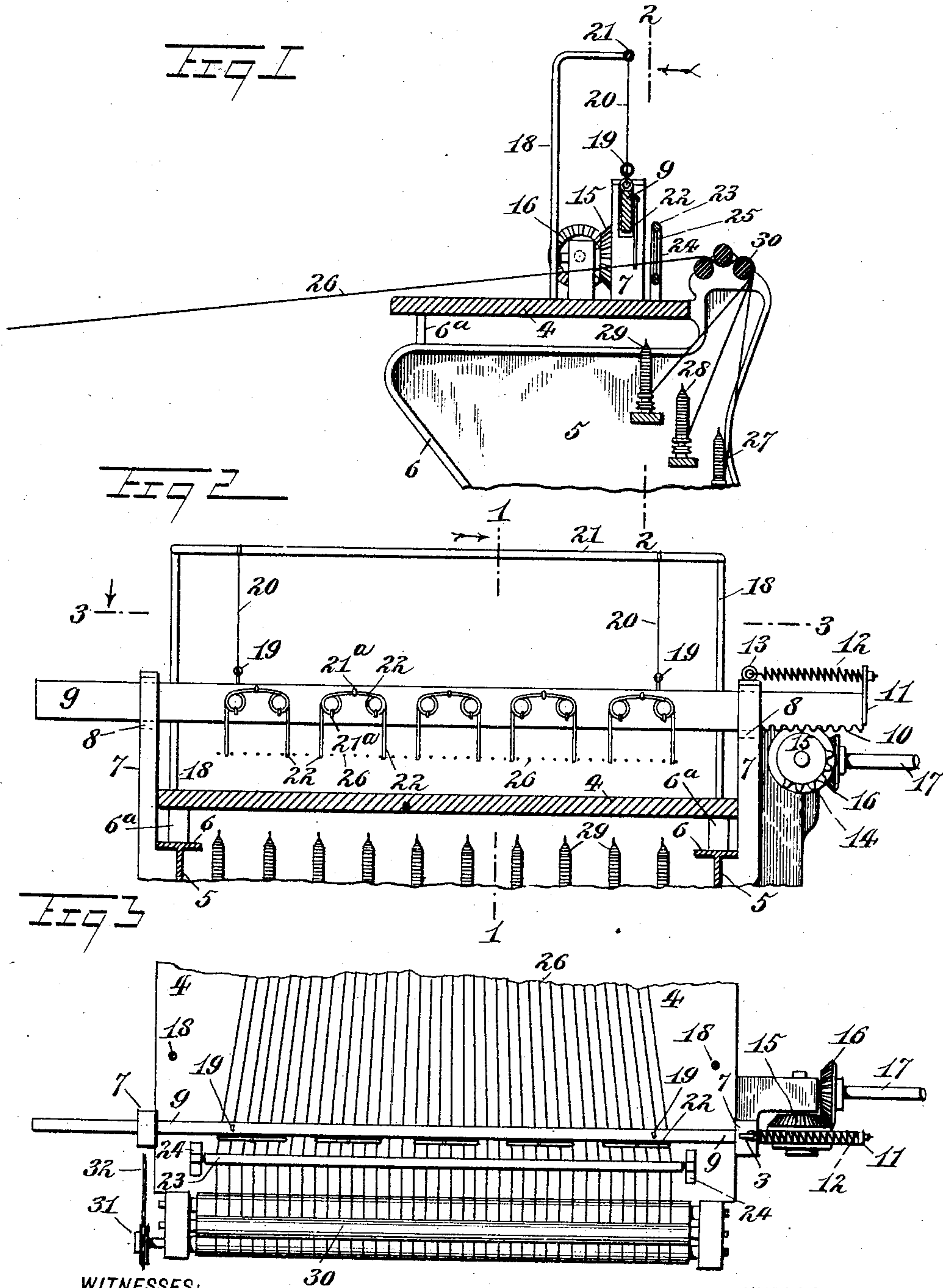


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PATENTED JAN. 10, 1905.

E. C. REITER.
THREAD SEPARATOR.
APPLICATION FILED JULY 21, 1904.



WITNESSES:

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EDWARD CHARLES REITER, OF ROCKVILLE, CONNECTICUT.

THREAD-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 779,868, dated January 10, 1905.

Application filed July 21, 1904. Serial No. 217,587.

To all whom it may concern:

Be it known that I, EDWARD CHARLES REITER, a citizen of the United States, and a resident of Rockville, in the county of Tolland and State of Connecticut, have invented a new and Improved Thread-Separator, of which the following is a full, clear, and exact description.

