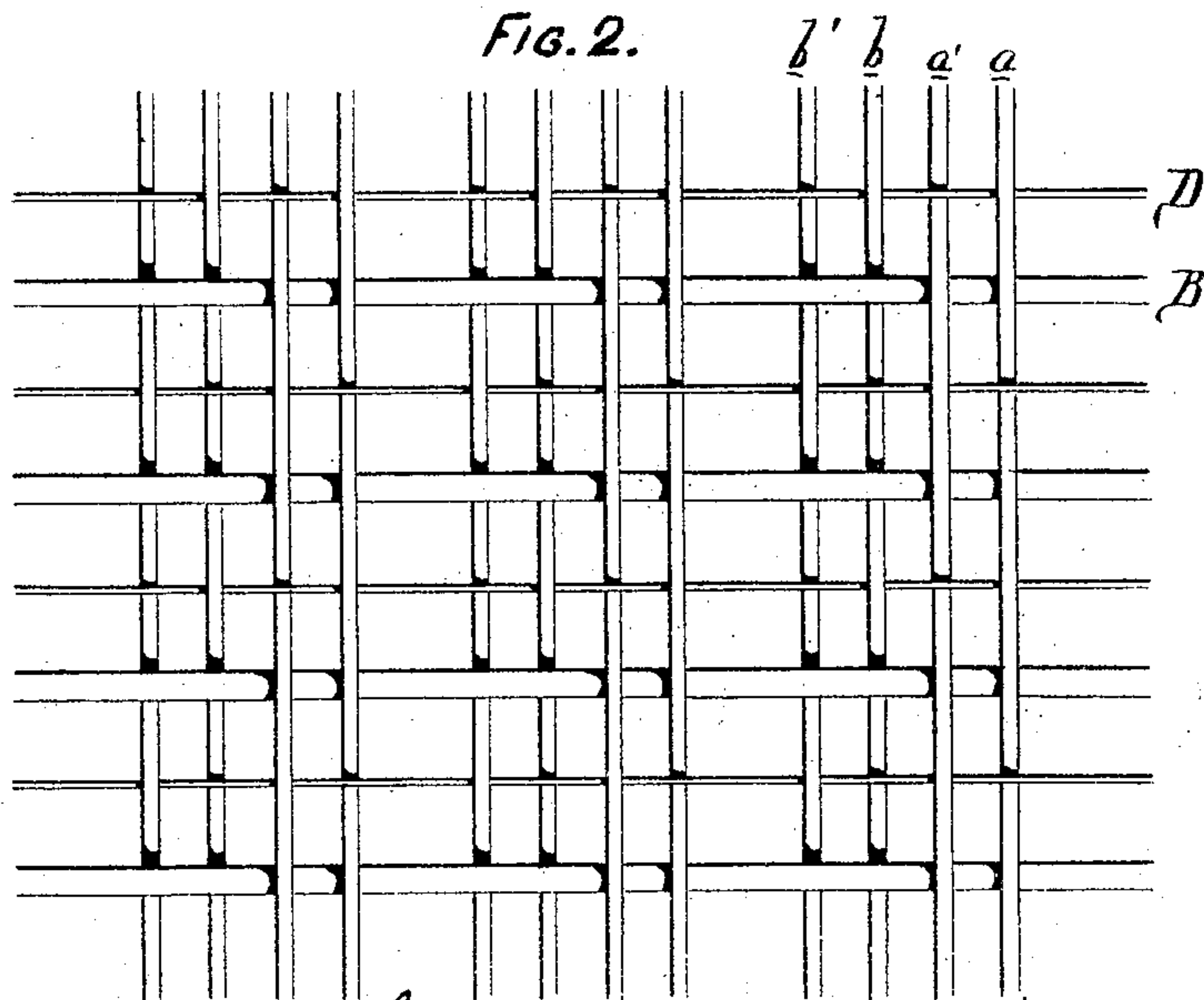
