

G. K. WINCHESTER.
BRAIDING MACHINE.

No. 31,061.

Patented Jan. 1, 1861.

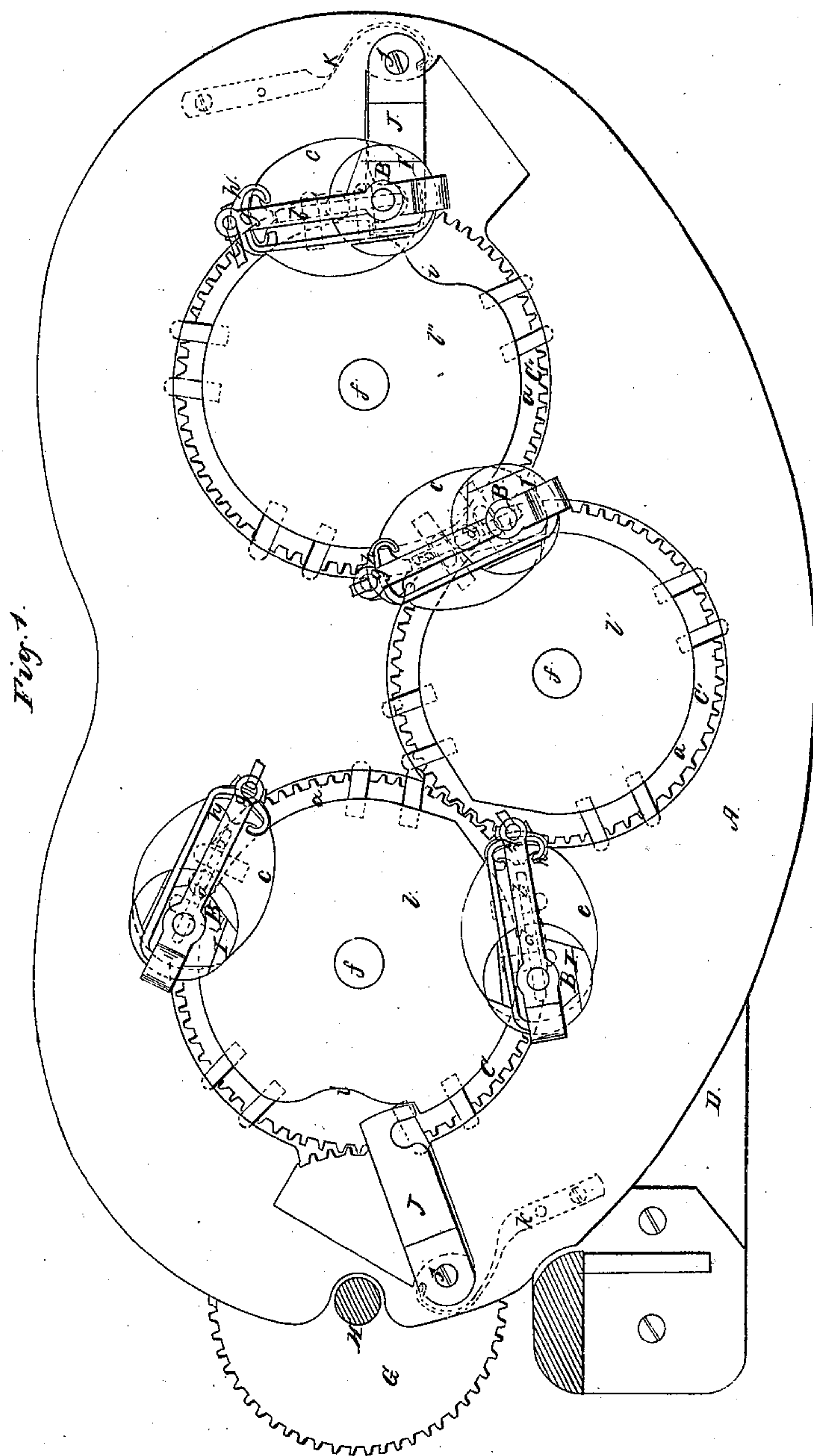


Fig. 1.

