Nov. 10, 1925. 1,561,445

E. ELSAESSER ET AL

GUTTER OR CHANNEL FOR TREATING ARTIFICIAL THREADS OR YARNS, PARTICULARLY IMITATION SILK YARNS, WITH ACIDS OR AN ACID CONTAINING LIQUOR

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Fig.1

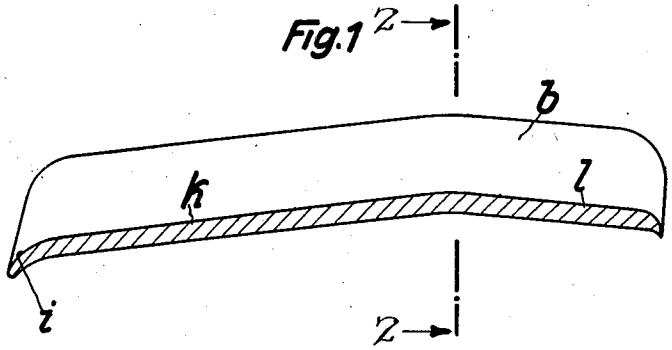


Fig.2.

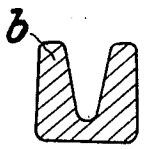
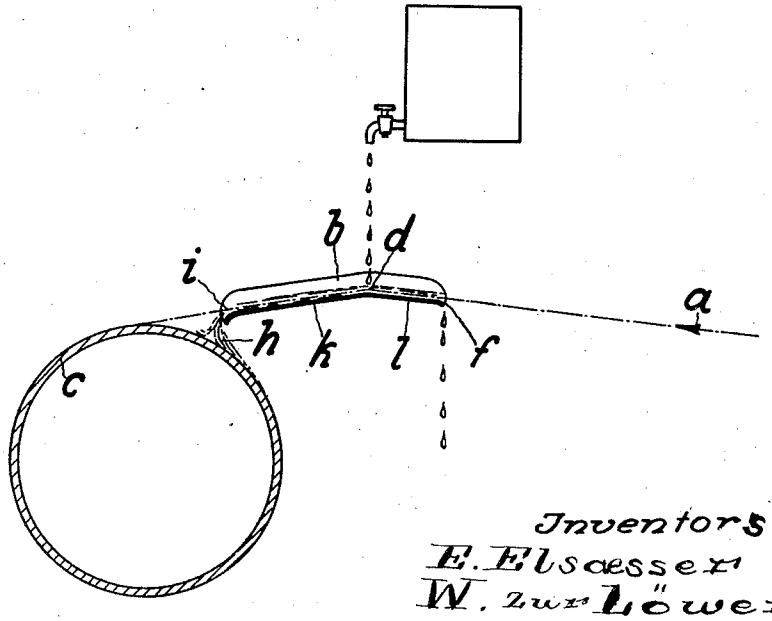


Fig.3.



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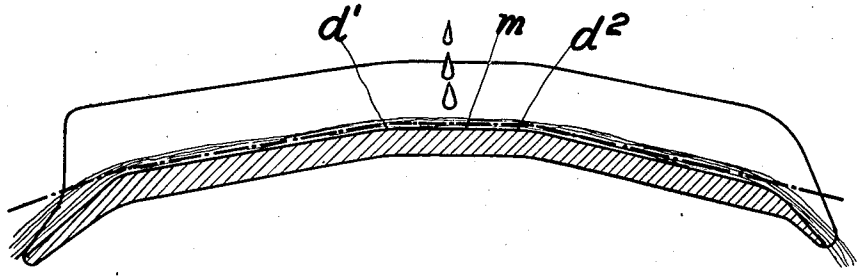
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Fig. 4.



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Patented Nov. 10, 1925. 1,561,445

UNITED STATES PATENT OFFICE.

EMIL ELSAESSER, OF BARMEN-LANGERFELD, AND WALDEMAR ZUR LÖWEN, OF BARMEN-RITTERSHAUSEN, GERMANY, ASSIGNORS, BY MESNE ASSIGNMENTS, TO AMERICAN BEMBERG CORPORATION, A CORPORATION OF DELAWARE.

GUTTER OR CHANNEL FOR TREATING ARTIFICIAL THREADS OR YARNS, PARTICULARLY IMITATION-SILK YARNS, WITH ACIDS OR AN ACID CONTAINING LIQUOR.

Application filed October 29, 1923. Serial No. 671,565.

To all whom it may concern:

Be it known that we, EMIL ELSAESSER, and WALDEMAR ZUR LÖWEN, citizens of the Deutsches Reich, residing at Barmen-Langerfeld and Barmen-Rittershausen, Germany, respectively, have invented certain new and useful improvements in a gutter or channel for treating artificial threads or yarns, particularly imitation-silk yarns, with acids or an acid containing liquor (for which we filed an application in Germany on August 19th, 1922); and we do hereby declare the following to be a full, clear, and exact description thereof.

