

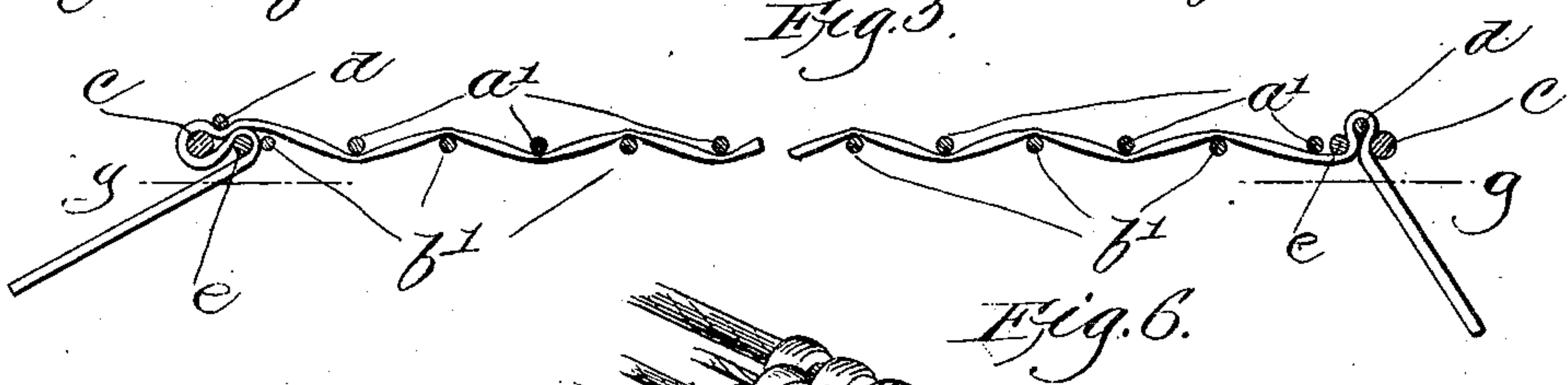