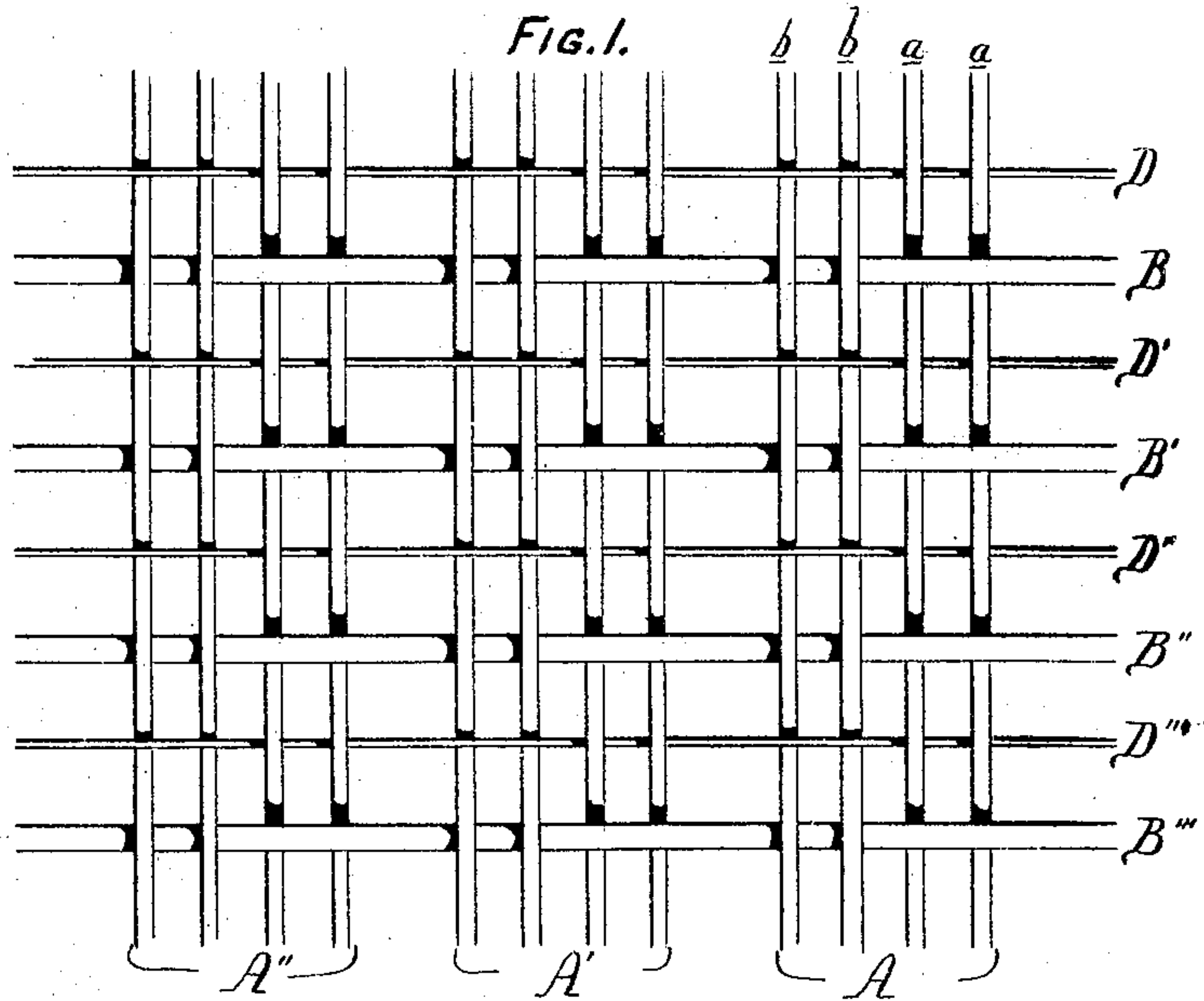


