Feb. 13, 1951 C. A. CARNEY 2,541,500

COMPOSITE YARN AND FABRIC MADE THEREFROM

Filed Sept. 27, 1948 2 Sheets-Sheet 1

FIG. 1

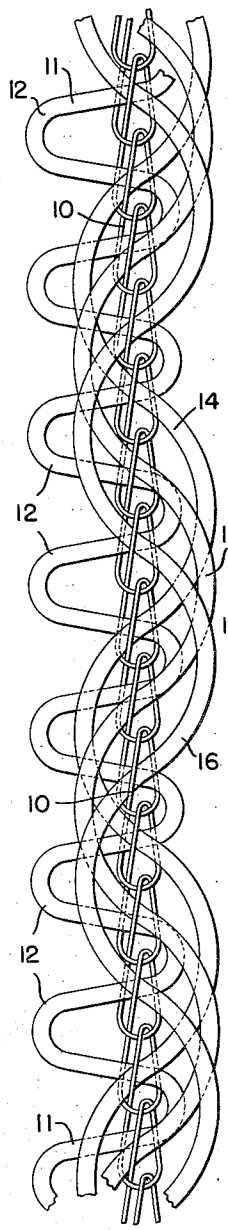



FIG. 2

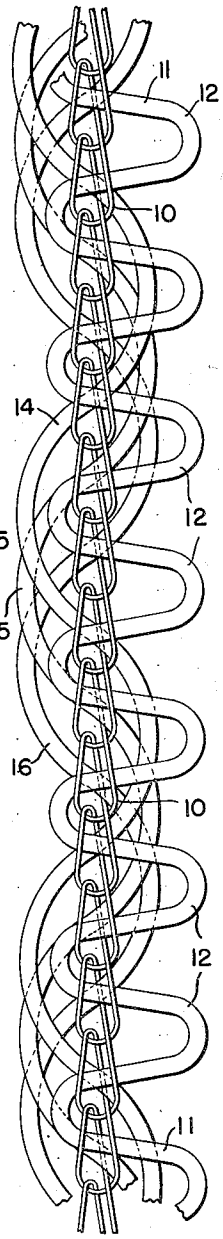



FIG. 3

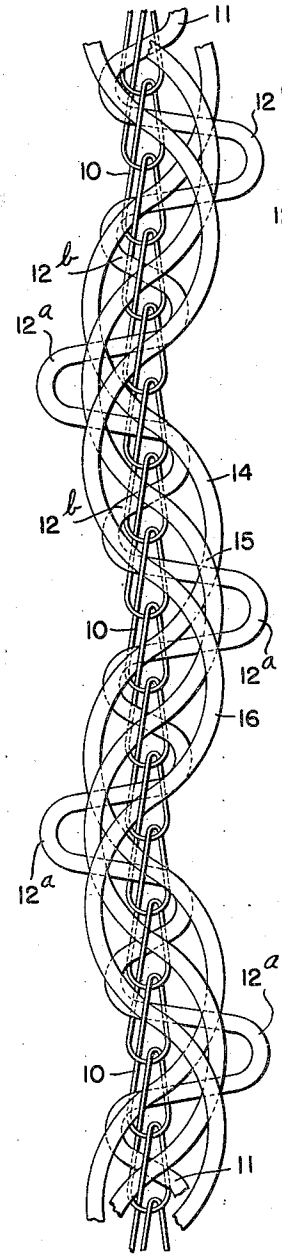
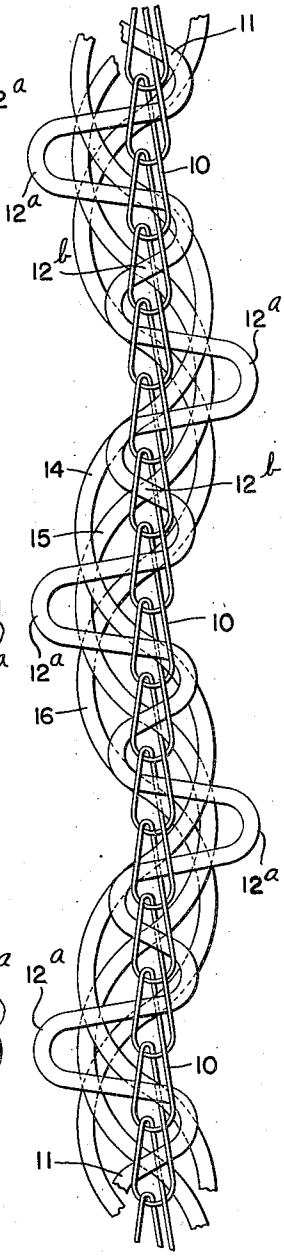



FIG. 4




INVENTOR.
CORNELIUS A. CARNEY

BY

Jas. C. Nobensmith

ATTORNEY.