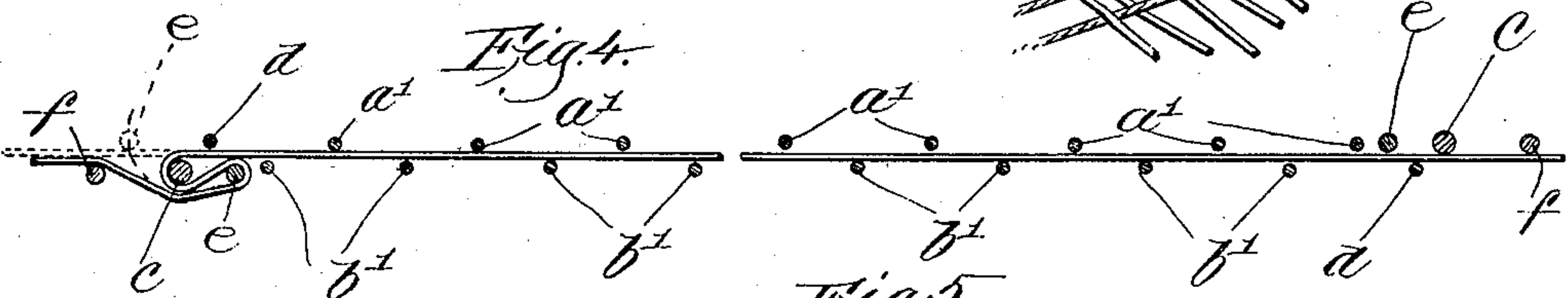
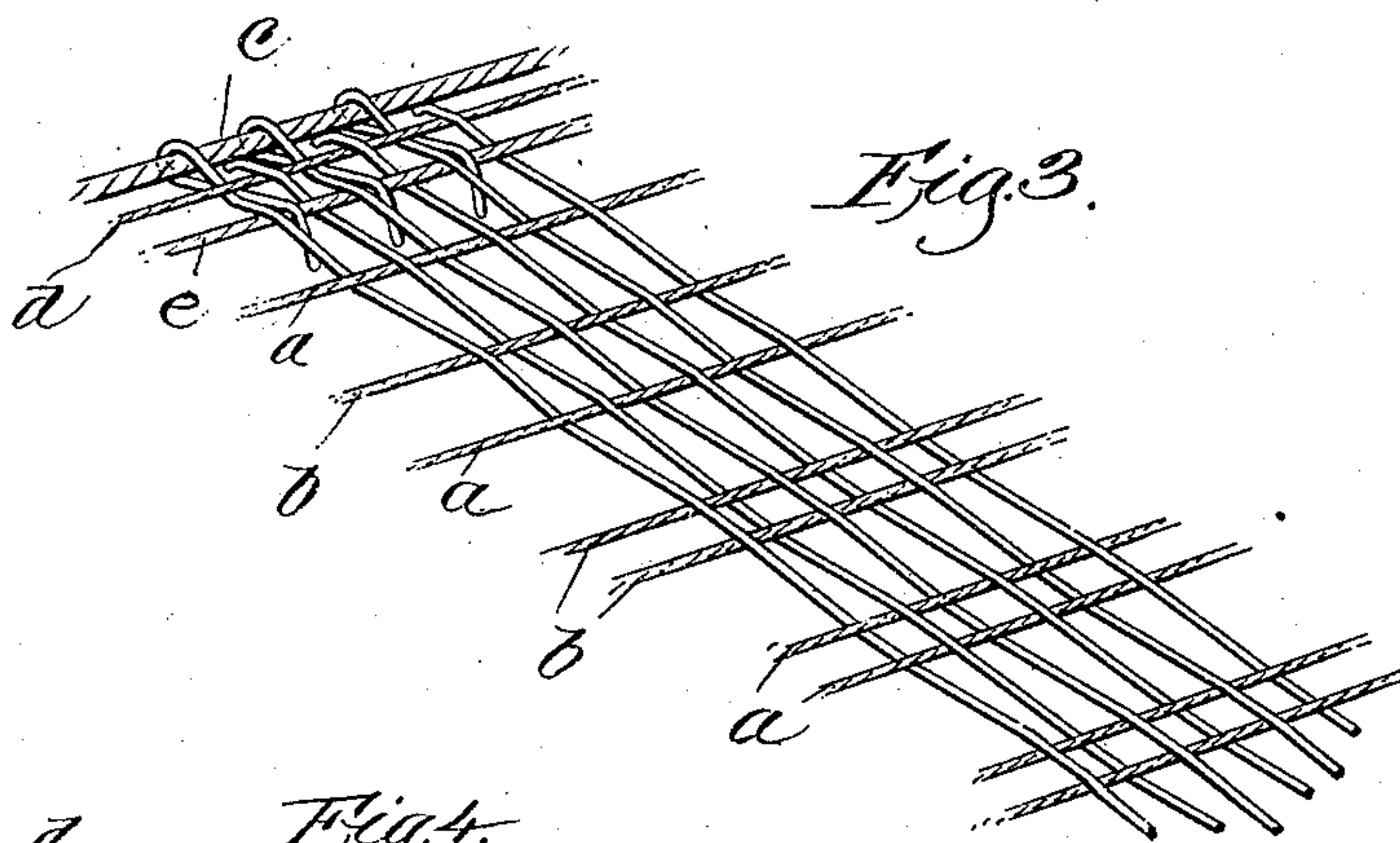
