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R. S. & H. COOKSON.

WOVEN PILE FABRIC.

APPLICATION FILED AUG. 27, 1902.

SPECIMENS.

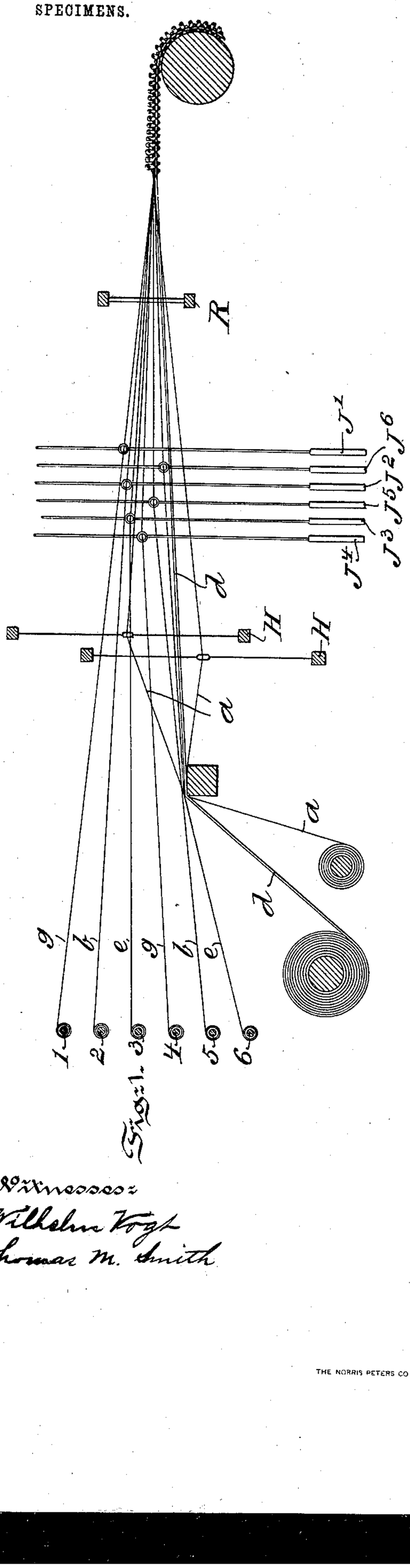

Fig. 1.

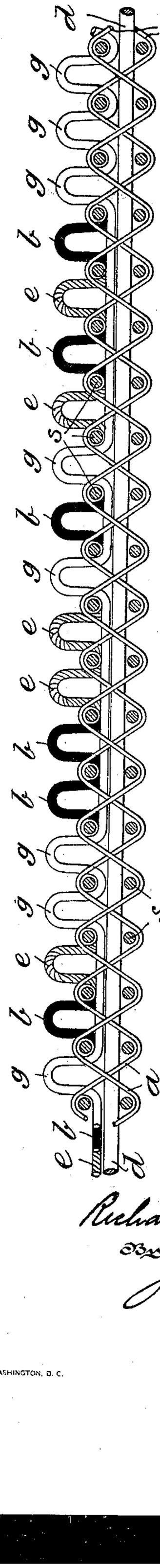

Fig. 2.

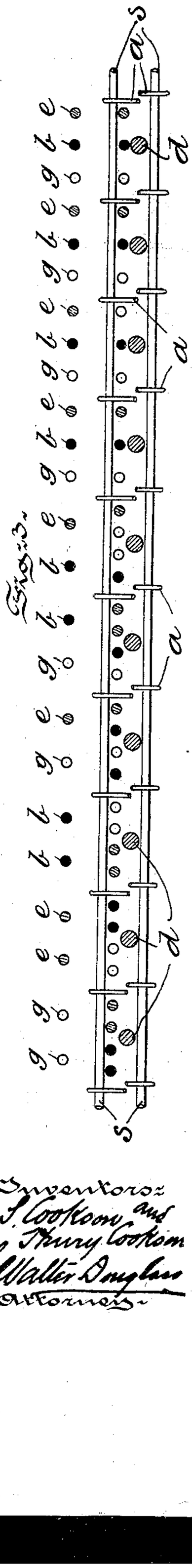

Fig. 3.

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UNITED STATES PATENT OFFICE.

RICHARD S. COOKSON AND HENRY COOKSON, OF PHILADELPHIA, PENNSYLVANIA.

WOVEN PILE FABRIC.

SPECIFICATION forming part of Letters Patent No. 731,433, dated June 23, 1903.

Application filed August 27, 1902. Serial No. 121,163. (Specimens.)

To all whom it may concern:

Be it known that we, RICHARD S. COOKSON and HENRY COOKSON, citizens of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have jointly invented certain new and useful Improvements in Woven Pile Fabrics, of which the following is a specification.

Our invention has relation to the manufacture of a woven pile fabric—such, for instance, as a Brussels-carpet fabric—and in such connection it relates to the manipulation and arrangement of the pile or face threads of such a fabric.