W. Wallace,

Carpet Fabric

No. 104,232.

Patented June 14, 1870.



WITNESSES { *Wm. A. Steel.*
Jas. B. Harding.

A — *William Wallace*
by his Atty.
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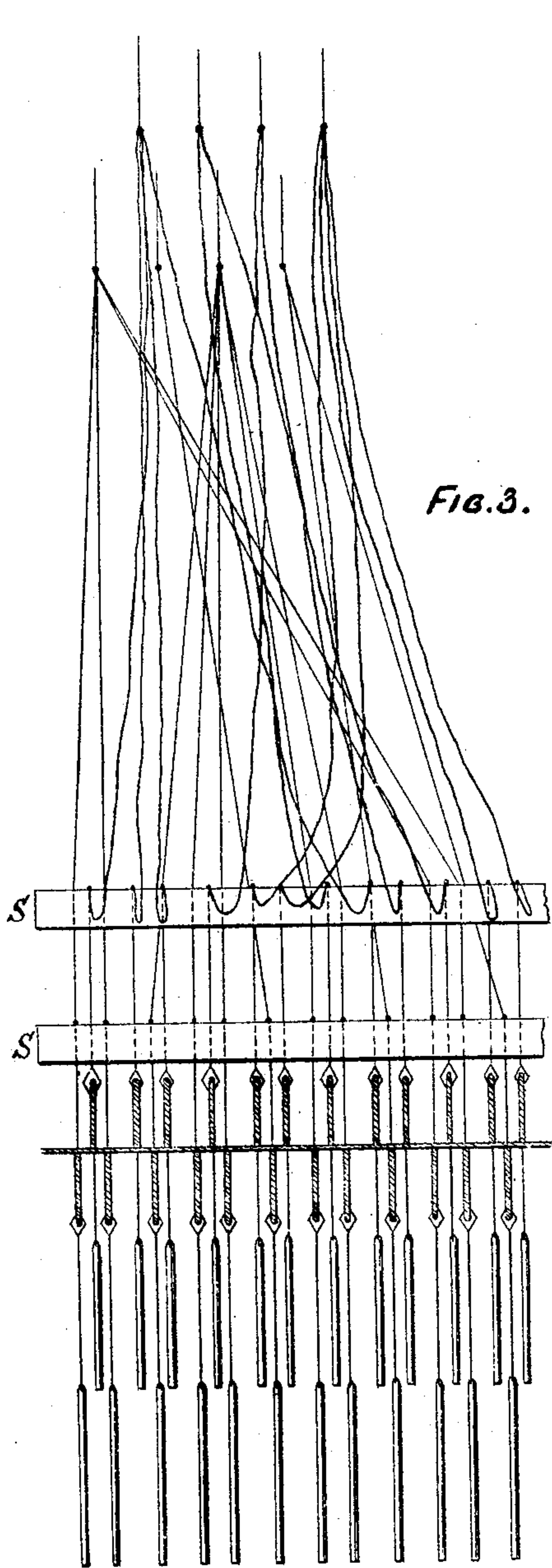


FIG. 3.