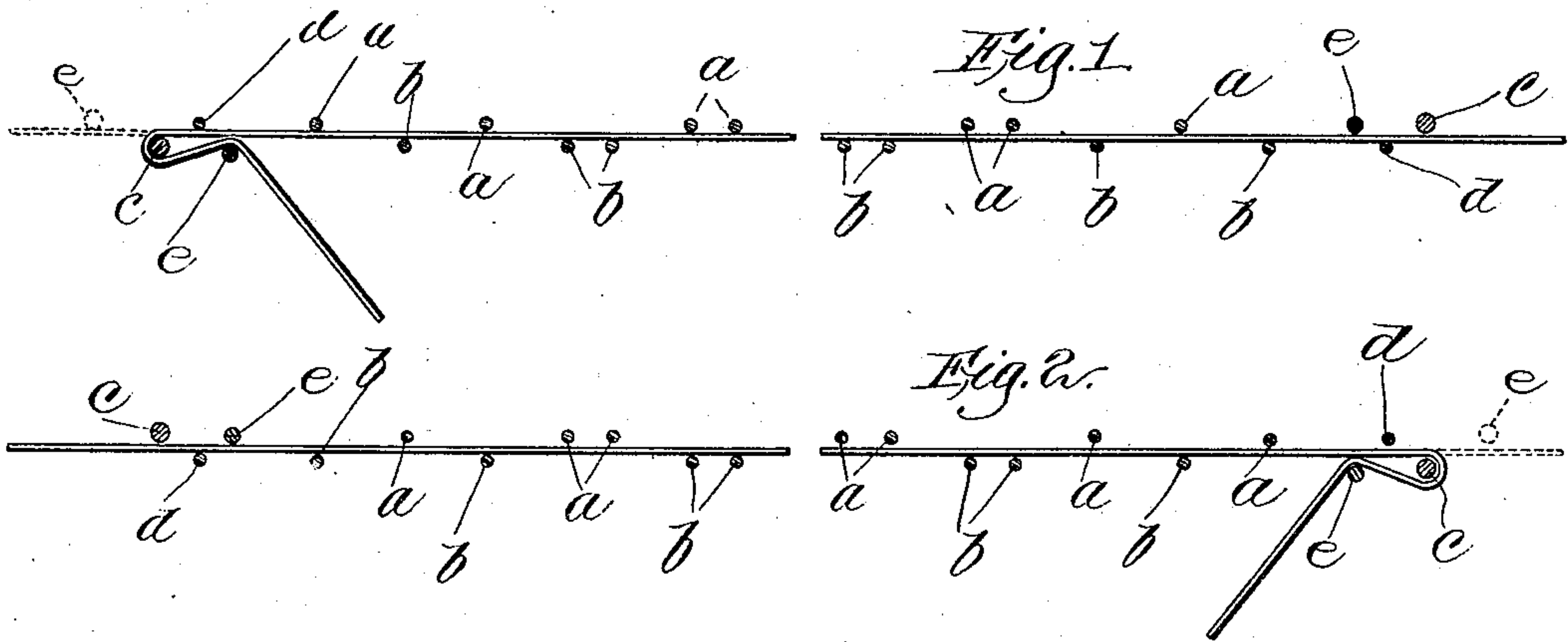
No. 842,053.

