No. 648,001. Patented Apr. 24, 1900.

E. L. THURBER.

CONVEYING AND DRYING MACHINE.

(Application filed Aug. 19, 1899.)

(No Model.)

Fig. 1.

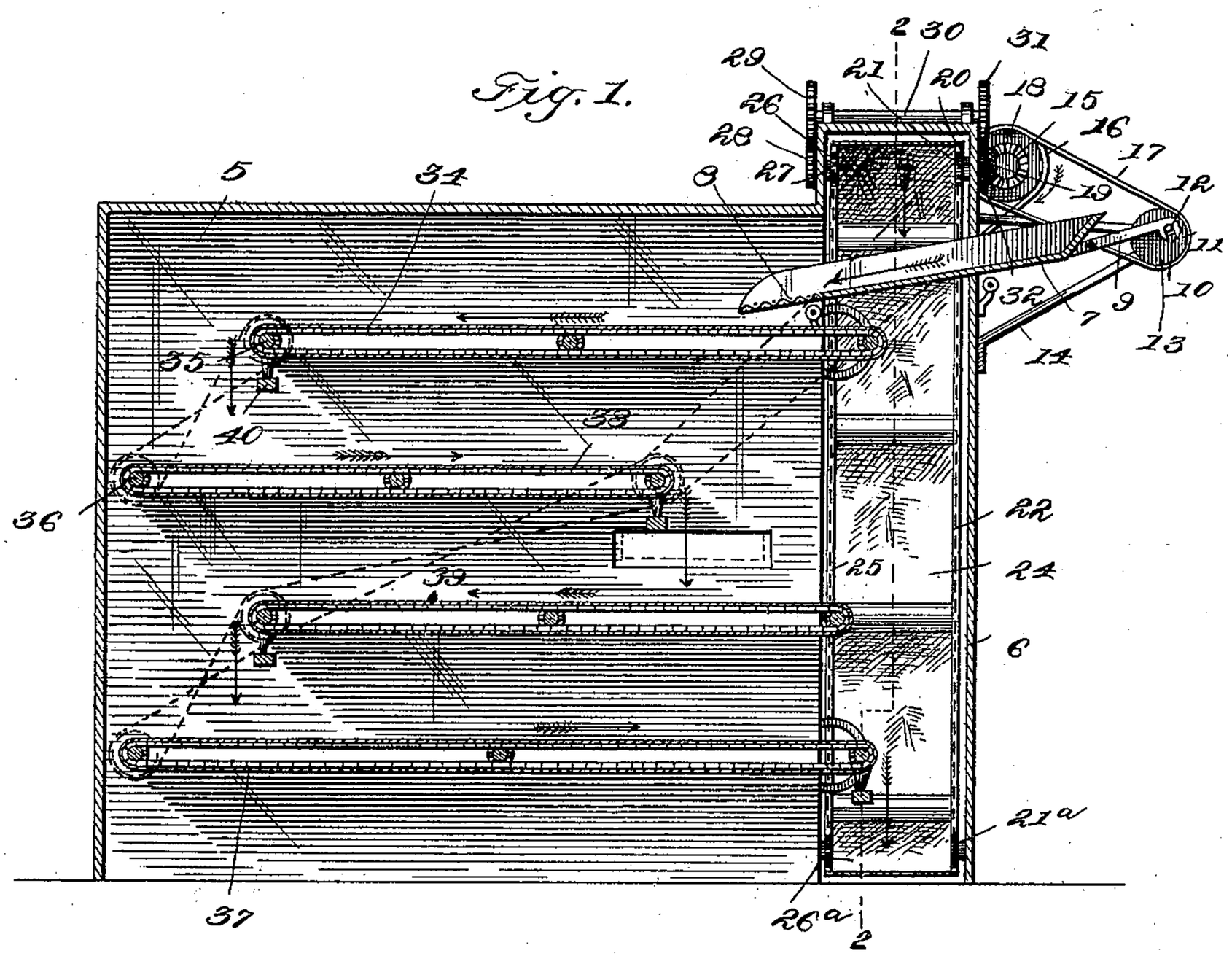
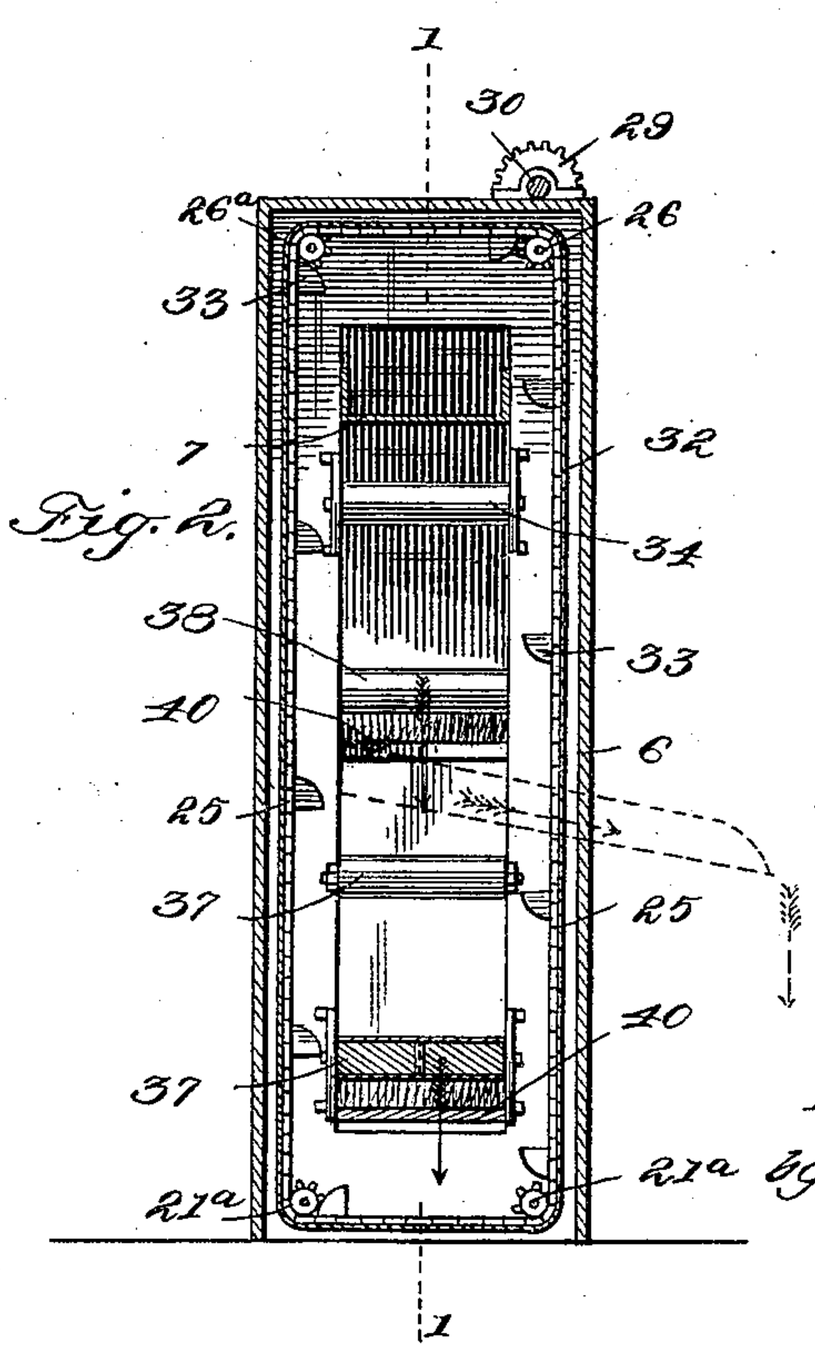


