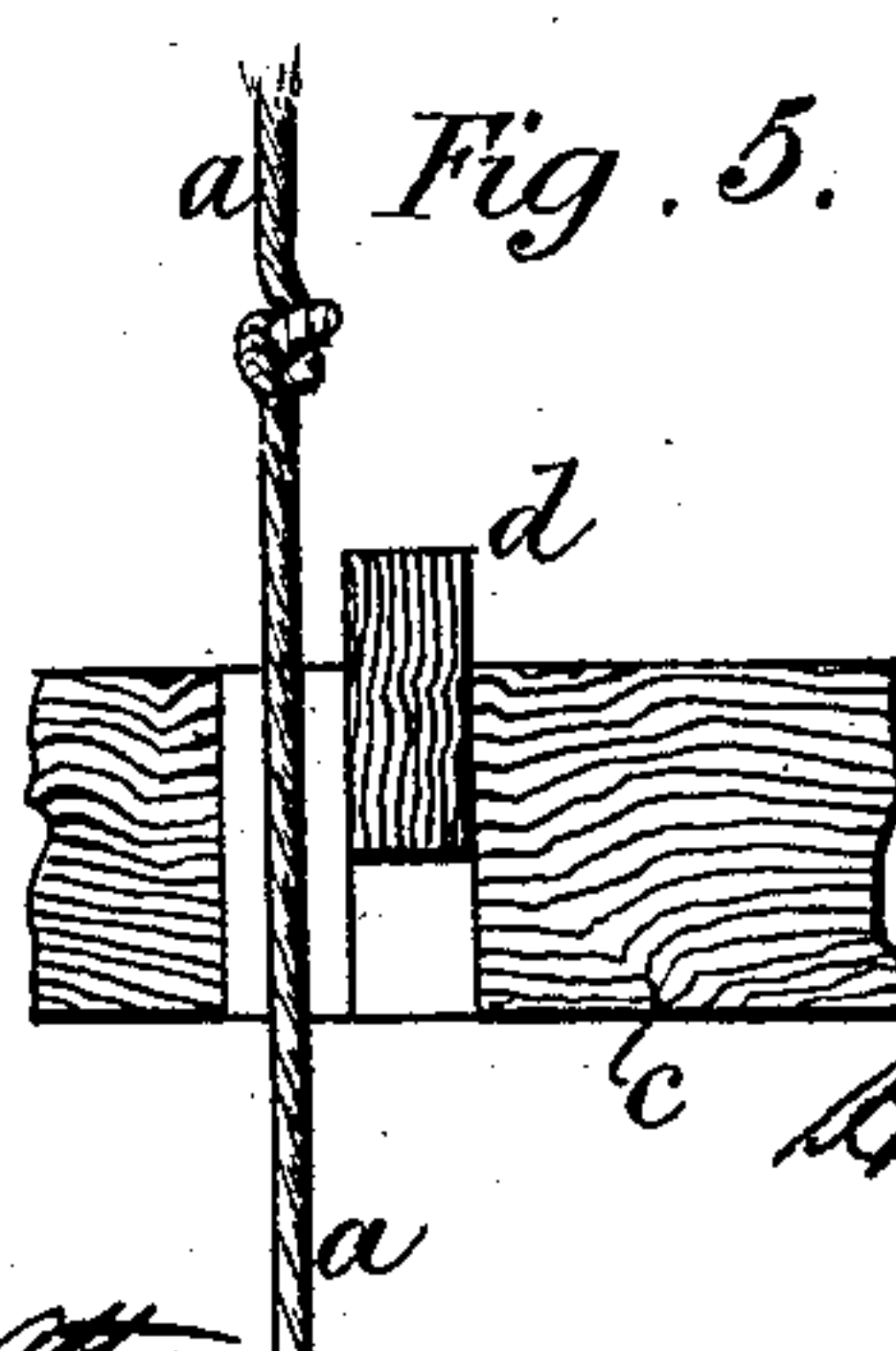


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY FAWCETT, OF KIDDERMINSTER, COUNTY OF WORCESTER, ENGLAND.

