

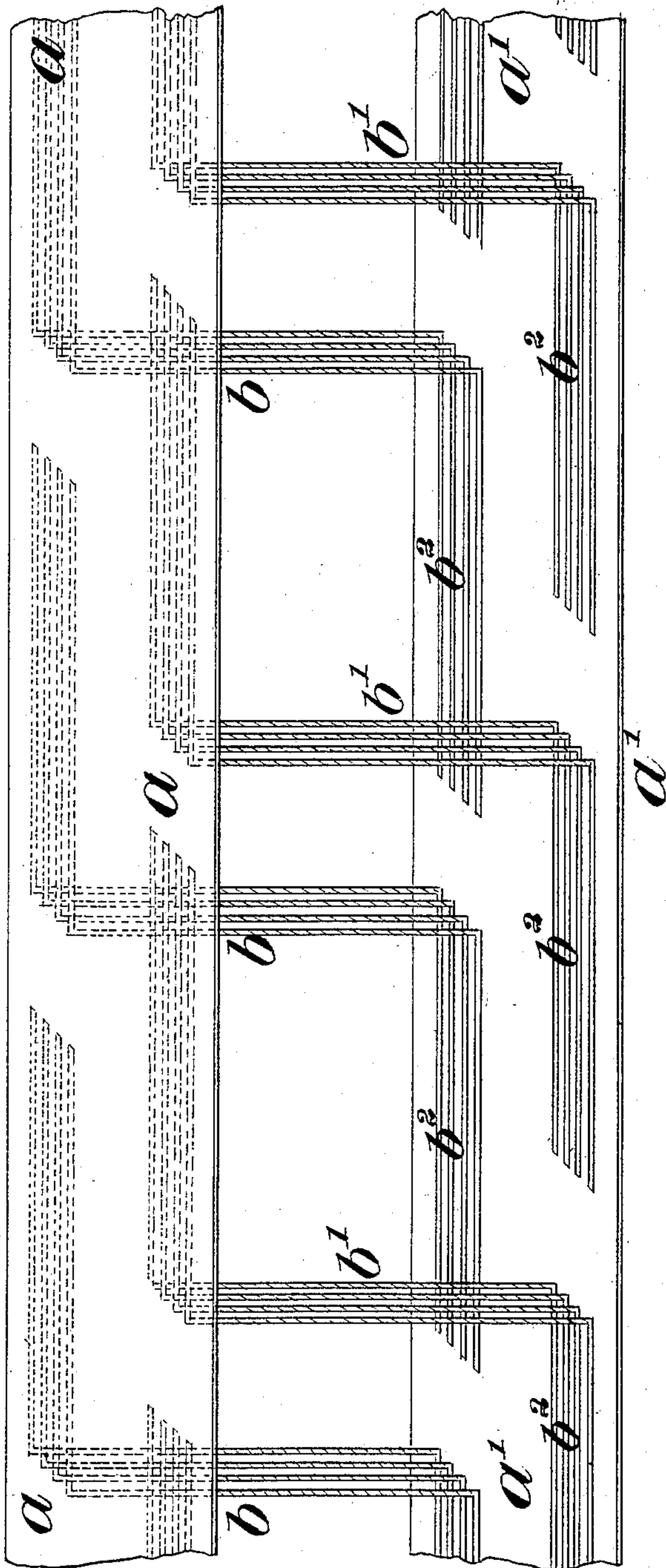
(No Model.)

J. CARR.

WOVEN TAPE LADDER FOR VENETIAN BLINDS.

No. 328,286.

Patented Oct. 13, 1885.



Witnesses:
Harry Drury
James J. Tobin

Inventor:
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By his attys.
Howden and Fry

UNITED STATES PATENT OFFICE.

JAMES CARR, OF MANCHESTER, COUNTY OF LANCASTER, ENGLAND.

WOVEN-TAPE LADDER FOR VENETIAN BLINDS.

SPECIFICATION forming part of Letters Patent No. 328,286, dated October 13, 1885.

Application filed February 16, 1883. Serial No. 85,337. (No model.) Patented in England July 8, 1882, No. 3,242.

To all whom it may concern:

Be it known that I, JAMES CARR, a subject of the Queen of Great Britain and Ireland, and residing at Manchester, county of Lancaster, England, small ware manufacturer, have
5 invented an Improved Woven-Tape Ladder for Venetian Blinds, (for which I have obtained a patent in Great Britain, No. 3,242, July 8, 1882,) of which the following is a specification.

10 The object of my invention is to construct a simple and economical form of what are termed "tape ladders" used in the construction of Venetian blinds to support the cross-slats thereof; and my invention may be said
15 to consist of an improvement on the woven tapes for Venetian blinds described in my British Patent No. 229 of 1869, in which patent the tapes are described as having cross-strips woven in the loom into and with the
20 longitudinal strips which run the length of the blinds, these cross-strips being woven in their proper relative positions to carry the slats. The objection to this form of tape ladder, however, was that in its construction it
25 required, in addition to the shuttles used to form the longitudinal tapes, other shuttles to form the short cross connecting-strips. In order to dispense with the use of these extra
30 shuttles I make the cross-strips of yarn or spun or twisted material, or previously made narrow tapes or braids, which are at their ends woven into the longitudinal tapes of the
35 ladder and extend from one tape to the other, but are not interwoven with weft in the formation of the ladder, except at the points of attachment to the tapes.

The figure in the accompanying drawing is a perspective view of a short length of my improved woven-tape ladder.

40 In this figure $a a'$ are the two broad longitudinal tapes of the ladder, and $b b'$ are the cross-strips, formed of yarns, taking the place of the cross-strips, which, in my patented form of ladder, were woven by means of special
45 shuttles during the weaving of the complete ladder.

In the drawing I have illustrated the cross-strips as each consisting of four strong yarns; but I may use fewer or more than four.

50 The two tapes $a a'$ are woven simultaneously in the loom, as in my patented invention; but

only the shuttles necessary for these two tapes are required. The yarns for the cross-strips b and b' are carried by suitable warp bobbins or holders, and are woven into the top and bottom tapes alternately, the portions of these
55 yarns which are to act as cross-strips being floated in the weaving instead of being woven either into the tape a or the tape a' .

The lines b^2 in the drawing indicate the portions of the yarn which are woven into the longitudinal tapes $a a'$. Shorter lengths of yarn float at the parts where the yarns return from one tape to the other, and have to be cut before the ladder can be opened for use, as in the
65 case of my old form of tape ladder.

In order that the yarns may be firmly held so that they will not draw out of the tapes $a a'$ under ordinary strain, it is desirable that the parts b^2 of the said yarns woven into the
70 longitudinal tapes a should be sufficiently long that the wefts of those tapes may have a firm hold on the ends of the yarns.

In the example shown in the drawing, the tape ladder is provided with two sets of cross
75 strips or yarns, b and b' , alternating with each other; but I do not wish to confine myself to this alternating arrangement, although I consider it the best and as giving the strongest
80 tape ladder.

I may use any kind of yarn or twisted or braided material or narrow tapes which have been previously woven, the object being simply to dispense with the necessity of weaving the cross-strips during the formation of the
85 tape ladders, as described in my above-mentioned patent.

I claim as my invention—

The herein-described tape ladder for Venetian blinds, consisting of the longitudinal tapes
9 $a a'$, with cross-strips $b b'$, formed separately, but having their ends woven into the weft of the longitudinal tapes during the weaving of the tapes, all substantially as set forth.

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

JAMES CARR.

Witnesses:

EDWARD K. DUTTON,
DAVID FULTON.