

No. 774,560.

PATENTED NOV. 8, 1904.

G. CARLSON.
CONVEYER.

APPLICATION FILED DEC. 22, 1902.

NO MODEL.

Fig. 1.

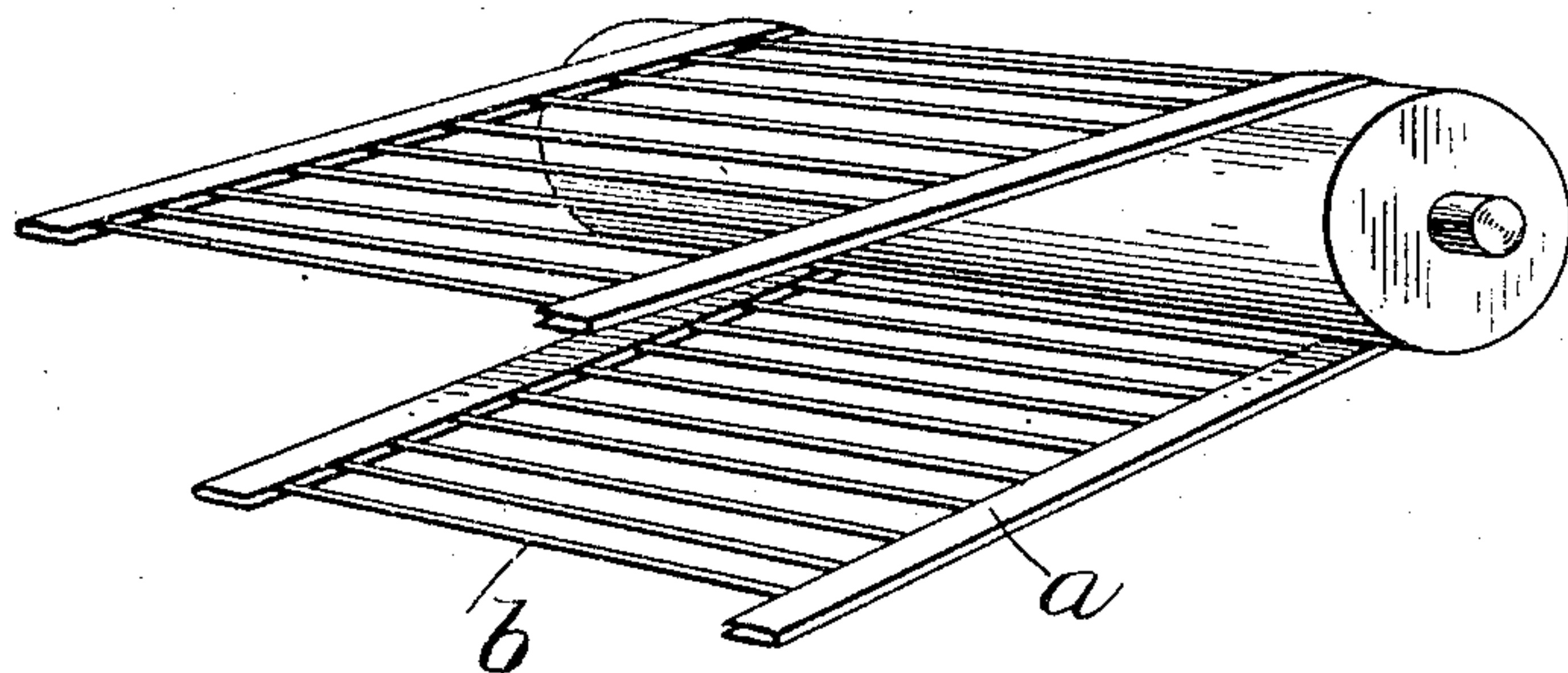


Fig. 2.

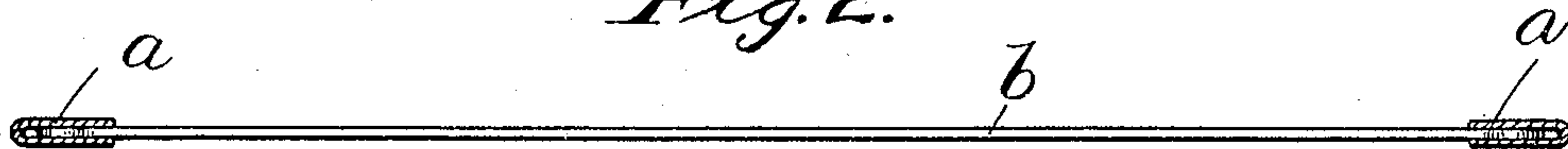


Fig. 3.