ART OF MANUFACTURING BORDERED CARPETS AND OTHER FABRICS.

SPECIFICATION forming part of Letters Patent No. 364,711, dated June 14, 1887.

Application filed June 18, 1884. Serial No. 135,350. (No model.) Patented in England April 24, 1883, No. 2,088.

To all whom it may concern:

Be it known that I, HENRY FAWCETT, a subject of the Queen of Great Britain, residing at Kidderminster, in the county of Worcester, England, carpet-manufacturer, have invented certain new and useful Improvements in the Art of Manufacturing Bordered Carpets and other Fabrics, (for which I have received Letters Patent in Great Britain No. 2,088, dated April 24, 1883,) of which the following is a specification.

Heretofore it has been the general custom to make borders separate from the body-carpet. They are afterward sewed onto the body-carpet. At the four corners the border is doubled under diagonally in what is technically termed a "miter." This produces an objectionable thick edge. Again, the old method necessitates that on two sides of a carpet the border crosses the body—that is to say, the direction of the length of the border is transverse to the length of the pieces of carpeting—and the pile-loops of the border and of the body of the carpet, respectively, are reversed the one relatively to the other—that is to say, from the same point of view the edges of the pile-loops in the one and the eyes or openings of the pile-loops in the other would appear. This, especially in cut-pile carpets, gives a different shade to that of the other two sides of the border and of the body-carpet. By the present invention both these objections are obviated.

My object is to produce a bordered carpet or like fabric by weaving the border with instead of separate from the body. In accordance with my method, the carpet is produced in a Jacquard loom prepared for weaving unbordered breadths. I temporarily supersede the action of the jacquard in the production of certain parts of the fabric, as hereinafter described. Where the action of the jacquard is superseded, continuous lines or stripes of one color or of one mottle or mixture of colors are produced, and these stripes are woven on opposite sides of portions of the body-pattern, which are separated from the remainder by producing the inner lines or stripes, or those between such portions and the remainder of the body. The portions of the body-pattern so separated become the important portions of the border, and the lines or stripes form the outlines of the border.

In order further to explain my invention, I will refer to the annexed drawings.

In the drawings, Figure 1 shows a portion of a width of Brussels carpet of the ordinary description. The loom employed in the manufacture of my improved carpets is supposed to be set up to weave this carpet in the ordinary manner. Figs. 2^a, 2^b, 2^c, and 2^d show parts of my improved bordered carpet woven in this loom. Fig. 3 is a plan of the rising and falling board, which, by operating on knotted strings passing through holes in it, lifts at the proper times the pile warp-threads selected by the jacquard. Fig. 4 is a section of a portion of this board with a peg inserted into the round part of one of the holes. The figure also shows the knotted string retained by the peg in the narrow part of the hole, so that (however the jacquard may operate) the string with the warp-thread which it controls is lifted when the board rises. Fig. 5 is also a section of a portion of the board with the rectangular peg in the narrow part of one of the holes, so that (however the jacquard may operate) the string will not be lifted by the board.

I will suppose that I have a Brussels-carpet loom set up in the ordinary way to weave Brussels carpet, and that I wish to produce with it a bordered carpet, or, rather, a series of breadths of carpet, which, when sewed together longitudinally in the ordinary way of making up a Brussels carpet, will form a square or oblong carpet of any desired dimensions, bordered all around with a border woven with the body-carpet. I have then to weave, first, the necessary number of intermediate breadths, Figs. 2^b and 2^c, all alike, and each having two portions of border upon it, separated by as many yards of the body-pattern as the size of the carpet to be made renders necessary. In these intermediate breadths the portions of border, one at each end, have to be produced transversely across the fabric, and (if the pattern be such as to admit of the distinction between inner and outer side) the two portions of border have to be produced in reversed positions, so that the inner side of the border may in such case be against the body part of the carpet. Second. I have to produce in the loom the outside breadth to form, say, the right side of the carpet, Fig. 2^a. In this the border

