No. 823,418. PATENTED JUNE 12, 1906.

F. F. LANDIS.

CONVEYER.

APPLICATION FILED AUG. 20, 1904.

Fig. 1.

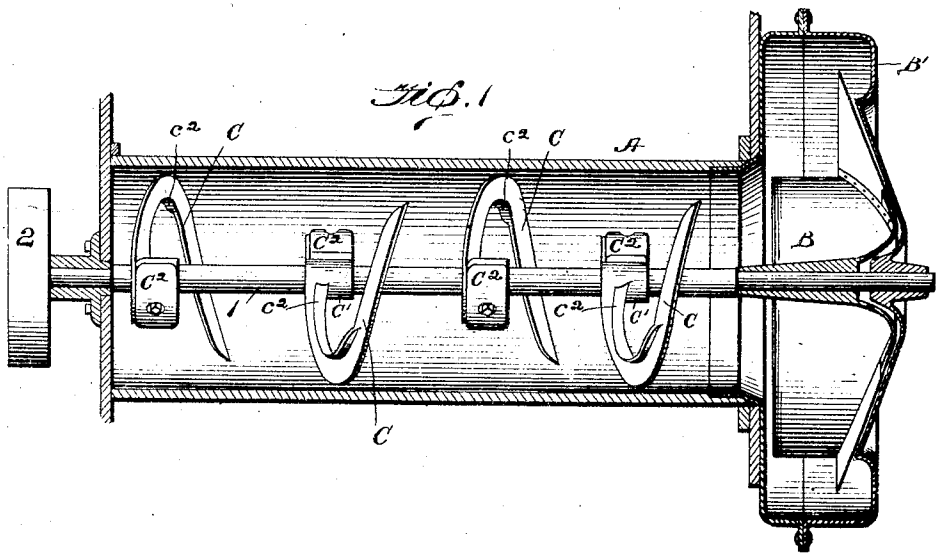


Fig. 2.

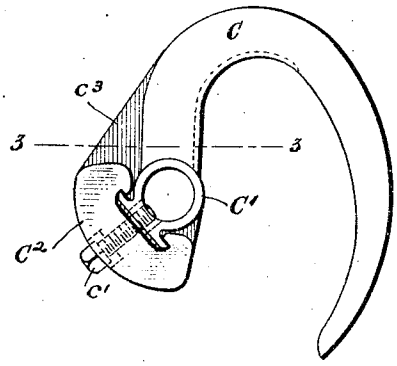


Fig. 3.

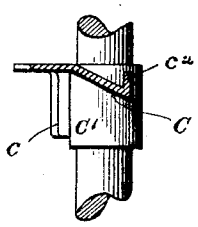


Fig. 4.

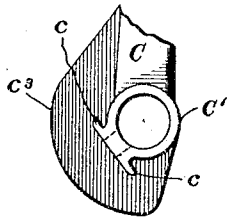
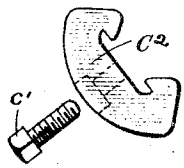


Fig. 5.



Witnesses
B. M. Offutt.
Chas. K. Davies.

Inventor
Frank F. Landis,
by E. W. Bradford
Attorney

UNITED STATES PATENT OFFICE.

FRANK F. LANDIS, OF WAYNESBORO, PENNSYLVANIA.

CONVEYER.

No. 823,418. Specification of Letters Patent. Patented June 12, 1906.

Application filed August 20, 1904. Serial No. 221,493.

To all whom it may concern:

Be it known that I, FRANK F. LANDIS, a citizen of the United States, residing at Waynesboro, in the county of Franklin and State of Pennsylvania, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

In the use of conveyers of that general construction shown in my former patent, No. 611,383, wherein the conveyer-sections are mounted upon the same shaft with the blast-fan or discharger, the speed of the shaft required to enable the discharger to properly do its work is oftentimes much greater than is necessary for the best operation of said conveyer-sections. The result is that the blades do not take in the material as readily and evenly as when run more slowly and are more likely to break and grind said material.

My said invention consists, therefore, in a construction of such conveyer whereby said difficulty is obviated.

Said improvements relate particularly to the construction of the conveyer-sections with single arms, each arranged upon a hub and mounted on the shaft, the arms of the several sections projecting alternately from opposite sides of the shaft, whereby a conveyer is provided with only one-half the number of arms and their contact with and grinding effect upon said material thus greatly reduced and the entrance of the material into said conveyer facilitated, all as will be presently more fully described and claimed.