Fig. 2.



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CONVEYING AND DRYING MACHINE.

SPECIFICATION forming part of Letters Patent No. 648,001, dated April 24, 1900.

Application filed August 19, 1899. Serial No. 727,800. (No model.)

To all whom it may concern:

Be it known that I, EDWIN LYONS THURBER, a citizen of the United States, residing at New York, (Brooklyn,) in the State of New York, have invented a certain new and useful Conveyer and Drying-Machine, of which the following is a specification.

My invention relates to driers, and has for its object to provide a drier of the endless-belt type especially designed to prepare cocoanut in the dry flake-like form in which it is now commonly found in packages throughout the country, although it may be used for any other purpose to which it is applicable.

With this object in view my invention consists of a vibrating discharge-table arranged in a suitable casing and designed to discharge the material upon an endless belt arranged adjacent thereto, and a series of like belts positioned below the first-named belt, the bottom one of which discharges into a vertical conveyer-shaft, whereby the material is hoisted and again deposited upon the discharge-table, when it can again be deposited on the endless belt and the process will be repeated.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view taken through a device constructed in accordance with my invention on the line 1 1 of Fig. 2. Fig. 2 is a vertical transverse section through the line 2 2, Fig. 1.

Referring now to the drawings by reference-numerals, 5 indicates a suitable housing provided with an open end communicating with an enlarged vertical chamber or elevator-shaft 6. Projecting through the end of this shaft is a vibrating discharge table or shaker 7, provided at its forward end with a screen-bottom 8. Extending rearwardly from the table or shaker is an actuating-arm 9, having a bifurcated head 11, which engages the eccentrically-arranged pin 12 on the pulley 13, journaled in a suitable bracket 14.

15 is a drive-shaft to which is keyed a drive-pulley 16, connected to and designed to drive the pulley by means of a belt 17. Immediately in front of this pulley and keyed to the shaft 15 is a gear-wheel 18, meshing with a similar gear 19 on the stub-axle 20, on the end of which is a sprocket-wheel 21, the teeth of which engage the links of the chain 22, forming part of the conveyer or elevator 24. A similar chain 25 is driven by a sprocket-wheel 26 on the inner side of a short axle 27, and on the outer end of this axle is a gear-wheel 28, the last-named gear and sprocket being driven by a gear 29 on the shaft 30, journaled above the elevator and carrying a gear 31, which meshes with a similar gear 32 on the stub-axle 20.

By reference to Fig. 2 it will be noticed that the conveyer 24 comprises besides the chains 22 and 25 a covering of suitable textile fabric 32^a, which connects them, and journaled between the chains (in such manner that they will not interfere with the working of the sprockets) are a series of transversely-arranged conveyer-buckets 33, and the chains are guided at the bottom over sprockets 21^a and 26^a.

34 is a longitudinally-arranged endless conveyer-belt operated by the shaft 35 and 36. 37 is a bottom conveyer of the same construction as the one designated by the numeral 34, and between these conveyers I will provide two or more intermediate conveyers 38 and 39.

40 are suitable brushes of any approved construction to keep the conveyer-belts clean.

The buckets are placed upon the inner face of the fabric, and the fabric is caused to pass from one side of the shaft to the other at the top and bottom above and below the shaker and the end of the conveyer 37, respectively. In this manner the material from the conveyer is delivered upon the moving fabric and is collected in the buckets and by them carried above the shaker and deposited thereon as the buckets pass over it. This construction prevents the scattering of the material as it passes on its journeys through the machine.

The operation of my device is as follows: The interior of the housing 5 is heated in any suitable manner and the material to be dried is deposited upon the shaking-table 7. The machine is then set in motion and the material will gradually be deposited upon the conveyer 34, and in turn to the other longitudinal

conveyers, following the course indicated by the arrows in Fig. 1, until it is finally conveyed to the elevator 24, when the buckets therein will take it up and again deposit it upon the shaking-table, to be distributed again upon the conveyer 34 to have the process repeated until practically all moisture is evaporated therefrom. When the material is sufficiently dried, it will be discharged from the conveyers through the medium of a removable trough, (shown in dotted lines in Fig. 2,) which will be projected through an opening in the side walls of the housing.

Having thus fully described my invention, what I claim as new, and desire to obtain by Letters Patent of the United States, is—

1. In a drying apparatus, the combination with a casing, and a shaft communicating with one end thereof, of four pulleys at each end of the shaft, one in each corner, a conveyer on said pulleys, the inner face of which is provided with transverse buckets, a series of conveyers in the casing, the lower one of which extends into the shaft above the bottom of the conveyer, and a shaker extending from under the top of said conveyer in the shaft over the top conveyer in the casing.

2. In a drying apparatus, the combination with a casing and a shaft communicating with one end thereof, of a series of alternately-arranged conveyers in the casing, the bottom one of which projects into the shaft, a brush under the return end of each of said conveyers, a conveyer in the shaft, and a shaker in the shaft, the free end of which projects over the top conveyer in the casing, and is provided with a screen.

3. In a drying apparatus, the combination with a casing and a shaft communicating with one end thereof, the upper end of the shaft being provided with openings, of a conveyer in the shaft upon opposite sides of said openings, a series of conveyers in the casing, the bottom one of which projects into the shaft over the bottom of the conveyer, a shaker extending through the openings in the shaft, the inner end of which projects over the top conveyer in the casing and the outer end is provided with a pitman, a pulley connected with the pitman, and a driving shaft provided with means for driving said pulley and operating the conveyer in the shaft.

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