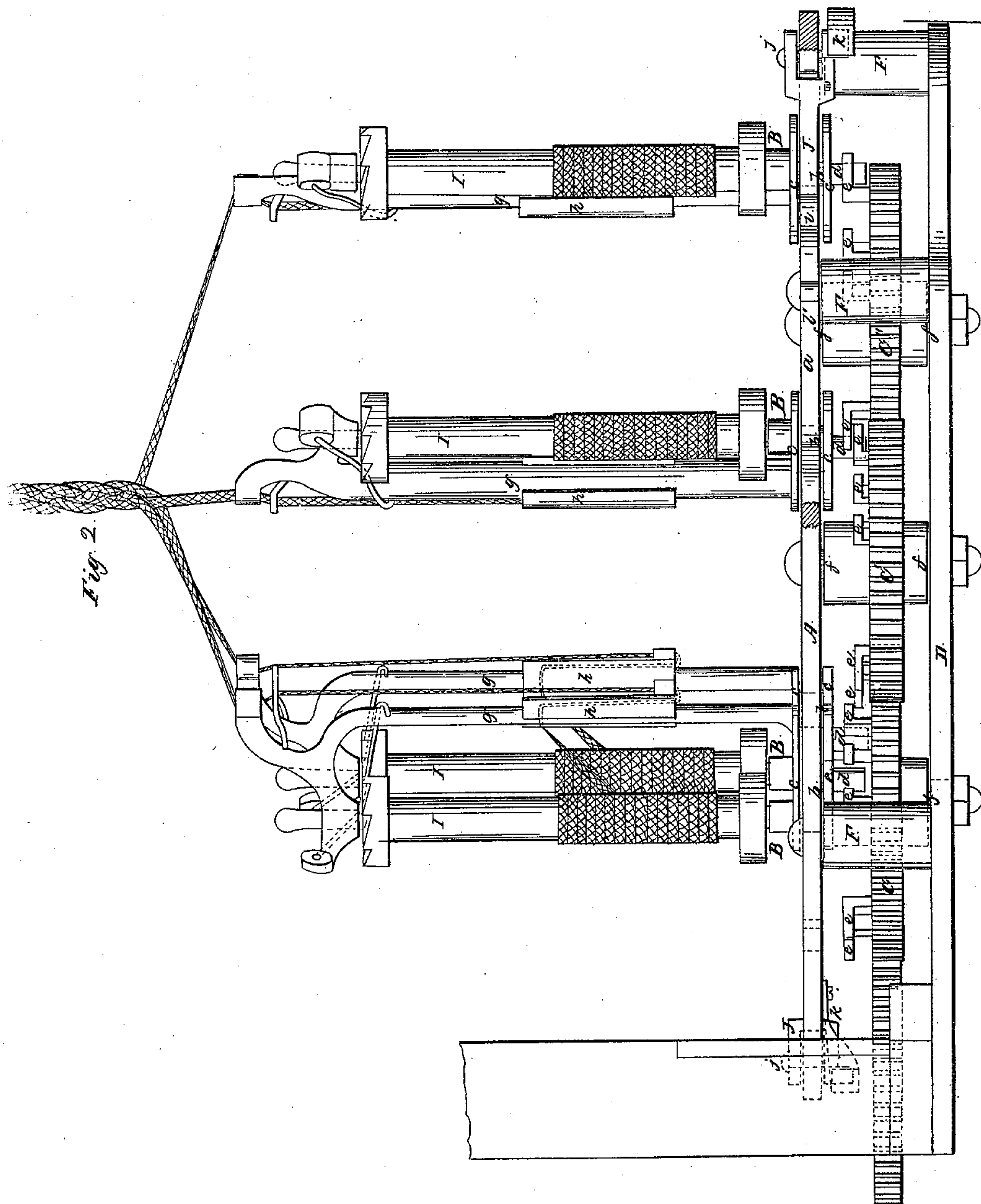
Witnesses:
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UNITED STATES PATENT OFFICE.

G. K. WINCHESTER, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO NEW ENGLAND BUTT COMPANY, OF SAME PLACE.

BRAIDING-MACHINE.

Specification of Letters Patent No. 31,061, dated January 1, 1861.

To all whom it may concern:

Be it known that I, GILMAN K. WINCHESTER, of Providence, in the county of Providence and State of Rhode Island, have
5 invented a new and useful Improvement in Braiding-Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming a
10 part of this specification, in which—

Figure 1 represents a plan or top view of my invention. Fig. 2 is a sectional front elevation of the same.

Similar letters of reference in both views
15 indicate corresponding parts.