Feb. 13, 1951 C. A. CARNEY 2,541,500

COMPOSITE YARN AND FABRIC MADE THEREFROM

Filed Sept. 27, 1948 2 Sheets-Sheet 2

FIG. 5

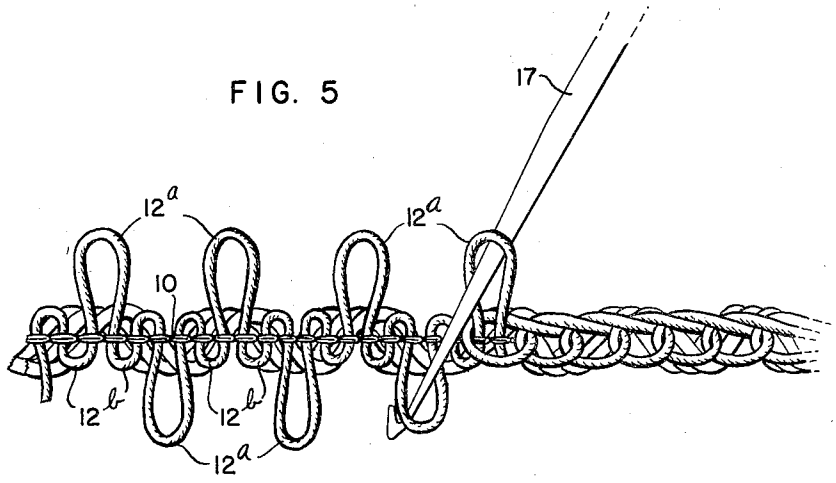
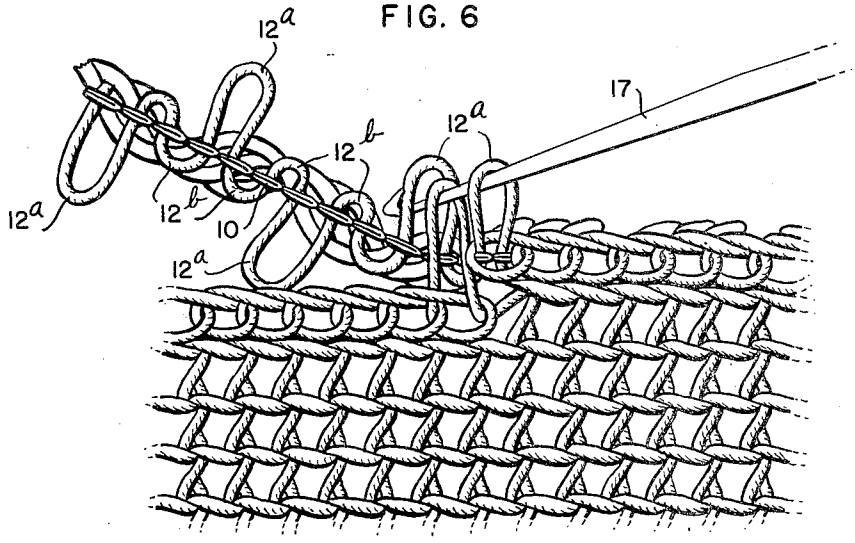



FIG. 6




*INVENTOR.*
CORNELIUS A. CARNEY

*BY*
Jas. C. Hobenschild

ATTORNEY.

Patented Feb. 13, 1951

2,541,500

# UNITED STATES PATENT OFFICE

2,541,500

## COMPOSITE YARN AND FABRIC MADE THEREFROM

Cornelius A. Carney, Philadelphia, Pa.

Application September 27, 1948, Serial No. 51,343

7 Claims. (Cl. 66—202)

1

This invention relates to a novel form of composite yarn, and a fabric made therefrom, said yarn being provided with a plurality of spaced loops whereby the same may be readily and easily knitted into a novel and useful fabric.

In my previous application for Letters Patent filed July 21, 1948, Serial No. 39,838, there is shown and described a novel form of composite yarn by means of which persons of relatively little skill may readily knit the same, preferably by crocheting, into fabrics which may have various types of face formation, and which yarn could be readily and inexpensively made on an ordinary warp knitting machine.

The present invention relates more particularly to a specific form of composite yarn of the same general type as that shown in my previous application, by means of which a novel fabric may be knitted by persons of relatively little skill, which fabric when knitted will have a peculiar face formation, as well as good wearing qualities.