Our invention relates to an improved gutter or channel for treating artificial threads or yarns, particularly imitation silk yarns, with acids or an acid containing liquor.

In the present state of the art gutters or channels employed for the stated purpose are of a straight form and arranged to be inclined for the liquor to run off at one side. In this way only a small portion of the liquor can come to act on the thread and most of the liquor must flow over the channel unused.

The object of our invention is to remedy this deflect and with this object in view we provide a bend or several bends in the gutter or channel so that by locating the bend or one of the bends exactly below the point where the liquor is supplied to the gutter or channel, the liquor will flow off in both directions and thereby bring about a continued and double effect as will be explained hereinafter more in detail.

In the accompanying drawing forming part of this specification two embodiments of our invention are illustrated by way of example, Figure 1 being a longitudinal section of the improved gutter or channel according to one embodiment; Figure 2 being a cross-section taken on the line 2—2 of Figure 1 and Figure 3 showing diagrammatically the manner of application whilst Figure 4 is a longitudinal section of the improved gutter according to a modification.

In the embodiment shown in Figures 1–3 the gutter or channel *b* for receiving and guiding the thread *a* has a bend *d* to be located perpendicularly below the cock of the liquor container, as shown in Figure 3, so that the liquor dropping down from the container will flow off in the gutter or channel in both directions and thereby produce a prolonged and double effect. Preferably the said bend *d* is to be provided at a point dividing the whole of the length of the channel into a shorter portion *l* for the reception of the thread *a* and a longer portion *k* which preferably may be about twice as long as the portion *l*. But it goes without saying that any other dimension of the two portions *k* and *l* may be preferred as the case may require, and the two portions *k* and *l* may even be of equal length.

The thread *a* composed of a plurality of single artificial fibres, such as imitation silk filaments, is fed in the direction of the arrow in Figure 3 through the gutter or channel *b* and at the same time treated or washed with an acid liquor dropping from the container onto the uppermost point of the gutter or channel while the thread *a* is running therethrough before being wound about a bobbin, spool, roll or the like *c*, as will be readily understood by persons versed in the art. The wound up thread again comes in contact with the liquor *h* flowing down from the outlet *i* of the gutter or channel onto the bobbin, spool, or roll *c*.

On the other hand the liquor that flows down in the portion *l* of the gutter or channel towards the outlet *f* takes along with it all of the water the thread still contains from previous treatments to which the thread had been subjected and which need not be described, since all of the treatments the imitation silk threads have to undergo, are commonly known. The liquor flowing off the outlet *f* may be received in a separate receptacle.

In passing over the elevated point or bend *d* of the gutter or channel *b* the thread is flattened or spread out on account of frictional stress at the said point, so that also the inner filaments of the thread will be thoroughly washed and freed from any copper salts that may have been retained. In this manner threads or yarns of uniform quality are obtained.

The bend may be given any desired shape.

As already stated hereinbefore a plurality of bends may be provided in the gutter or channel as shown in Figure 4 so that the latter will comprise a horizontal portion m intermediate between sloping portions d^1 d^2 being the bends between the horizontal and the sloping portions. The acid first spreads over the horizontal portion m and as soon as a certain amount thereof has collected thereon it starts to flow away on both sides over the bends d^1 d^2. The action of the liquor upon the threads is increased by the accumulation of the acid on the horizontal part m. As regards the material the gutter or channel may be made of any acid-proof substance, such as glass, porcelain, stoneware, or of acid-proof metals, such as lead and the like.

From the foregoing description it will be seen that simple and efficient means are herein provided for accomplishing the object of our invention, but while the embodiments of our invention shown and described are well adapted to serve the purpose for which they are intended, we wish it to be understood, that the invention is not limited to the precise construction, shape and size set forth, but includes such changes as may be made within the spirit of the invention and the scope of the appended claims.

What we claim is:

1. A gutter or channel for treating artificial threads in particular imitation silk threads or yarns, with an acid or an acidiferous liquor, said gutter or channel having a bend between its ends and located at such a point as to form two sloping end portions for compelling the liquor admitted at the highest part of the gutter to flow off in both directions towards its lower ends, one of which sloping portions is about half the length of the other one, substantially as set forth.

2. In an apparatus for treating artificial threads and the like, the combination of a gutter through which the thread is drawn, said gutter presenting at least two divergent downwardly inclined sections extending from a high portion in the gutter; and means for feeding liquor to such high portion.

In testimony whereof we have signed our names to this specification.

DR. EMIL ELSAESSER.
WALDEMAR ZUR LÖWEN.