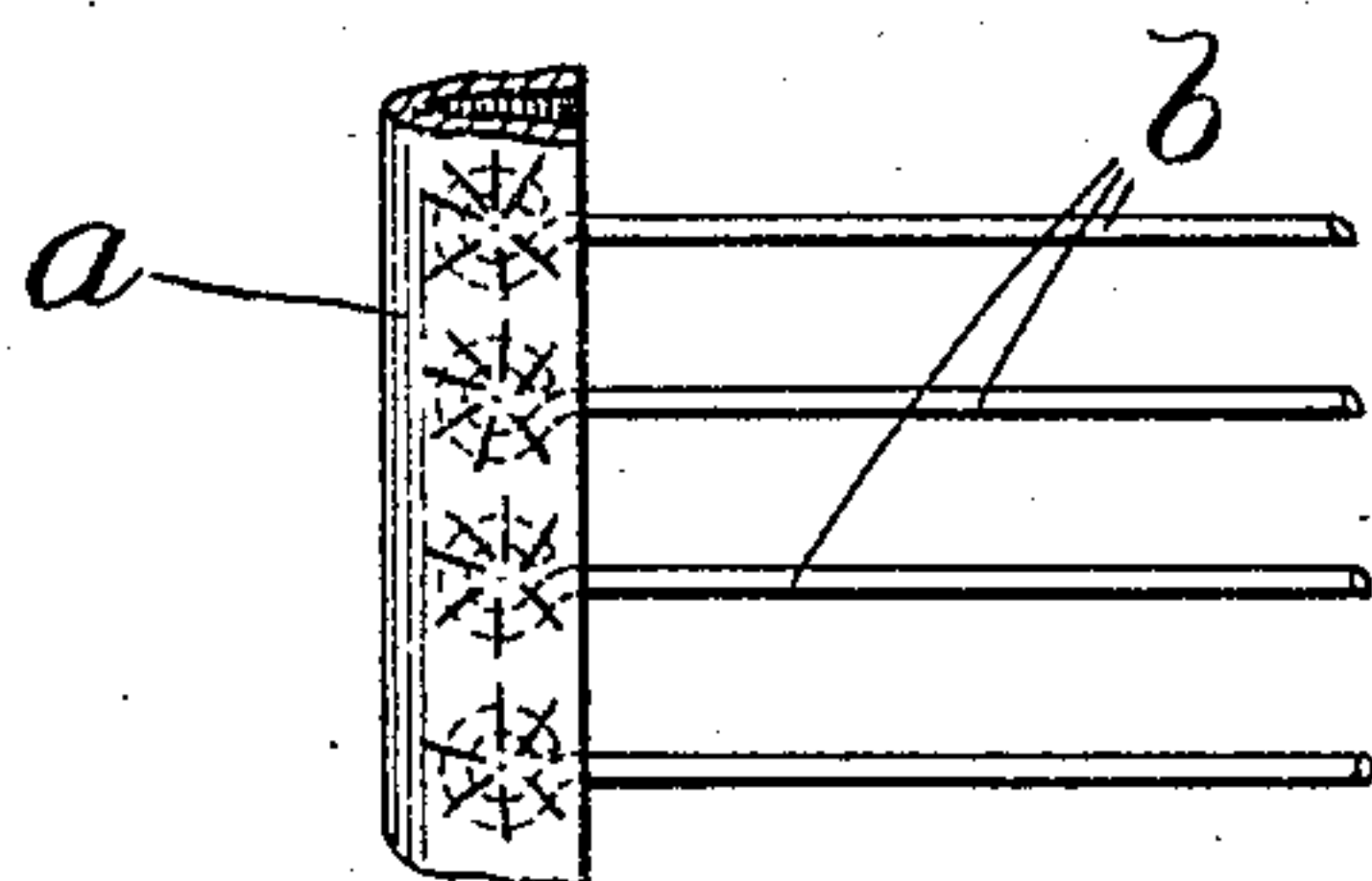


Fig. 4.