In braiding flat bands containing an even number of strands by an ordinary braiding machine each strand receives a twist each time it traverses the table and if it is desired
20 to keep the sides of the strands facing always one way, the braiding of such bands must be done by hand.

The object of this invention is to arrange a braiding machine with an even number
25 of carriers in such a manner that the twist is taken out of each strand by giving to each carrier two or more partial revolutions on two or more points on its circumfession on the table which forms the support and guide
30 for said carriers, thereby keeping the sides of each strand always facing in the same direction.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation with
35 reference to the drawing.

The table A which forms the guide and support for the carriers B is perforated with a serpentine passage or seat *a*, which receives
40 and guides the flat portions or guide pieces *b* of the carriers. Said carriers are retained in their upright position by flanges *c* which overlap the passage *a* above and below the table A, and pins *d* projecting from the
45 centers of the lower flanges extend between the carrying hooks *e* which are attached to the upper surfaces of the cog wheels C, C', C''. These cog wheels rotate on vertical
50 posts *f* which support those portions *l*, *l'*, *l''* of the table A which are separated from the main body of said table by the passage *a*. Said posts are secured in a skeleton plate D which is supported by suitable legs and
55 which by means of columns F supports the main body of the table A.

A rotary motion is imparted to the cog wheel C by means of a gear wheel G that is secured to the vertical driving shaft H and this wheel gears into the cog-wheel C', which in its turn gears into the wheel C'', and so
60 forth. The cog wheels C, C', C'', may be of the same size and they are one less in number than the carriers. The carriers are of the ordinary construction, being furnished with bobbins I, from which the
65 strands are drawn through the standards *g*, and sliding drop weights *h* serve to keep the strands taut.

In following the motion of one of the carriers from one end of the table A to the
70 other, it will be noticed that the strand emanating from said carrier is twisted half way around and in order to take out this twist I have arranged on each end of the table and in the passage *a* a spring hook J, which
75 catches over the end of the guide piece *b* of each successive carrier and causes it to make half a revolution. To allow the carrier to swing around without obstruction, the passage *a* is enlarged just opposite the hooks J,
80 recesses *i* being made into the circular portions *l*, *l''* of the table as plainly shown in Fig. 1 in the drawing.

The hooks J are attached to the table A by means of pivots *j*, and springs K, which
85 are secured to the under surface of the table cause said hooks to place themselves across the passage *a* as clearly shown in Fig. 1, and to resume this position after the carriers as they come successively in contact with said
90 hooks, have passed through between them and the portions *l*, *l''* of the table. It is obvious however that instead of the spring hooks J other devices might be employed, which will accomplish the same object, and
95 I really have, during my experiments with this machine used other devices such as pinions attached to the carriers and meshing into short curved racks attached to the table at suitable points, but I prefer the hooks
100 because they are easily attached and their operation is perfectly reliable. These hooks ought to be made of such a width, that, if by carelessness or by mistake the machine is
105 turned in the wrong direction, the carriers are not allowed to pass into the gaps between the backs of the hooks and the main body of the table. The spring hooks may also be so
110 arranged that they act simultaneously on both ends of the table, whereby the operation of

my machine will be rendered more uniform and less noisy than it is with the hooks arranged so that one is brought into action before the other.

5 It is obvious that this improvement is applicable to braiding machines with any even number of strands, and it may be desirable in some cases, to give to each carrier a fractional part of a revolution in more than two
10 places for instance one third of a revolution in three or one fourth of a revolution in four places during the time it traverses the slot or passage *a*. As a general thing however it will be sufficient to give to each carrier
15 half a revolution at each end of the table.

By this arrangement I am enabled to produce with the braiding machine, bands from an even number of strands having silk or
20 some other costly material on one and cotton or some other cheap material on the other side in such a manner that the band when finished shows the silk or other costly material on one, and the cotton or other cheap

material on the other side. The braiding of 25 such bands, which heretofore could be accomplished only by hand, is done by my machine just as regularly and with the same facility as the braiding of bands with an odd number of strands can be done on machines of the ordinary construction. 30

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

1. The arrangement of the spring hooks 35 J, in combination with the slotted table A and with the carriers B, constructed and operating substantially as and for the purposes set forth.

2. Giving to each carrier of an even 40 strand braiding machine two or more partial revolutions at two or more successive points of its circumition on the table, substantially as and for the purpose described.

GILMAN K. WINCHESTER.

Witnesses:

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