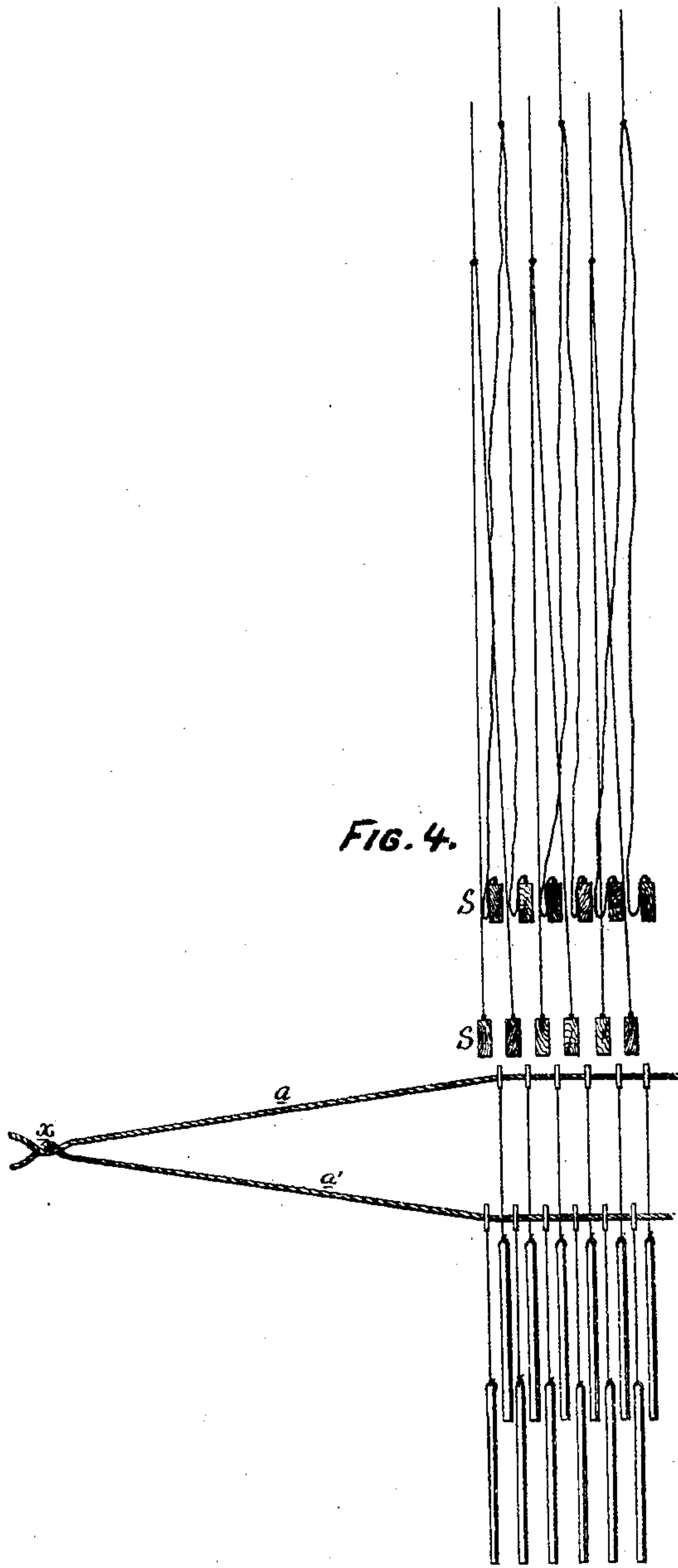


FIG. 4.

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Geo. B. Harding.

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UNITED STATES PATENT OFFICE.

WILLIAM WALLACE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND CHARLES McALLISTER, OF SAME PLACE.

IMPROVEMENT IN CARPET FABRIC.

Specification forming part of Letters Patent No. **104,232**, dated June 14, 1870.

To all whom it may concern:

Be it known that I, WILLIAM WALLACE, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improved Carpet, of which the following is a specification:

My invention relates to an improvement in what are known as "damask carpets;" and my improved carpet is composed of the warp-threads and alternate thick and thin filling, or weft-threads, usually employed in making carpets of this class. The warp-threads, however, in producing my improved carpet, are raised in couples for the thick filling, and singly for the thin filling, as fully explained hereinafter, so that the fabric may be more compact in texture, and may have a finer surface than ordinary damask carpet, without the consumption of more material than the latter requires.

Figure 1, Drawing No. 1, is a diagram representing the disposal of the threads in making an ordinary damask carpet; Fig. 2, a diagram illustrating the mode of making my improved carpet; and Figs. 3 and 4, Drawing No. 2, are views representing the harness employed in carrying out my invention.

In order that my invention may be more readily understood, I will first proceed to describe the mode of disposing of the weft and warp threads in weaving ordinary damask carpets, reference being had to Fig. 1, Drawing No. 1, which represents a portion of such a carpet, with the threads separated or not beaten up.

The warp of an ordinary damask carpet consists of a series of woolen threads arranged in sets, four threads to each set, these four threads passing through one space of the reed in weaving. Thus, in Fig. 1, A represents one set of four warp-threads; A', an adjoining set, and A'' a third set.

These warp-threads, two of which may be of one color and two of another color, are controlled by the usual Jacquard apparatus, which is too well known to need description here. It should be understood, however, that in weaving ordinary damask carpets two warp-threads have been heretofore invariably lifted together, both for the thick filling and thin filling. For instance, the two threads *a a* of

the set A have been lifted together, and the same with the two threads *b b* of the same set, so that in weaving an ordinary damask carpet the four warp-threads of each set may be considered two double threads.

The weft-threads consist of a series of thick filling-threads, B, B', B'', and B''', and thin filling-threads, D, D', D'', and D''', arranged alternately, as shown in Fig. 1, the thick filling-threads serving to impart substance to the carpet, and the thin threads serving to impart strength as binding-threads.