PATENTED JAN. 22, 1907.

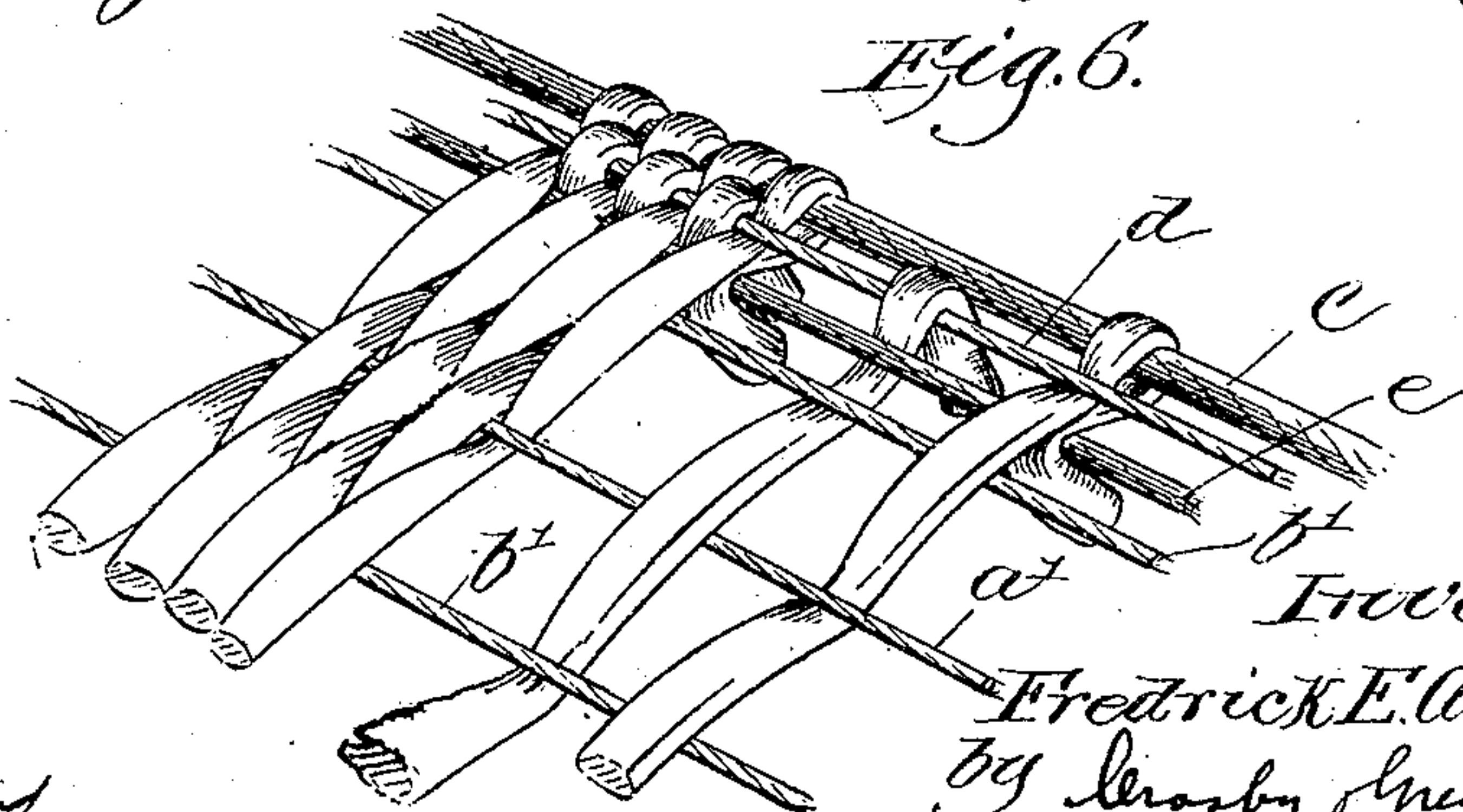
F. E. ARROUQUIER.

STRAW MATTING.

APPLICATION FILED AUG. 13, 1903.



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UNITED STATES PATENT OFFICE.

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STRAW MATTING.

No. 842,053.

Specification of Letters Patent.

Patented Jan. 22, 1907.

Application filed August 13, 1903. Serial No. 169,323.

To all whom it may concern:

Be it known that I, FREDRICK E. ARROU-
QUIER, a citizen of the United States, resid-
ing at Westbrook, county of Cumberland,
5 State of Maine, have invented an Improve-
ment in Straw Matting, of which the follow-
ing description, in connection with the ac-
companying drawings, is a specification, like
letters on the drawings representing like
10 parts.

This invention relates to the structure or
weave of straw matting or similar fabrics
where the weft consists of short lengths,
such as straws, grasses, &c.; and it more par-
15 ticularly relates to the construction of the
selvage whereby the edges of the matting are
finished in a strong, even, firm, and sightly
manner without any danger of unraveling.
The turned-in ends of the filling-straws all
20 appear upon the lower surface of the fabric,
and the construction is such that any undue
thickness at the edge is avoided.

In the drawings I have shown in a more or
less diagrammatic manner in an exaggerated
25 form for the purpose of clearness two differ-
ent weaves of straw matting in connection
with the selvage, which constitutes a feature
of the present invention.