My invention relates to thread-separators and admits of general use, but is of peculiar service in quilling-machines and analogous devices in which it is desirable to separate a number of threads from each other and to maintain the separation.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical fragmentary section through a quilling-machine, taken on the line 1 1 of Fig. 2 looking in the direction of the arrow. Fig. 2 is a fragmentary vertical section taken on the line 2 2 of Fig. 1 looking in the direction of the arrow, and Fig. 3 is a fragmentary horizontal section upon the line 3 3 of Fig. 2 looking in the direction of the arrow.

The thread-board is shown at 4 and is mounted upon supporting-walls 5, provided with flanges 6 and with bosses 6^a. A pair of standards 7 project upwardly from the framework and are provided with slots 8, in which rests a slidable bar 9, provided adjacent to one of its ends with rack-teeth 10, and with a rod 11 projecting upwardly therefrom. A spring 12 engages the rod 11 and also engages an eye 13 on one of the standards 7. The tension of this spring is to pull this rod toward the left. A mutilated gear 15, provided with teeth 14, is adapted to engage the rack-teeth 10 and to move the bar 9 to the right. This mutilated gear 15 is engaged by a bevel-gear 16, which is actuated continuously in a common direction by means of the revoluble shaft 17. Projecting upwardly from the board 4 are davits 18, bearing a cross-rod 21. Connected with this rod are pendent cords 20, which engage eyes 19 of the bar 9, so as to suspend the bar clear of the bottoms of the

slots 8, as indicated by dotted lines in Fig. 2. Mounted upon the bar 9 are a plurality of spring members 22, which may preferably be made of a single piece of spring-wire and connected to the bar 9 by means of staples 21^a or other appropriate fastenings. The lower ends of these spring members project downwardly from the bar 9, so that this bar, together with the projecting portions of the spring members, virtually constitutes a sort of comb provided with resilient teeth. A reed is shown at 23 and is mounted upon brackets 24 and provided with vertical spacing-pins 25. The threads being separated are shown at 26 and after being separated are wound upon bobbins 27 28 29, the bobbins being actuated by any suitable mechanism well known in the art. Tension-rollers are shown at 30 and pull the threads through the reed 23, so as to feed the same to the bobbins. These tension-rollers are actuated by means of a sprocket-wheel 31 and a sprocket-chain 32 or by any other suitable mechanism.

The action of my device is as follows: The threads 26 are fed to the tension-rollers 30 by passing through the reed 23, being thus spaced apart by the spacing-pins 25. It frequently happens, however, that as the threads are fed from a common tank or for any other reason are brought together before reaching the reed 23 two or more of them will frequently stick together, so that the action of the reed and the tension-rollers alone is not sufficient to separate them. The result is a tangle or else a stoppage of the mechanism for the purpose of straightening out the threads.

Referring to Figs. 2 and 3, it will be seen that the comb, consisting of the bar 9 and the spring members 22, moves back and forth across the threads so that the spring members or teeth rake gently across the threads and disengage any two of them which may chance to adhere to each other. The shaft 17 being in motion, the mutilated gear 15 turns and the rack-teeth 10 are alternately engaged by the teeth 14, the bar 9 being drawn to the right, according to the view shown in Fig. 2, and then drawn to the left by the tension of the

spring 12. The bar 9 being suspended from the cords 20 acquires a pendulum-like motion and moves with comparatively little friction.

Having now described my invention, I claim
5 as new and desire to secure by Letters Patent—

1. In an apparatus of the character described, the combination of means for tensioning threads, a comb mounted adjacent to said threads and free to swing, said comb being
10 provided with teeth adapted to engage said threads, and means for swinging said comb transversely to the general direction of said threads.

2. In an apparatus of the character described, the combination of a bar provided
15 with rack-teeth, a mutilated gear provided with teeth for engaging said rack-teeth so as to move said bar in one direction, a spring for retracting said bar in the opposite direction,
20 means for supporting said bar, and a plurality of teeth mounted upon said bar and adapted to rake across the thread.

3. In an apparatus of the character described, the combination of a stationary cross-
25 rod, a movable bar suspended therefrom and free to swing, teeth mounted upon said bar

and adapted to engage the threads extending transversely across the general length of said bar, and means for actuating said swinging
bar back and forth across said threads. 30

4. In an apparatus of the character described, the combination of mechanism for spacing threads apart, a member provided with
spring-teeth for engaging said threads, and
means for actuating said member transversely 35
to the general longitudinal direction of said threads.

5. In a device of the character described, the combination of a reed provided with spacing-pins, means for drawing said threads sep- 40
arately through said reed, and mechanism provided with spring-teeth for engaging said threads for the purpose of raking the same transversely.

In testimony whereof I have signed my name 45
to this specification in the presence of two subscribing witnesses.

EDWARD CHARLES REITER.

Witnesses:

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AMASA P. DICKINSON.