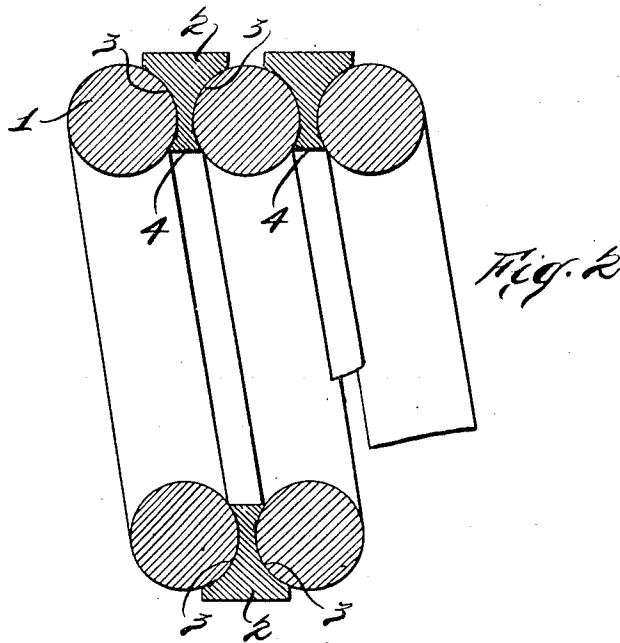
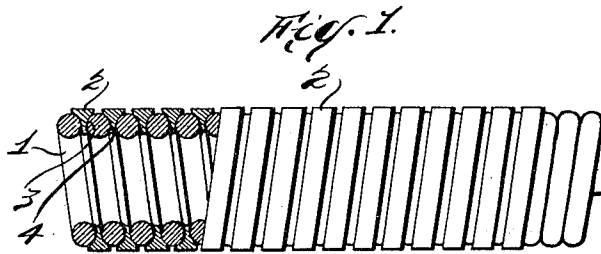


C. FISCHER.
FLEXIBLE TUBING.
APPLICATION FILED OCT. 28, 1911.

1,055,262.

Patented Mar. 4, 1913.



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UNITED STATES PATENT OFFICE.

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FLEXIBLE TUBING.

1,055,262.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed October 28, 1911. Serial No. 657,220.

To all whom it may concern:

Be it known that I, CHARLES FISCHER, a citizen of the United States, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Flexible Tubing, of which the following is a clear, full, and exact description.

The object of the present invention is to produce an improved non-shrinkable flexible tubing, which, after continued use, will still contain twelve inches to every foot of tubing, and to provide a tubing of this description whose binding sheathing in the form of a helical strip will not tend to unwind, even though cut through or worn through at a single point.

In flexible tubings as usually made the inner core consists of a helix of iron or steel wire pulled out under tension, so that a space will exist between adjacent convolutions of the helix of the core, and a winding sheathing of the cross section of a segment of an arc of a circle is tightly wrapped in the space between the convolutions holding the convolutions separated by the binding strip, at the same time permitting a flexing of the tube. This type of flexible tubing however has the great disadvantage that on wear it will shorten in length due either to the stretching of the outer sheathing or a wearing of the adjacent surfaces of the outer sheathing and the core. Furthermore if worn through at one point the outer sheathing will be caused to unwind, the core will close up and the tubing become unsightly and dangerous, and useless.

In my invention, I provide a core, preferably of helical resilient iron or steel wire, and a sheathing flat on the outside, but being of such a cross section that a depending lug or abutment of the sheathing will always rest between adjacent convolutions of the helix of the core, so as to prevent any shortening of the same by an expansion of the sheathing, and to prevent an unwinding of the sheathing, no matter how much wear the sheathing may be subjected to.

The scope of my invention will be pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation of a section of tubing partly in section, showing my improved invention. Fig. 2 is an enlarged detailed view of the left hand end, Fig. 1.

In carrying out the invention, I provide an outer metal sheathing or binding having the cross section preferably such as shown in Fig. 2 provided with a flat outer surface 2, and curved sides 3—3 terminating in an abutment piece, 4, so that the abutment piece may be forced down between two adjacent convolutions of the helix 1 of the core to separate the same, and to act as an abutment between the two, and prevent the coming together of the two convolutions as well as to prevent the unwinding of the outer sheathing by a wear on its surface. This device may be manufactured by forcing the sheathing between the convolutions of a closed up helix or the helix may be extended against tension, and the sheathing wound into place.

I prefer to have the sheathing of the cross section shown in the drawings, so that a concave surface of the abutment will rest against adjacent convolutions of the wires of the core on both sides of a line drawn between the centers of the adjacent convolutions, so as to provide a part of greater width on the interior of such center line as well as on the exterior, the exterior width however being far greater than extra width on the interior. The interior extra width insures against any pulling out of the sheathing, and makes the device absolutely waterproof.

In carrying out this invention, details of construction may be varied from those shown, and yet the essence of the invention be retained; some parts might be employed without others, and new features thereof might be combined with elements old in the art in diverse ways, although the herein described type is regarded as embodying substantial improvements over such modifications.

As many changes could be made in the above construction, and many apparently widely different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted in an illustrative and not in a limiting sense.

It is furthermore desired to be understood that the language used in the following claim is intended to cover all the generic and specific features of the invention herein

described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

I claim as my invention:

- 5 A flexible tubing comprising a helical inner core, and a helical outer sheathing therefor having an inwardly extending projection resting between the adjacent convolutions of the core, said projection being
10 slightly enlarged at its end and providing an abutment adapted to engage the adjacent convolutions of the core at points slightly

inward of the center of the convolutions, the abutment lying outwardly of the inner surface of the tubing whereby the tubing is 15 permitted a free bending action and is provided with an uninterrupted face.

Signed at New York city, New York, this 26th day of October, 1911.

CHARLES FISCHER.

Witnesses:

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