Figure 1 represents a piece of matting,
30 showing the warps in cross-section and (with
the dotted lines) in substantially the posi-
tion they would occupy when the straw is
shot through the shed from the left, the full
line showing the end of the straw bent back
in the manner hereinafter described. Fig.
2 is a view similar to Fig. 1, but illustrating
the filling-straw shot through the shed
from the right-hand side of the loom. Fig.
3 is a view in perspective, illustrating in
40 somewhat open position the general arrange-
ment of the warps and straws in the com-
pleted matting. Fig. 4 is a view illustrating
in the same manner as Fig. 1 another form
of matting having substantially the same
45 selvage. Fig. 5 is a view showing the filling-
straw of Fig. 4 in about the position it
would occupy after beating up in the com-
pleted matting, and Fig. 6 is a perspective
view of a piece of matting formed as shown
50 in Figs. 4 and 5.

Referring first to Figs. 1, 2, and 3 of the
drawings, the warps forming the body of the
shed are lettered *a b*. The arrangement of

the warps thus lettered has nothing to do
with the structure of the selvage and may 55
be of any usual or desired form. They are
here shown as alternating in the center of the
matting two up, two down, two up, two
down, &c., with single warps alternating up
and down near the edges. The selvage- 60
cords *c*, usually larger than the warps, are
shown at each edge, and lying next thereto
are the warp-cords *d*, which, since they are
involved in the formation of the selvage
proper, I have herein termed "auxiliary" or 65
"supplemental" threads or cords. These
alternate in position with the selvage-cords
c and, if desired, may be made slightly
smaller than the regular warps *a b*. Next
to the auxiliary or supplemental threads or 70
cords *d d* are the cords *e e*, which by reason of
the manner in which they form the selvage I
have herein termed "turn-in" threads or
cords.

It is unnecessary to describe the manner of 75
weaving a fabric such as herein illustrated,
since it is well known to those skilled in the
art and may be formed in any usual or de-
sired manner. Since, however, the straws
usually employed are considerably larger at 80
one end than at the other, it is desirable to
feed the straws alternately first from one side
and then from the other, with the butts lying
in opposite directions in order that the mat-
ting may be woven evenly. It is also pref- 85
erable to turn over only the smaller or thin-
ner end of the straw in forming the selvage,
since this is sufficient to hold the straw in
place and the turned end occupies a smaller
space. 90

The matting is shown in the drawings with
its face or right side uppermost; but it may
be woven with either side uppermost, and I
prefer to weave it with the wrong side upper-
most to facilitate the mechanical trimming 95
of the ends of the straws.

The turn-in thread or cord *e* is manipulated
by mechanism acting independently of the
mechanism for manipulating the warps and
in such a manner as to allow it to pass en- 100
tirely around the salvage-cord *c* from the
position shown in dotted lines in Figs. 1 and
2 to the position shown in full lines.

Prior to an insertion of a straw from the
left-hand side with its larger or coarser end 105
foremost the shed is opened, as shown in Fig.

1, with the turn-in cord *e* in the dotted-line position. In this position the straw passing under the turn-in cord lies out straight, as shown in the dotted lines. The turn-in cord is then operated to carry the smaller end of the straw around the selvage-cord *c* under the auxiliary or supplemental thread or cord *d* and into substantially the position shown in Fig. 1, when the turn-in cord *e* becomes a warp and in the next pick (see the left-hand end of Fig. 2) is woven into the fabric as a warp. The larger end of the straw is interwoven with the cords *e*, *d*, and *c*, acting as warps in the usual manner. When the straw is inserted from the right-hand side, as shown in Fig. 2, the operation is exactly the opposite of that described. In this manner the ends of the straws are alternately turned back at each edge of the fabric. The ends not turned back by the turn-in cord project downwardly from between the selvage-cord *c* and the auxiliary cord *d*. After beating up the projecting ends of the filling-straws are trimmed off close to the body of the fabric when the structure is substantially as shown in Fig. 3, allowance being made for the opening up in the drawing to show the arrangement of the warps and filling-straw.

It will be seen that the selvage is formed by the selvage-cord *c*, the auxiliary cord *d*, and the turn-in cord *e*, the ends of alternate straws when viewed from the top passing around and under the selvage-cord, under the auxiliary cord, and over the turn-in cord and at the ends are not interwoven with the body of the matting, but project downwardly into position where they will be readily trimmed off. There is thus formed a neat and smooth selvage without the appearance of the ends of the straws at the top surface.