will in the main be required to run lengthwise of the fabric and on the right side of it; but at each end the border will require to change its direction, and will be continued across the carpet to the left, so that in making up the carpet it will join accurately with the portions of border on the adjacent intermediate breadth. Third. The outside breadth to form the left side of the carpet, Fig. 2^a, has to be similarly produced, but with the longitudinal border-pattern on the left side, with connections at the end passing to the right to join up with the border-pattern on the intermediate breadth, to which it will be sewed on its right side. The jacquard of the loom being of the ordinary description, the figure warp-threads for the fabric are controlled by means of cords *a*, (one for each thread,) passing through holes *b* in a rising and falling board, *c*.

Such being the arrangement of the loom to produce one of the intermediate breadths of a carpet, it is necessary first to weave a transverse stripe suitable for the extreme outer margin of the carpet. This stripe will usually be in one color, (I will call this black,) and I prepare the loom to weave it by inserting wooden pegs into the key-hole-like holes already mentioned. I employ two sorts of pegs—one adapted to fit and fill the narrow part of the hole, and the other the wide part. I now insert pegs of this latter sort, *e*, into all the holes corresponding to figure warp-threads of the color which I require for the stripe, and into all the other holes I insert pegs of the former sort, *d*.

By this means the jacquard is for the time rendered inoperative, for, however the cords may be drawn by the jacquard, those corresponding to the color which I require are kept in the narrow parts of the holes in the rising and falling board, and consequently are brought up with it at each movement, while all the other cords are kept by the pegs in the wide parts of the holes, and hence are never raised. The loom being thus arranged, the weaving is commenced.

After a few picks without the insertion of pile-wires the weaving is proceeded with until the black stripe for the outer margin of the carpet is of the desired width. Then the loom is stopped and the pegs are shifted in such manner that on recommencing to weave the figure warp-threads of another color are raised and another stripe from side to side of the breadth of carpet is produced. This stripe will, perhaps, be narrow—a mere line to define the outer band of the carpet-border. This line having been produced, I again change the pegs and put in, perhaps, another colored line. Then I make another change. This time I may so set the pegs as to cause two figure warp-threads to rise together in the same dent of the reed. The band which I now weave is mottled or made up of two colors mingled in a way which contrasts well with the other parts of the carpet, where (usually) but one figure-thread at a time is brought up in each dent. After this, again and again changing the pegs,

I produce other narrow lines, so that the band may be bounded on either side by similar lines. Now, perhaps, I proceed at once to weave the important part of the border, or I may add another mottled band, according to the taste of the designer.

To prepare for the important part of the border—that is to say, the part marked *f* in Figs. 2^b and 2^c—I remove all the pegs and then weave with the jacquard operating in the usual manner, thereby producing a portion of the carpet-pattern extending across the breadth from side to side. When the portion of the body-pattern selected for the border has been thus woven, the loom is again stopped, pegs are inserted, and by operating in the manner already described the border-pattern is completed on the other side with transverse stripes, lines, and mottled bands, so that the fabric on the two sides of the central or important part of the border may match or be properly related. The section of border being now complete, the pegs are all removed and the main body-carpet is woven, say, for three, four, five, or more yards, according to the dimensions of the bordered carpet to be made. Afterward I again produce another portion of border extending across the breadth of carpet from side to side, performing all the operations gone through at the first, but in the reverse order, the inner stripes or lines, or those which separate the important portion of the border from the body-pattern, being first produced. This completes an intermediate breadth. Thus, as will be seen, the intermediate breadths for a carpet are all alike, and each consists of a piece of body-carpet terminated at either end by a portion of border crossing it transversely from side to side and all woven of a piece. All the intermediate breadths required are woven in a similar manner, as many of them as the dimensions of the bordered carpet to be produced renders necessary.

