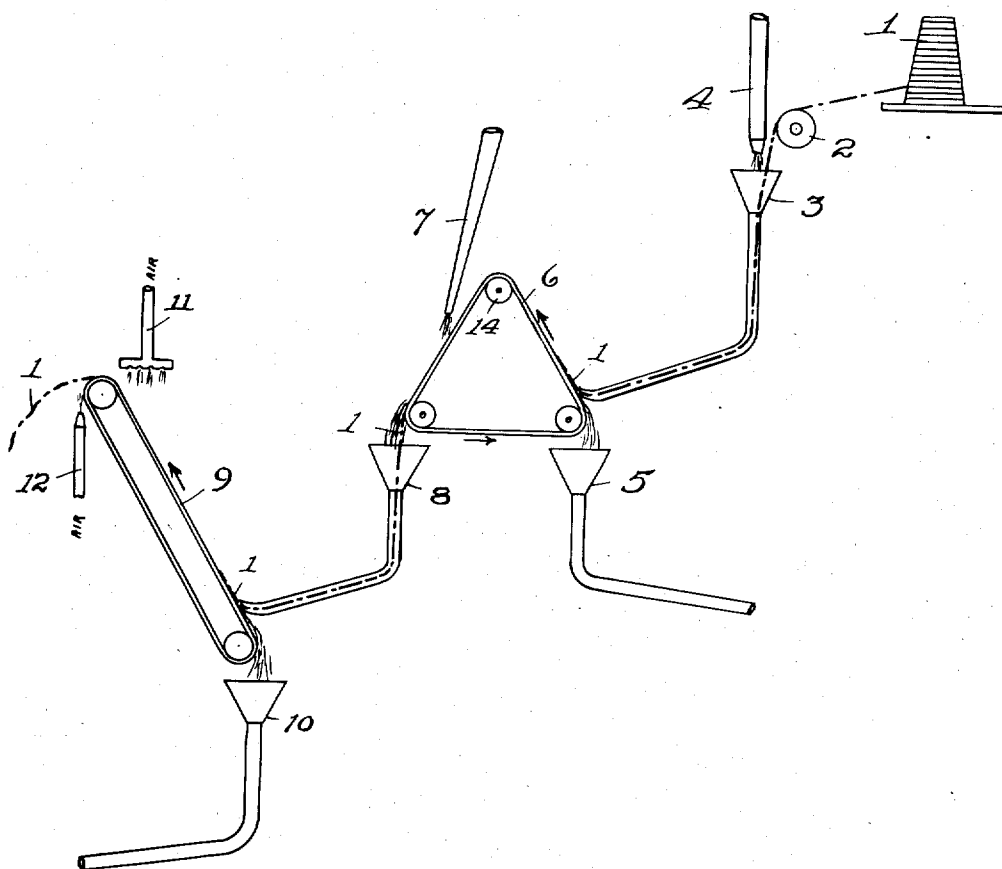


C. S. ALTHOUSE.
 APPARATUS FOR TREATING THREADS.
 APPLICATION FILED APR. 29, 1912.

1,061,652.

Patented May 13, 1913.



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APPARATUS FOR TREATING THREADS.

1,061,652.

Specification of Letters Patent.

Patented May 13, 1913.

Original application filed March 21, 1912, Serial No. 685,319. Divided and this application filed April 29, 1912. Serial No. 694,001.

To all whom it may concern:

Be it known that I, CHARLES SCOTT ALTHOUSE, citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Treating Threads, of which the following is a specification.

This invention relates to apparatus for treating threads or yarns or other solid substances, as for instance for washing, dyeing or otherwise treating said substances.

The invention consists of apparatus for passing the substance to be treated, from a source of supply, while immersed in a liquid, to a separating device, separating the substance from the liquid by the movement of the separator, and means for conveying it to a second and if desirable, a plurality of succeeding separators, and finally to a drying device, from which it may be delivered to any suitable destination.

This application is a division of my pending application No. 685,319.

The apparatus is fully described in the following specification and clearly illustrated in the accompanying drawing, in which:—

The numeral 1 designates the source of supply of the substance to be treated.

The numeral 2 designates a guide to direct the said supply into the mouth of a tubular member 3.

The numeral 4 designates a liquid supply tube which feeds a stream of liquid into the mouth of the member 3.

The substance to be treated, indicated in the drawing by the numeral 1, is carried through the tube 3 by the action of the liquid, and may be treated by the liquid during its passage through the tube in any manner, as for instance, dyeing it.

The numeral 5 designates a tubular receptacle located below the open end of the member 3, and adapted to receive the liquid therefrom.

The numeral 6 designates a separating device, shown in the drawing in the form of an endless belt traveling over three rollers 14, arranged in triangular form, and the belt moves in close proximity to the open end of the member 3, in an upwardly direction.

7 designates a second liquid supply tube which feeds a stream of liquid against the belt 6 as it moves in a downwardly direction.

The numeral 8 designates a tubular re-

ceptacle, located immediately below the separator in such position that it will receive the liquid deposited on the belt by the tube 7. This member 8 terminates in an open end which lies in close proximity to the path of a traveling endless belt 9, moving in an upwardly direction and against which the liquid as it emerges from the tube will impinge.

10 designates a tubular receptacle located below the belt 9 and in such position that it will receive the liquid as it is shed from the belt.

11 designates an air jet, adapted to deliver a blast or current of air in a downwardly direction against the upwardly moving belt, and 12 designates a second air jet, adapted to deliver a blast of air in an upwardly direction and directed to the uppermost point of the traveling belt.

