No. 645,703. Patented Mar. 20, 1900.

# B. O. DAHL.

## APPARATUS FOR SORTING TOBACCO LEAVES.

(Application filed Mar. 14, 1899.)

(No Model.) 2 Sheets—Sheet 1.

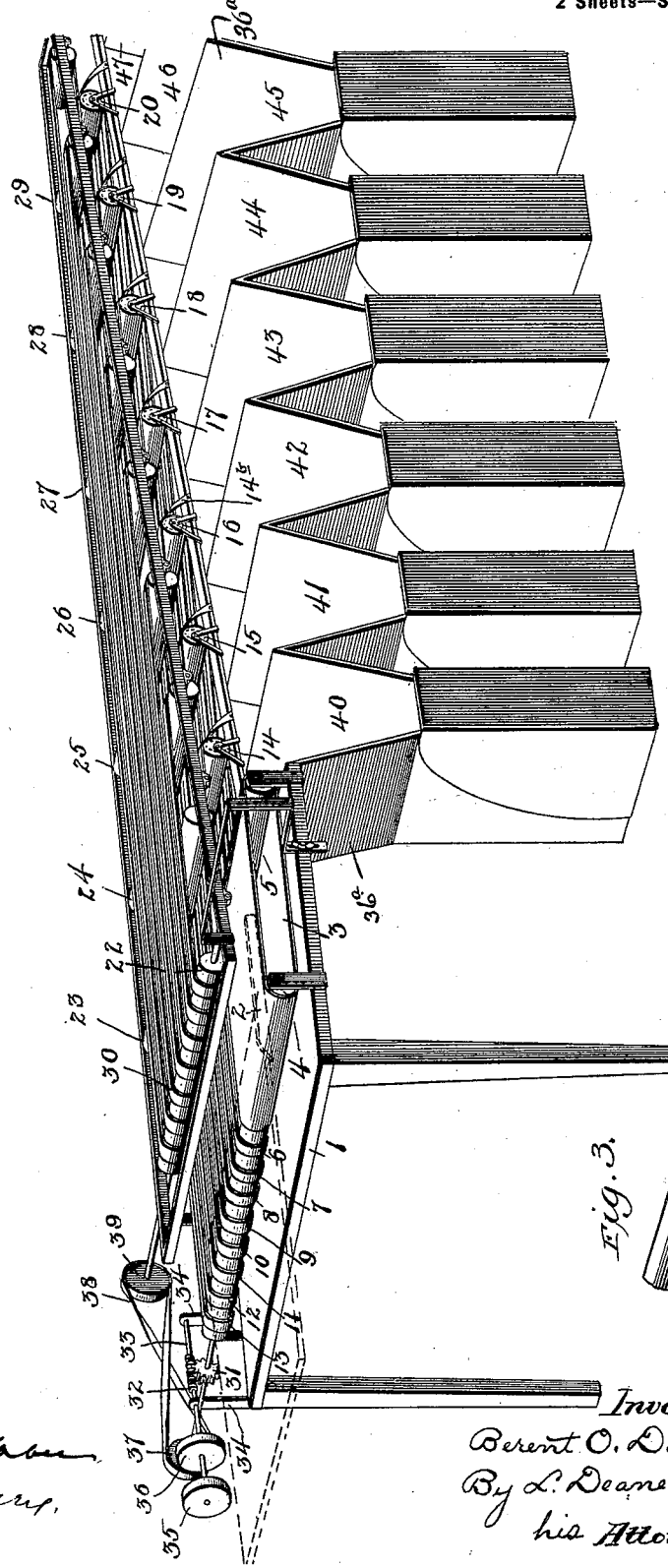


Fig. 1.

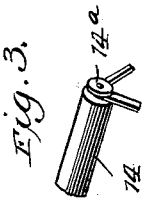


Fig. 3.