In weaving one of the outside breadths I commence as before; but when the time comes for making the first change in the arrangement of the pegs, in place of altering the arrangement all across the loom, I leave as they were the pegs corresponding to the figure warp-threads near the outer side of the breadth, in order that the marginal color (say the black) may in weaving be contained all along the outer side of the breadth of carpet to the same width as the border-stripe first woven on the intermediate breadth. With this exception I work, as before, until the next change of pegs has to be made, and then, again, I leave unchanged other pegs near the outer side of the breadth and next to those previously left, so that the outer line of the border-pattern may similarly be continued along the breadth which is in process of weaving. So I go on, arranging the pegs so that every transverse line in the border-pattern is continued longitudinally of the breadth. In due course I proceed to weave so much of the important portion of the border-pattern as ex-

tends across the breadth, and for this the jac-
quard comes into use. Then, at the next change,
I insert the pegs suitably to produce the line or
stripe which next follows in the border, com-
5 mencing at the inner edge and extending partly
across the breadth. While this line or stripe
is being woven, the jacquard remains in oper-
ation to continue the important portion of the
border longitudinally of the fabric, and be-
10 yond this on the outer side the jacquard is
superseded by the pegs previously inserted,
and which now remain permanently in place.
When the pegs on the inner side are next
changed to commence another line or stripe, I
15 leave such pegs as will cause the previous line
or stripe to be continued longitudinally of the
breadth of carpet adjacent to the important
portion of the border and on its inner side.
Thus I go on, arranging the pegs to continue
20 each stripe, band, or line longitudinally until
the border-pattern is fully developed. Then,
leaving the pegs as they are, I continue to
weave, the jacquard being operative in the
important or central portion of the border and
25 also on the inner side of the breadth, but be-
ing superseded elsewhere by the operation of
the pegs. In this way the breadth is woven
to the length necessary to match to the next
intermediate breadth, and then I again com-
30 mence the production of the end or transverse
portion of the border-pattern, which I do by
operating in the manner already described, but
everything in reverse order. The other outside
breadth of the carpet is produced in a pre-
35 cisely similar manner, but with the border on
the other side of the breadth.

The process which I have described is ap-
plicable, as will be readily understood, for the
production of bordered stair-carpet in a loom
40 set up and with a jacquard arranged to pro-
duce a width of ordinary or unbordered Brus-
sels carpet, pegs being inserted in the manner
described to supersede the jacquard and pro-
duce the stripes, lines, and bands of which
45 the border is composed.

My invention is not confined to the produc-

tion of Brussels carpets. Other bordered fab-
rics similarly produced in breadths by the aid
of the jacquard may be similarly made.

I do not claim, generally, seamless borders 50
or superseding the operation of the jacquard
generally; but

What I claim is—

1. The method described of weaving an in-
termediate breadth of fabric having the bor- 55
der formed with the body thereof, in a loom in
which the figuring warp-threads are controlled
entirely by a Jacquard machine, which con-
sists in weaving some portions when the
thread-selecting devices of the Jacquard ma- 60
chine are in full operation, as usual, then su-
perseding the action of the said thread-select-
ing devices, so that the order of the warp-
threads shall remain unchanged, and weaving
other portions in which the same warp-threads, 65
all of one color or mixture of colors, appear
constantly at the surface, thereby producing
stripes across the fabric, separating portions of
the body-pattern from the remainder, sub-
stantially as described. 70

2. The method described of weaving an out-
side breadth of fabric having a border formed
with the body thereof, in a loom in which the
figuring warp-threads are controlled entirely 75
by a Jacquard machine, which consists in
weaving some portions with the thread-select-
ing devices of the Jacquard machine in full
operation, as usual, and other portions with
the action of the said thread-selecting devices
superseded, so that the order of the warp- 80
threads shall remain unchanged, and the warp-
threads, all of one color or mixture of colors,
appear constantly at the surface, thereby pro-
ducing stripes along the fabric, separating por-
tions of the body-pattern from the remainder, 85
substantially as described.

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