Heretofore in the weaving of a Brussels or pile carpet fabric the pile or face threads have usually been arranged in five frames, three frames each containing a three-ply yarn or end and the remaining two frames each containing a two-ply yarn or end. There were thus used in the fabric thirteen ends passing through a single dent of the reed, and in the manipulation of the ends there appeared at one time in the pile or loop a single frame composed of two or three ends at the most, the remaining ten or more ends lying concealed in the body of the fabric.

The objects of our present invention are to simplify the weaving of Brussels or pile carpet fabrics, to lessen the cost of the fabric without impairing its utility, and to provide a means whereby the color effects may be increased without increasing the number of separate color-threads used in the fabric.

To this end our invention consists, essentially, in arranging the pile or loop threads in single ends and in preferably six frames, two frames and two ends corresponding in the series to one of the colors desired, thus making three colored threads duplicated, and in passing the six single ends through a dent of the reed and arranging the jacquard and harness so that when desired two ends of the same color or two ends differently colored or three ends of varying colors may be brought up to form the loop or pile in the carpet fabric.

The nature and scope of our invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a diagrammatic view illustrating the operation of a loom in the manufacture of a fabric embodying main features of our invention. Fig. 2 is a sectional view, enlarged, of the fabric, taken on a plane parallel with the warp-threads of the fabric; and Fig. 3 is a sectional view, enlarged, of the fabric, taken at right angles to Fig. 2.

Referring to Fig. 1 of the drawings, *a* represents the binding warp-threads, and *d* the jute or stuffer warp-threads forming the base or back of the carpet fabric. The two binder warp-threads *a* are manipulated in the usual manner by the harness H H. The pile or loop warp-threads are arranged in six frames 1, 2, 3, 4, 5, and 6, whereof frames 1 and 4 each contain a single end *g* of the same color. Frames 2 and 5 likewise each contain a single end *b*, both ends *b* being of the same color, and the frames 5 and 6 containing the single ends *e e*, both of the same color. Each end from each frame passes through the eye of a single lingo J', J^2, J^3, J^4, J^5, and J^6, and these lingoes form a part of the harness for a jacquard, (not shown,) which manipulates the ends *g*, *b*, and *e*, as hereinafter described. All six ends *g g*, *b b*, and *e e* pass through a single dent of the reed R.

Referring now to Figs. 2 and 3, it will be seen that in the operation of the loom a single shuttle or weft thread *s* is used to bind the pile-threads *g*, *b*, and *e* to the jute and backing of the fabric, as heretofore was the case. The manipulation of the pile-threads *g*, *b*, and *e*, however, differs in the following important particulars: First, the number of ends used are six in each dent, so that above the jute warp which passes through that dent there are six threads *g g*, *b b*, and *e e*; second, in the manipulation of the pile-threads two or three are looped to appear upon the face of the fabric and four or three lie in the middle plane of the fabric; third, the ends *g*, *b*, and *e* are single, and, fourth, in the manipulation of these six single ends the following coloring effects may be produced:

Referring to Fig. 3, beginning at the left,

the jacquard-harness in the first set of weave brings up into the loop two ends *g g*, supposed to be green in color, the ends *b b*, brown in color, and *e e*, écru in color, remaining concealed in the fabric. The carpet at this point will on its face be solid green. At the next set or weave two ends *e e* or écru are brought up, and the carpet at this point has a face of solid écru. At the next set or weave two brown ends *b b* are brought up, the face of the fabric showing solid brown. At the next set or weave a green end *g* and an écru end *e* are brought up, showing a moresque or combination of green and écru. At the next set or weave a Moresque combination of green and brown, *g* and *b*, are brought to the face of the fabric. At the next the brown and écru Moresque effect is secured by bringing up into the loop the ends *b* and *e*. In the next succeeding weaves three ends *g*, *b*, and *e*, or a combination of green, brown, and écru, are brought up. There can thus be secured from three different-colored yarns seven coloring effects—namely, solid green, solid brown, solid écru, moresque of green and brown, moresque of green and écru, moresque of brown and écru, and the combination of three colors, green, brown, and écru. It is to be understood that the seven colors appear according to a predetermined design, which design is cut upon the cards of the jacquard in a manner well known in the art, and that the particular arrangement or design shown in Figs. 2 and 3 may be varied indefinitely without departing from the spirit of our invention.

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A Brussels-carpet fabric having its loop or pile threads arranged in six frames, each frame containing a single end, and the six ends being arranged in pairs of different colors, the ends being brought separately to the face of the fabric, as required, whereby in one set or weave a plurality of ends of required color or colors are looped upon the face of the fabric, the remaining ends being buried in the fabric.

2. A Brussels-carpet fabric having the usual back of jute and binder warp-threads, and the weft or shuttle threads, said fabric provided with pile or loop warp-threads arranged in sets of six single ends, the ends being brought to the face of the fabric, when required, independently of the other ends and all arranged so that in one set or weave two or three ends are looped, as required, and the remaining four or three ends are buried in the fabric.

In testimony whereof we have hereunto set our signatures in the presence of two subscribing witnesses.

RICHD. S. COOKSON.
HENRY COOKSON.

Witnesses:
J. WALTER DOUGLASS,
THOMAS M. SMITH.