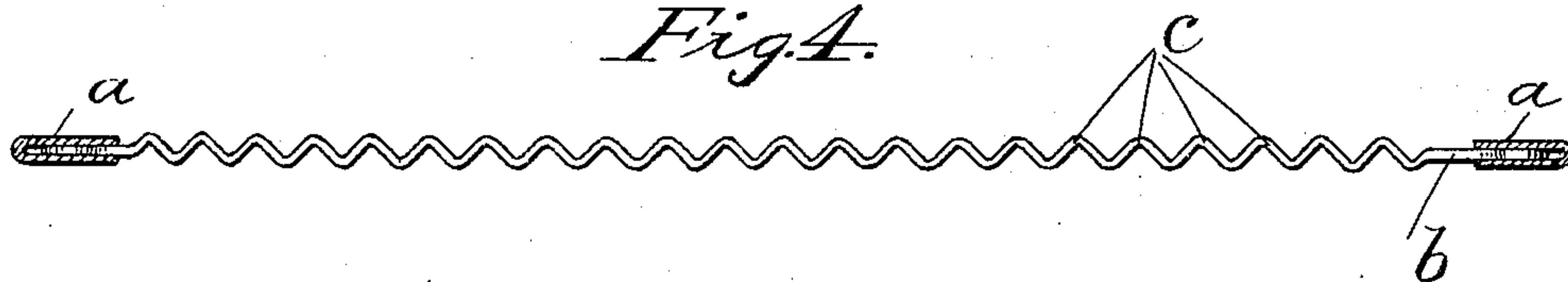


Fig. 6.

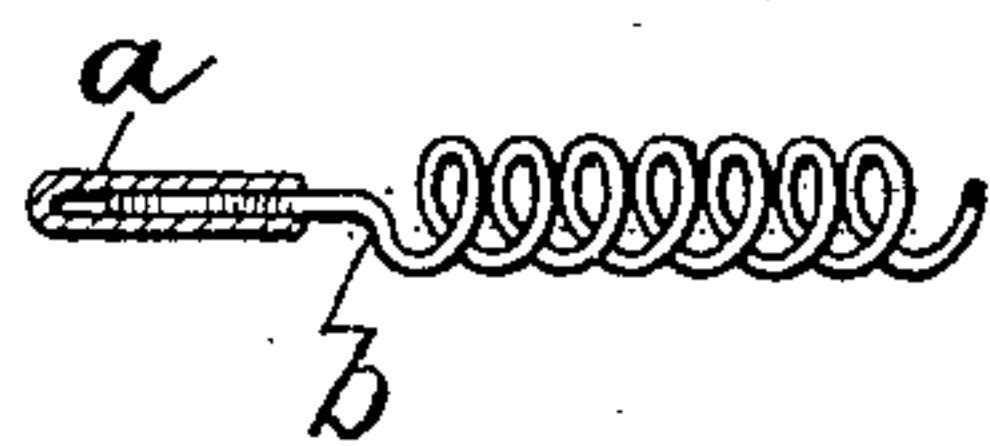
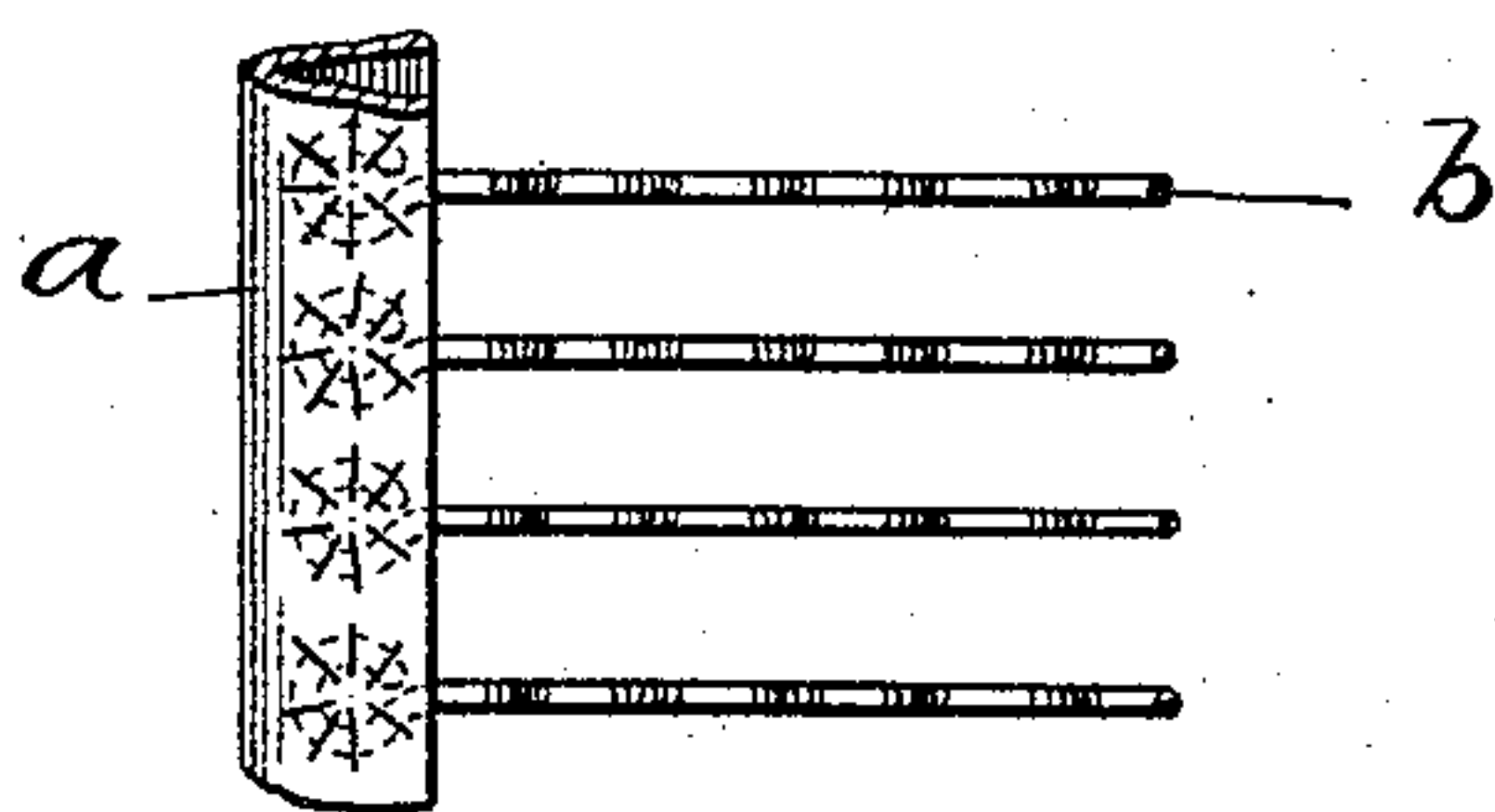