The substance to be treated enters the tube 3 and is carried by the liquid through said tube and against the separator which carries the substance up and sheds the liquid into the receptacle 5. The jet 7 directs a stream of liquid against the substance while it is being carried down on the opposite side of the separator, and this serves to detach the substance from the surface of the separator and permit it, together with the liquid, to enter the receptacle 8 through which they travel together to the outlet of said tube 8 where they are deposited on the upwardly moving side of the belt 9. The substance is carried up, while the liquid is shed into the receptacle 10. The blast of air from the jet 11 will tend to dry the substance as it moves up, and the jet 12 will serve to disengage it as it rounds the upper end of the belt, and it is then carried to any desirable destination.

It is evident that the number of separating devices and liquid conveying tubes may be increased and the action repeated any number of times before delivery to the drying apparatus and it is also evident that the drying device may be modified in form or eliminated entirely and the substance taken directly from the last separating device and dried, or it may be wound or deposited in a suitable receptacle while still wet.

Having thus described my invention, I claim:—

1. Apparatus for treating threads or like

substances comprising a liquid conveying tube through which the liquid and the threads pass, a separator adapted to automatically pick up the threads and shed the liquid as they emerge from the tube, a second conveying tube adapted to receive the threads together with a second liquid as they leave the separator and a second movable body adapted to automatically engage the threads and to shed the liquid as they emerge from the second tube.

2. Apparatus for treating threads comprising a liquid conveying tube through which the thread is conveyed by the liquid and a separator adapted to automatically pick up the thread and shed the liquid as they emerge from the tube.

3. Apparatus for treating threads or the like substances comprising a liquid conveying tube through which the thread is conveyed by the liquid and a separator adapted to engage the thread and to shed the liquid as they emerge from the tube and means for detaching the thread from the separator.

4. Apparatus for treating threads or like substances comprising a liquid conveying tube through which the substance is conveyed by the liquid, a separator adapted to automatically pick up the substance and shed the liquid as they emerge from said tube and a second liquid conveying tube adapted to receive the substance and a second liquid as they leave the separator.

5. Apparatus for treating threads or like substances comprising a separator means for

conveying the thread while immersed in liquid from a source of supply to the separator, said separator automatically picking up the thread and separating it from the liquid.

6. In apparatus for treating threads, a tubular member adapted to convey the threads and a liquid from a source of supply to a separator and means including a liquid supply for separating the threads from the separator.

7. In apparatus for treating threads, the combination of a liquid conveying tube, an endless belt moving across the open end of the tube, a liquid supply directed against said belt and a second conveying tube adapted to receive said liquid supply.

8. Apparatus for treating threads or like substances, comprising a liquid conveying tube through which the liquid and the substances pass; a separator adapted to automatically pick up the substance and shed the liquid as they emerge from the tube; a second conveying tube adapted to receive the substance together with a second liquid as they leave the separator; a second separating device adapted to automatically engage the substance and shed the liquid as they emerge from the second tube and means for removing the substance from the said second separating device.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES SCOTT ALTHOUSE.

Witnesses:

ED. A. KELLY,
CLARA E. YOUNG.

Correction in Letters Patent No. 1,061,652.

It is hereby certified that in Letters Patent No. 1,061,652, granted May 13, 1913, upon the application of Charles Scott Althouse, of Reading, Pennsylvania, for an improvement in "Apparatus for Treating Threads," an error appears in the printed specification requiring correction as follows: Page 2, line 35, after the word "separator" insert a comma; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 17th day of June, A. D., 1913.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.

substances comprising a liquid conveying tube through which the liquid and the threads pass, a separator adapted to automatically pick up the threads and shed the liquid as they emerge from the tube, a second conveying tube adapted to receive the threads together with a second liquid as they leave the separator and a second movable body adapted to automatically engage the threads and to shed the liquid as they emerge from the second tube.

2. Apparatus for treating threads comprising a liquid conveying tube through which the thread is conveyed by the liquid and a separator adapted to automatically pick up the thread and shed the liquid as they emerge from the tube.

3. Apparatus for treating threads or the like substances comprising a liquid conveying tube through which the thread is conveyed by the liquid and a separator adapted to engage the thread and to shed the liquid as they emerge from the tube and means for detaching the thread from the separator.

4. Apparatus for treating threads or like substances comprising a liquid conveying tube through which the substance is conveyed by the liquid, a separator adapted to automatically pick up the substance and shed the liquid as they emerge from said tube and a second liquid conveying tube adapted to receive the substance and a second liquid as they leave the separator.

5. Apparatus for treating threads or like substances comprising a separator means for

conveying the thread while immersed in liquid from a source of supply to the separator, said separator automatically picking up the thread and separating it from the liquid.

6. In apparatus for treating threads, a tubular member adapted to convey the threads and a liquid from a source of supply to a separator and means including a liquid supply for separating the threads from the separator.

7. In apparatus for treating threads, the combination of a liquid conveying tube, an endless belt moving across the open end of the tube, a liquid supply directed against said belt and a second conveying tube adapted to receive said liquid supply.

8. Apparatus for treating threads or like substances, comprising a liquid conveying tube through which the liquid and the substances pass; a separator adapted to automatically pick up the substance and shed the liquid as they emerge from the tube; a second conveying tube adapted to receive the substance together with a second liquid as they leave the separator; a second separating device adapted to automatically engage the substance and shed the liquid as they emerge from the second tube and means for removing the substance from the said second separating device.

In testimony whereof I affix my signature in presence of two witnesses.

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