In Figs. 4, 5, and 6 I have illustrated a similar form of matting in which the warps *a'* and *b'* alternate, one up and one down, throughout the width; but as in the previous case any variation in this arrangement desired may be made. I have shown in these latter figures the warp next adjacent the turn-in cord lying on the same side of the fabric as the turn-in cord itself, while in Figs. 1, 2, and 3 the corresponding warp is shown as lying on the opposite side from the turn-in cord. Either arrangement may be used as desired. I have also illustrated in connection with Fig. 4 two wires *ff*, one near each side of and parallel to the edge of the matting, which form no part of the matting itself, but are used in the weaving. These wires are so arranged as to hold the smaller ends of the filling-straws when the turn-in cord *e* is passing from the position which it has prior to the insertion of the straw to the position which it has in the completed fabric. It is found that by the use of the wires *ff* the accuracy of the action of the turn-in cord is assured, the end of the straw is kept under control,

and prevented from even accidentally becoming woven into the body of the matting, and, furthermore, the end of the straw is given a decided set in a direction back toward the selvage-cord, as shown in Fig. 5. In this latter figure the matting is represented with the filling-straw beaten up, and after the straw has passed away from the influence of the wires *ff* by reason of the winding-up of the completed matting on the loom. The downturned ends are then trimmed off close to the lower surface of the matting, as indicated at *g*. The smaller end of the straw *xx*, shown on the left-hand side of Fig. 5, owing to the action of the wire *f* while the turn-in cord was operating, remains set in a position substantially as indicated, and the opposite end of the straw projects downwardly and slightly outwardly from between the selvage-cord and the auxiliary cord *d*. The arrangement of the completed selvage is illustrated in perspective in Fig. 6, and it will be found that the selvage of the completed matting is smooth, strong, and compact.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A straw matting comprising filling-straws and the usual warp cords or threads, an auxiliary or supplemental thread or cord parallel to and between the selvage and next adjacent warp cord or thread, and a turn-in thread parallel to the auxiliary or supplemental thread or cord, the smaller ends of the filling-straws being passed around and under the selvage warp cord or thread and under and over the auxiliary and turn-in thread respectively, and protruding outwardly from the body of the matting between the turn-in thread and the next adjacent body-warp.

2. A straw matting comprising filling-straws and the usual warp cords or threads, an auxiliary or supplemental thread or cord parallel to and between the selvage and next adjacent warp cord or thread, and a turn-in thread parallel to the auxiliary or supplemental thread or cord, the smaller ends of the filling-straws being passed around and under the selvage warp cord or thread and under and over the auxiliary and turn-in threads, respectively, and being left with a set in the direction of the selvage-cord.

3. A straw matting comprising filling-straws and the usual warp cords or threads, an auxiliary or supplemental thread or cord parallel to and between the selvage and the next adjacent warp cord or thread, and a turn-in thread parallel to the auxiliary or supplemental thread or cord, the smaller ends of the filling-straws being passed around and under the selvage warp cord or thread and under and over the auxiliary and turn-in thread, respectively, the said turned-in end being bound and held in place by the next

succeeding pick of straw, and being left with a set in the direction of the selvage-cord.

4. A straw matting comprising filling-straws and the usual warp cords or threads,
5 an auxiliary or supplemental thread or cord between the selvage and next adjacent warp cord or thread, and a turn-in thread parallel to and adjacent the auxiliary or supplemental thread or cord, the smaller ends of
10 the filling-straws being passed around and under the selvage warp cord or thread and under and over the auxiliary and turn-in

thread, respectively, the turned-in end of the filling-straw being free from interweaving with the usual warp cords or threads between the selvages, and being left with a set
15 in the direction of the adjacent selvage-cord.

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

FREDRICK E. ARROUQUIER.

Witnesses:

JOHN D. KNOWLTON,
G. H. KNOWLTON.