The principal object of the present invention is to provide a novel composite yarn of the character aforesaid by means of which a desirable fabric may be readily made by relatively unskilled persons.

A further object of the present invention is to provide a novel fabric, adapted for use as carpets, couch covers, upholstery cloths and for other purposes.

The nature and characteristic features of the present invention will be more readily understood from the following description, taken in connection with the accompanying drawings forming part hereof, in which:

Figure 1 is an elevational view, enlarged, and to a certain extent diagrammatic, illustrating a simple form of composite yarn, embodying the main features of the present invention, the yarn in this instance being of a form in which the knitting loops, of the type shown and described in my previous application for Letters Patent hereinbefore referred to, are all disposed to one side of the median line of the binder chain;

Fig. 2 is an underneath view of the yarn shown in Fig. 1;

Fig. 3 is a view similar to Fig. 1 illustrating another form of the yarn in which the knitting loops are disposed, at regular intervals, on opposite sides of the median line of the binder chain;

Fig. 4 is an underneath plan view of the yarn as shown in Fig. 3;

Fig. 5 is a view illustrating the manner of

2

knitting the composite yarn shown in Figs. 3 and 4 into a foundation chain, or first course of the fabric, by means of an ordinary crochet hook; and

Fig. 6 is a similar view showing the formation of the novel fabric of the present invention at a later stage.

It should, of course, be understood that the description and drawings herein are illustrative merely, and that various modifications and changes may be made in the structures and procedures disclosed without departing from the spirit of the invention.

Referring now more particularly to Figs. 1 and 2 of the drawings, as in my previous application for Letters Patent, the basis of the various forms of the composite yarn, in each instance, comprises a strand 10 knitted on a single needle of a warp knitter, forming the usual chain binder stitch made by a warp knitter needle. It will, of course, be understood that the strand 10 may be a single strand, or the same may comprise a plurality of strands arranged either side by side or twisted about each other.

Into a bight of the chain stitch formation, upon each manipulation of the needle, a strand 11 is fed back and forth crosswise to provide, on one side of the median line provided by the chain, a plurality of knitting loops 12, said loops being preferably made of cotton or other relatively inexpensive fibre.

There is also provided a plurality of face forming strands 14, 15 and 16, each preferably made of a more expensive fibre such, for example, as wool, although in some instances, if the fabric is to be all cotton or other fibre, then the strands for forming the knitting loops 12 and the face forming strands 14, 15 and 16 may all be made of such material.

The yarn carriers of the warp knitter are so operated as to cause the face forming strands 14, 15 and 16 to be successively carried from one side to the other of the binder chain, and as the cross-over is made the particular strand being fed across is, in each instance, bound into the bight of the binder chain stitch over the strand 11 which forms the knitting loops 12.

It will be noted that in the composite yarn made in this manner, in which there are three face forming strands, each of said strands 14, 15 and 16 will respectively be bound in the binder chain on each third stitch thereof, and that the strands 14, 15 and 16 will each be disposed in sinuous form with respect to the binder chain.

In the form of the composite yarn shown in

Figs. 3 and 4 of the drawing, the manipulation and disposition of the face forming strands 14, 15 and 16 is the same as that in Figs. 1 and 2, but in the composite yarn shown in these figures there is a somewhat different disposition of the strand 11 which forms the knitting loops 12a. In this instance, the strand 11 is carried back and forth and the knitting loops 12a are disposed on both sides of the median line of the chain stitch formation with an intermediate reversal of the yarn feed, as at 12b, between each alternate knitting loop 12a.

By this arrangement the knitting loops 12a will not only be disposed alternately on each side of the median line of the binder chain, thereby to provide a more symmetrical arrangement, but the knitting loops 12a will be spaced lengthwise to a greater extent which in the formation of the fabric will, in some instances, be preferred by the user.

While in each of the forms of the composite yarn hereinbefore shown and described, three face forming strands 14, 15, and 16, are employed it will, of course, be readily understood that the number of such strands employed for a particular composite yarn will differ according to the desire of the maker, depending upon the character of the fabric to be ultimately made by the knitting of the yarn into the same.

The manner of use of the several forms of composite yarn, hereinbefore described, to make the finished fabric therefrom, is substantially as that shown and described in my previous application for Letters Patent hereinbefore referred to, and comprises the formation of a basic chain by the manipulation of the hook end of a crochet hook 17 through the successive knitting loops 12, or 12a, of the composite yarn proceeding in the same manner as when a simple ordinary yarn is knitted into a basic chain by means of a crochet hook or otherwise.