Fig. 5.



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UNITED STATES PATENT OFFICE.

GABRIEL CARLSON, OF SPRINGFIELD, MASSACHUSETTS.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 774,560, dated November 8, 1904.

Application filed December 22, 1902. Serial No. 136,166. (No model.)

To all whom it may concern:

Be it known that I, GABRIEL CARLSON, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Conveyers, of which the following is a specification.

This invention relates to the construction of flexible conveyers, and while the type referred to herein may be applicable to a variety of uses the one forming the subject-matter of this application is specially adapted for use in confectionery-coating machines—such as, for example, forms the subject-matter of an application for Letters Patent of the United States filed by me on May 19, 1902, under Serial No. 108,046, in which a conveyer of this type is shown.

The object of this invention is to provide a conveyer adapted to support relatively small articles while the latter are subjected to certain processes, the construction of the conveyer being such that the points of contact with an article supported thereon may be reduced to a minimum and the capability of the conveyer when used in confectionery-machines, as described, to retain more or less of the coating material be varied.

A further object of the invention is to provide a conveyer of this type having great flexibility on lines transverse to the movement thereof and having sufficient resistance to endwise strain to permit it to be drawn tightly over its supporting-rolls.

In the drawings forming part of this application, Figure 1 is a perspective view of a part of a conveyer and a supporting-roll over which this conveyer runs. Fig. 2 is a transverse section of the conveyer on somewhat larger scale than that shown in Fig. 1. Fig. 3 is a plan view embracing a portion of one edge and a portion of the surface of the conveyer. Fig. 4 is another view, similar to Fig. 2, showing a slightly-different form of construction, Fig. 5 being a plan view of a portion of the same. Fig. 6 is a transverse sectional view of a portion of the conveyer, showing still another modification of the construction shown in Fig. 1.

In the manufacture of confectionery, to

which mechanical processes are being constantly adapted as substitutes for the old manual methods, it is necessary to be able to subject the confections to the action of liquid coating material, and this is very generally effected by running the confections under a stream of the liquid coating material. To properly effect the coating of the confection, it must be supported on a conveyer so constructed that it shall have as few points of contact with the confection, or rather points of contact having as limited an area as possible, to the end that when the confection is removed from this conveyer in a semihardened condition the coating will naturally flow over and cover the mark made by the contact thereof with the conveyer. At the same time this conveyer must have sufficient strength to properly support the confections as they pass under the stream of coating material and sufficient flexibility to permit the use of supporting-rolls having small diameters at the end of the conveyer where the confections are delivered or transferred to some other moving part.