It will be observed, on referring to this illustration (Fig. 1) of a common damask carpet, that the thin filling-thread D passes under the two warp-threads *a a* of the set A, and over the two warp-threads *b b* of the same set, the adjoining thick filling-thread B passing over the warp-threads *a a* and under the warp-threads *b b*, and this disposal of the threads is continued throughout the fabric, providing the latter be a common plain carpet of one color.

If the warp-threads be of different colors, (the two threads *a a* of the set A, for instance, being green, and the two threads *b b* of the same set red,) the disposal of the warp-threads by the Jacquard apparatus, for the purpose of producing patterns, will, of course, differ from the arrangement shown, according to the character of the pattern; but the warp-threads of ordinary damask carpets have heretofore been invariably raised in couples, and it is this plan of raising two adjoining threads simultaneously, both for the thick and thin filling, which renders the carpet of so open a texture that a lodgment for dust and dirt is afforded, while the threads of one color beneath can be distinguished from above through the interstices between threads of another color; consequently, the pattern of the carpet is rendered more or less spotted and unsightly.

The aim of my invention, which I will now proceed to describe, has been to overcome these defects in weaving damask carpets.

On reference to Fig. 2, which illustrates my improved carpet with the threads separated, it will be observed that the warp consists of a series of sets of threads, four threads in each set, the weft consisting of alternate thick and thin filling-threads; in fact, precisely the same

threads are employed as in making the common damask carpet described above.

For the passage of the thick filling-threads the warp-threads are raised in couples, as in the ordinary carpet; but for the passage of the thin filling-threads the warp-threads are raised singly, or, in other words, the double warp-threads are separated or split for the passage of the thin filling-threads.

Fig. 2, Drawing No. 1, represents the disposal of the threads of my improved carpet, providing that the same be of one color throughout. On reference to this figure, it will be observed that the thin filling-thread *D* passes under the warp-thread *a*, over the warp-thread *a'*, under the thread *b*, and over the thread *b'*, while the adjoining thick filling-thread passes under the two threads *a* and *a'*, and over the two adjoining threads *b* and *b'*.

It will be understood that when a pattern is required to be woven with colored threads the latter may be arranged in a manner differing from that shown in Fig. 2; but the same practice will be observed of controlling the warp-threads—separately for the thin filling, and in couples for the thick filling.

It will now be seen that the difference between the old damask carpet and my improved carpet is simply this: In the former the warp-threads are raised in couples for both the thick and thin filling, while in the latter the warp-threads are raised in couples for the thick filling, and singly or independently of each other for the thin filling.

This plan of operating the warp-threads involves the necessity of employing peculiar mechanism, for, while the ordinary Jacquard apparatus will serve to raise the threads in couples for the thick filling, other appliances are necessary for operating the single threads for the thin filling.

I will briefly describe the mechanism which I have employed for carrying my invention into effect, reference being had to Drawing No. 2, in which Figs. 3 and 4 show the harness, the lines *a* and *a'* representing the sep-

arated warp-threads, and *x* being the point where the weft is beaten up.

I dispense with the usual "comber-board" of the Jacquard apparatus, and, in place of the same, use the twelve shafts *S S*, all of which are connected to the warp-thread by the harness, in the usual manner, and these shafts are controlled by mechanism operated from any working part of the loom independently of the usual Jacquard mechanism, the duty of which is to control the double warp-threads for the thick filling, while the single threads for the thin filling are controlled by the shafts *S* and the independent mechanism which operates the same.

The harness of the ordinary Jacquard apparatus passes the shafts *S* freely, but has knots with which these shafts come in contact when elevated.

As different mechanical devices may be employed for carrying my invention into effect, and as the above-described mechanism will form the subject of a separate application for a patent, the above explanation will suffice for those familiar with the art of weaving to understand how the warp-threads may be raised in couples for the thick filling and singly for the thin filling.

It is this peculiar operation and disposal of the warp-threads in respect to the thick and thin filling-threads which render my improved carpet more compact in texture, and finer as regards its surface, than ordinary damask carpets.

I claim—

The carpet fabric herein described, in which adjoining warps are raised in couples for the introduction of a thick filling, and such couples are afterward divided for the passage of a fine weft between them.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

Witnesses: WILLIAM WALLACE.
WM. A. STEEL,
LOUIS BOSWELL.