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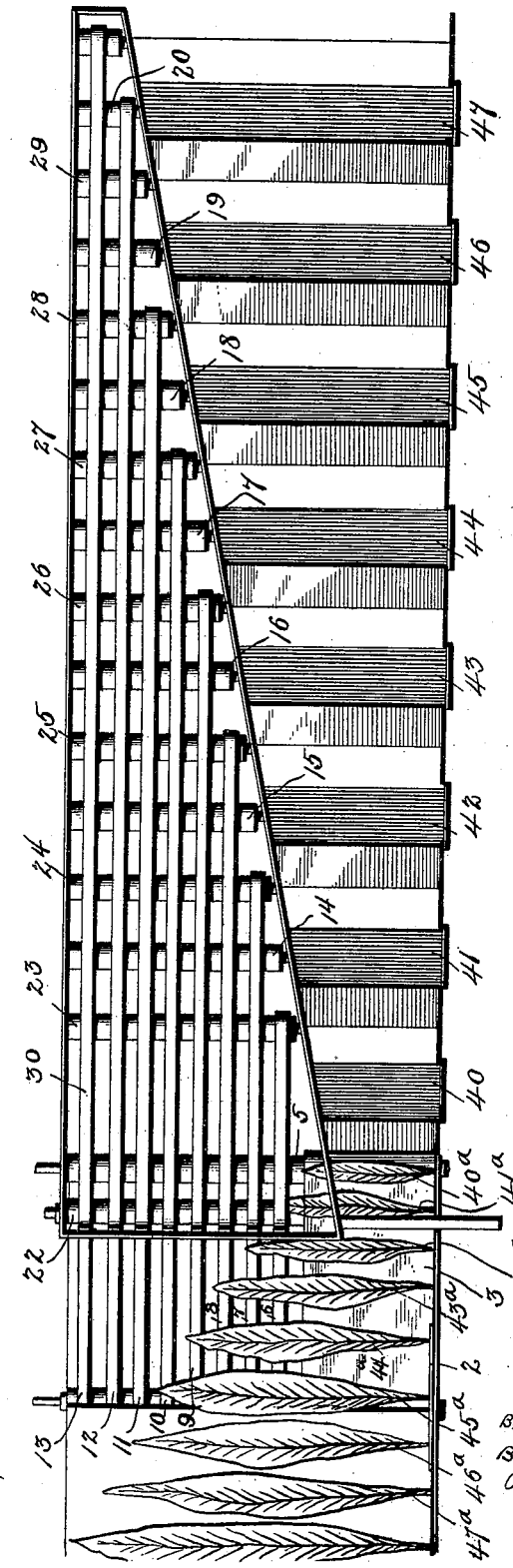
Fig. 2.

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# UNITED STATES PATENT OFFICE.

BERENT O. DAHL, OF VIROQUA, WISCONSIN.

## APPARATUS FOR SORTING TOBACCO-LEAVES.

SPECIFICATION forming part of Letters Patent No. 645,703, dated March 20, 1900.

Application filed March 14, 1899. Serial No. 709,045. (No model.)

*To all whom it may concern:*

Be it known that I, BERENT O. DAHL, a citizen of the United States, residing at Viroqua, in the county of Vernon and State of Wisconsin, have invented certain new and useful Improvements in Apparatus for Sorting Tobacco-Leaves, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to an apparatus for sorting tobacco-leaves with reference to their length. This work is ordinarily performed by hand and is necessarily slow and tedious. The purpose of the present invention is to provide a simple apparatus which can be conveniently managed by a single attendant, whereby leaves of varying lengths may be quickly sorted and distributed to separate compartments or receptacles, the work of sorting or separating being performed mechanically, the attendant being merely required to feed the leaves to the machine.

The features of construction of the machine will be fully described hereinafter and are illustrated in the accompanying drawing, in which—

Figure 1 is a perspective view of the apparatus complete, portions of the supporting parts being shown in dotted lines only. Fig. 2 is a plan view of the same, and Fig. 3 is a detail view of one of the small rollers.

The reference-numeral 1 designates a table provided at one end with a transverse cleat 2, which constitutes a stop and gage, against which the butts of the leaves bear to facilitate their being conveniently passed to the apparatus.

3 designates an endless apron supported upon parallel rollers 4 and 5, mounted in suitable bearings. A series of endless conveyer-belts 6, 7, 8, 9, 10, 11, 12, and 13 are arranged parallel to the apron 3. These belts are supported at one end of the machine upon the roller 4, which supports the apron 3; but as said belts vary in length each is supported upon an independent roller, (designated by the numerals 14, 15, 16, 17, 18, 19, and 20.) Above these rollers 14 to 20 I locate a second set of rollers, (designated by the numerals 22, 23, 24, 25, 26, 27, 28, and 29.) These rollers, as well as those for the lower belts, vary in length and are provided with endless belts 30.