After the basic chain of the fabric is first formed by successively pulling the knitting loops 12 or 12a, as the case may be, through each other as illustrated in Fig. 5 of the drawings, the operation continues in a manner similar to that of ordinary knitting.

In Fig. 6 of the drawings there is shown a portion of a fabric in which the knitting has progressed showing how successive loops of the composite yarn are pulled through the preceding loop, as well as through the strand of a chain in the preceding course.

It will be understood by those familiar with the art that the yarn of the present invention may be used in the same manner as that shown and described in my previous application for Letters Patent, and that fabrics of any desired size may be readily made by first knitting the composite yarn into relatively small units and thereafter securing sets of said units to each other by interknitting the same with a plain yarn.

Furthermore, by the use of the yarn of the present invention, various shapes and effects may be obtained by adding and dropping stitches in a manner as is done when knitting with plain yarns.

I claim:

1. A composite yarn to be used for knitting into a fabric, said yarn comprising a binder chain, a knitting strand, and a plurality of face forming strands, the knitting strand being of sinuous form and having portions bound into bights of the binder chain and other portions providing a series of spaced loops of predetermined and sufficient size to be interknitted into a fabric to form the ground cloth thereof, and the face forming strands passing successively from one side to the other of the binder chain and being respectively bound into successive bights of the binder chain as each strand is crossed over from one side to the other.



2. A composite yarn to be used for knitting into a fabric, said yarn comprising a binder chain, a knitting strand, and a plurality of face forming strands, the knitting strand being of sinuous form and having portions bound into bights of the binder chain and other portions providing a series of spaced loops of predetermined and sufficient size to be interknitted into a fabric to form the ground cloth thereof, said loops being disposed on at least one side of the median line of the binder chain, and the face forming strands passing successively from one side to the other of the binder chain and being respectively bound into successive bights of the binder chain as each strand is crossed over from one side to the other.

3. A composite yarn to be used for knitting into a fabric, said yarn comprising a binder chain, a knitting strand, and a plurality of face forming strands, the knitting strand being of sinuous form and having portions bound into bights of the binder chain and other portions providing a series of spaced loops of predetermined and sufficient size to be interknitted into a fabric to form the ground cloth thereof, said loops being alternately disposed on each side of the median line of the binder chain, and the face forming strands passing successively from one side to the other of the binder chain and being respectively bound into successive bights of the binder chain as each strand is crossed over from one side to the other.

4. A composite yarn to be used for knitting into a fabric, said yarn comprising a binder chain, a knitting strand, and a plurality of face forming strands, the knitting strand being of sinuous form and having portions bound into bights of the binder chain and other portions providing a series of spaced loops of predetermined and sufficient size to be interknitted into a fabric to form the ground cloth thereof, said loops being alternately disposed on each side of the median line of the binder chain, and the face forming strands being bound into bights of the binder chain.

5. A fabric made by interknitting the loops of a composite yarn, said yarn comprising a binder chain, a knitting strand, and a plurality of face forming strands, the knitting strand being of sinuous form and having portions bound into bights of the binder chain and other portions providing a series of spaced loops of predetermined size knitted into the fabric to form the ground cloth thereof, and the face forming strands passing successively from one side to the other of the binder chain and respectively bound into successive bights of the binder chain as each strand is crossed over from one side to the other.

6. A fabric made by interknitting the loops of a composite yarn, said yarn comprising a binder chain, a knitting strand, and a plurality of face forming strands, the knitting strand being of sinuous form and having portions bound into bights of the binder chain and other portions providing a series of spaced loops of predetermined size knitted into the fabric to form the ground cloth thereof, said loops being alternately disposed on each side of the median line of the binder chain, and the face forming strands passing successively from one side to the other of the binder chain and respectively bound into succes-

sive bights of the binder chain as each strand is crossed over from one side to the other.

7. A fabric made by interknitting the loops of a composite yarn, said yarn comprising a binder chain, a knitting strand, and a plurality of face forming strands, the knitting strand being of sinuous form and having portions bound into bights of the binder chain and other portions providing a series of spaced loops of predetermined size knitted into the fabric to form the ground cloth thereof, said loops being alternately disposed on each side of the median line of the binder chain, and the face forming strands being



bound into bights of the binder chain as each strand is crossed over from one side to the other.

CORNELIUS A. CARNEY.


## REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 2,213,720 | Seim | Sept. 3, 1940 |
| 2,416,758 | Knowles | Mar. 4, 1947 |