To produce a conveyer fulfilling these various requirements, I construct it as follows: The two side strips *a* constitute the borders of the conveyer, and these preferably are made of canvas or some similar flexible and practically non-elastic material. These strips are folded along a longitudinal center line to inclose the ends of metal bars *b*, and to constitute an endless conveyer the ends of these strips may be sewed together. These bars usually are formed of wire with an eye formed in each end, as shown in dotted lines in Figs. 3 and 5. These eyes in the drawings are shown bent into circular form; but this is a mere matter of convenience, and any other means may be substituted therefor, whereby the bars *b* may be secured to the strips *a*. I prefer, as stated, to form eyes in the ends of these bars *b* and then by means of thread to sew the two sides of the edge strips *a* together through the eyes bent up on the ends of the bars. Obviously a rivet running through the eyes on the bars would quite as effectually secure the latter to the side pieces as sewing them in, and this method of fastening may be

adopted, if desired. By securing the bars at their ends to the side strips *a* these latter are maintained in proper alinement one with the other, and, furthermore, the bars are prevented from rolling or rotating on their axes. In the construction shown in Fig. 1 this rolling or rotating movement may be immaterial; but in the other constructions (shown in Figs. 4 and 6) it is important that the bars should not be permitted to rotate. In Fig. 4 there is shown a bar which is corrugated, said corrugations, as shown in Fig. 5, being formed in a plane at right angles to the line of movement of the conveyer, to the end that the points *c* may be the only portions of the bar *b* in contact with the confection. Still another form of bar is shown in Fig. 6, which consists in twisting said bars into an open coil. The purpose of the modifications shown in Figs. 4 and 6 is twofold—first, to reduce the area of the point of contact between the bars and the bottom of the confections as compared with a straight bar, such as is shown in Fig. 2, and, second, to provide means for holding a greater quantity of the coating material against the under side of the confection than can be so held by the contact therewith of the straight bar.

Bars of substantially the three forms of construction shown and described herein are necessary in the manufacture of various confections. For example, that shown in Figs. 1 and 2 may be employed for such confections as may not have to be thickly coated on the under side thereof and the coating mixture of which is of such a nature that it will close up the mark left by the wire after it has been removed from the conveyer on which it is permitted to only partially solidify.

The form of bar shown in Fig. 4 may be employed where confections are coated with a material which must be more thickly applied to the bottom and yet is of a nature which renders it desirable that the bottom of the confections should not be too deeply marked. This form of bar supports the confection on the points of the corrugations *c*; but these corrugations will carry more of the coating material than will the straight bars shown in Fig. 2, it being of course understood that most of these coating materials are of a viscid nature.

When it is desired to apply a still heavier coating to the under side of the confection,

the form of bars shown in Fig. 6 may be employed. In this figure the bar is arranged in the form of an open coil, whereby not only are the points of contact with the confection reduced in area, but the amount of coating material held by this form of bar will much exceed that carried by the other forms.

From the foregoing description it is clear that means are herein provided whereby confections of all of the kinds used in general commerce may be coated in a machine adapted to the purpose, and the lack of suitable means for carrying confections through coating-machines, whereby the desired result will be attained, has been one of the most serious drawbacks to the general introduction of such machines.

While it has been found in practice that some flexible material, such as canvas, is the most suitable for the edge strips *a*, some other construction might be substituted therefor—as, for example, a twisted or braided wire cord or a suitably-made chain having short links, the wires *b* being secured thereto in any suitable manner; but obviously these substitutes would all fall within the scope of the invention, and it may be assumed that the term “flexible edge strip” used herein covers such modification.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A conveyer-belt consisting of two parallel edge strips of flexible material, and separate parallel wires extending from one strip to the other to constitute the supporting-surface of the conveyer, and means to secure the ends of the wires to said strips in separated relation to hold them against lateral or endwise displacement.

2. A conveyer-belt consisting of two flexible parallel edge strips of flexible material, and a body portion consisting of separate parallel wires having bent ends embedded in said flexible strips, and means to secure each end of said wires independently to said strips to hold the wires against lateral and endwise movement.

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