Upon the roller 4 is mounted a pinion 31, which gears with a worm 32, mounted upon a shaft 33, which is supported in bearings formed in brackets 34, projecting from the table. The shaft 33 is provided with fast and loose driving-pulleys 35 and 36. Upon the end of the roller 4 is a pulley 37, which is connected by a crossed belt 38 with a similar pulley 39 on an extension of the roller 22.

The numerals 40, 41, 42, 43, 44, 45, 46, and 47 designate leaf-receiving receptacles, which are so located with relation to the rollers and conveyer-belts that there is a separate receptacle for each pair of said belts. This relation of the parts requires that the receiving-receptacles be of different lengths.

While I do not desire to restrict my invention to any particular construction of receptacle for receiving the leaves, I preferably employ for each receptacle a box-like compartment having a flaring mouth formed by inclined side walls $36^a$, forming a chute to direct the leaves downward.

The operation of the machine is as follows: The leaves are lifted by the attendant from the table 1 to the apron 3. The leaves shown in the drawings are of graduated lengths to better illustrate the operation and are designated by the numerals $40^a$, $41^a$, $42^a$, $43^a$, $44^a$, $45^a$, $46^a$, and $47^a$. As the apron and belts travel in the direction of the arrows the shortest leaf $40^a$ will drop into its proper receptacle 40. The leaf $41^a$ being longer than the leaf $40^a$ will extend over the belt 6 and be caught between said belt and the adjacent upper belt. When these belts have carried the leaf $41^a$ over the receptacle 40 and to a position above the next receptacle 41, it is released and drops down the chute of said receptacle 41. In like manner the next leaf $42^a$ will be carried by the belt 7 (and its coöperating upper belt) to the receptacle 42, and so on for all of the leaves shown, each being delivered to its own receptacle.

It is obvious that the leaves need not be arranged in any particular order upon the apron 3 with reference to length, but that each leaf will be conveyed to its proper compartment and there released automatically.

The chutes are arranged low enough to prevent the butts of the leaves after passing from the apron from engaging the walls of

the chutes and to allow the leaves to be suspended at a sufficient angle to insure their sliding along smoothly and dropping only at the proper time.

To prevent tearing or damaging the leaves, I provide on the inner end of each of the lower rollers in front of their bearings a small roller $14^a$ and a spring $14^b$. These rollers and springs permit the leaves to pass easily without liability of their being broken or torn, the rollers acting as antifriction-surfaces and the springs serving as guards to prevent the leaves from being caught between the supporting-framework and the rollers.

I claim—

1. In an apparatus for sorting tobacco-leaves, the combination with upper and lower parallel pairs of conveying-belts of different lengths for engaging the leaves, of an independent leaf-receiving compartment for each pair of belts.

2. In an apparatus for sorting tobacco-leaves, the combination with an endless apron, of parallel conveying-belts of different lengths arranged one above the other, and supported upon rollers of different lengths, and a separate receiving-receptacle for each pair of belts.

3. In an apparatus for sorting tobacco-leaves, the combination with an endless apron, of two series of conveying-belts of different lengths arranged parallel to each other and to the apron, one series of belts being arranged above the other, and a series of independent leaf-receiving receptacles, each provided with a chute to direct the leaves downward.

4. In an apparatus for sorting tobacco-leaves, the combination with an endless apron, and with two series of conveyer-belts of different lengths, of leaf-receiving receptacles, and a table arranged adjacent to the apron and provided with a transverse strip or guide for the butts of the leaves.

5. In an apparatus for sorting tobacco-leaves, the combination with a table, of an endless apron, two series of rollers one series being arranged above the other, belts of different lengths passing around said rollers, means for moving the rollers and belts, and a series of independent leaf-receiving receptacles, each communicating with a separate set or pair of belts.

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

BERENT O. DAHL.

Witnesses:
O. A. KALVESTRAN,
L. C. STEENBERG.