Referring to the accompanying drawings, which are made a part hereof and on which similar reference characters indicate similar parts, Figure 1 is a section through the discharger and conveyer casings at the rear end of the threshing-machine separator, arranged to receive the straw from the straw-rack, the conveyer-sections being shown in elevation; Fig. 2, a front elevation of one of said sections separately; Fig. 3, a detail cross-section on the dotted line 3 3 in Fig. 2; Fig. 4, a view similar to a portion of Fig. 2, showing the hub with the counterbalance-weight removed; and Fig. 5, a view of said counterbalance-weight and the set-screw for securing the same separately.

In said drawings the portions marked A represent the conveyer-casing, B the discharger, and C the conveyer-sections. The casing A, discharger B, the discharger-casing B′, in which said discharger is mounted, longitudinal shaft 1, and driving-pulley 2 are all of a well-known and common construction and arrangement, as shown in my patent above referred to, and need no further description herein.

The conveyer-sections are of the number required for the particular use for which the conveyer is designed and are mounted at suitable intervals on shaft 1. Each consists of a curved arm mounted upon a hub C′, which has an eye adapted to fit upon the shaft 1. Each of said arms extends for a distance radially from said hub, being curved forward somewhat, and extends outwardly from the center a distance which will bring its outer edge into close proximity to the surface of the casing A. It then extends spirally in a forward direction toward the discharger end of said casing, its outside edge being curved to correspond substantially with the curvature of said casing, so that said edge will run near thereto to its end. Each arm thus embraces about one-quarter of a circle of the diameter of said casing, and the several arms being arranged to extend alternately from the opposite sides of the shaft the material delivered from the outer end of one arm will be in position to be taken up and carried forward by the rear portion of the next arm, and ample open space for the receipt of the material is provided between said arms.

In order to secure an even and satisfactory operation of such conveyer, I find that it is necessary to have the arms balanced upon the shaft, not only in relation to each other, but that each arm shall be balanced in itself. I therefore provide for each arm a counterbalance-weight C^2, having a grooved recess in its front face adapted to slide upon transversely-extending wings or flanges c, formed on the hub opposite to said arm and in line with the center of gravity thereof in both directions, as shown most plainly in Figs. 1 and 2. Said weight C^2 is secured in position by means of of the set-screw c', which extends through a screw-threaded perforation in said weight and projects through a perforation in the hub and impinges against the side of shaft 1, thus serving the double purpose of securing the weight to the hub and the hub and its conveyer-arm in the desired position on said shaft. Each of said arms is provided with a stiffening-flange c^2 on its rear side extending from the hub outwardly a sufficient distance for the purpose,

also with a strengthening-web c^3, extending on the front side at the base of said arm. Each of said arms is thus mounted upon the shaft in a perfectly-balanced condition in all directions and an even and uniform operation thus assured. In general the arrangement and operation are substantially the same as in my patent above referred to, except that by reason of the improvements above described I am enabled to run the shaft at a very high rate of speed to secure the best result from discharger B without impairing the effectiveness of the conveyer, the arms being so widely separated that even at a high rate of speed they will take in the straw and other material without difficulty and convey it to the discharger with ample speed.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A conveyer comprising a casing, a driving-shaft having a discharger upon one end, conveyer-sections arranged at intervals throughout its length, each of said sections consisting of a hub and a single arm curved from said hub, first substantially at right angles with the shaft and then in a spiral direction toward the discharger end, substantially as set forth.

2. A conveyer comprising conveyer-sections consisting of a hub having a single spiral arm projecting from one side thereof and a counterbalance-weight mounted upon its opposite side substantially as set forth.

3. In a conveyer, the combination of the shaft having a series of conveyer-sections thereon, each of said conveyer-sections consisting of a hub having an outwardly-curved spiral arm projecting from one side thereof, said sections being arranged with their adjacent arms projecting from the shaft in different directions, substantially as set forth.

4. A conveyer-section comprising a hub carrying an outwardly and forwardly curved arm upon one side thereof, and a counterbalance-weight upon its opposite side in line with the center of gravity of said curved arm, substantially as set forth.

5. In a conveyer, the combination of a shaft, conveyer-sections mounted thereon each comprising a hub having a conveyer-arm formed on one side and projecting substantially at right angles with the shaft and then in a spiral direction, a counterbalance-weight mounted opposite the center of gravity of said arm, and a set-screw for securing said weight to said hub and said section to said shaft, substantially as set forth.

6. A conveyer comprising a conveyer-casing and shaft mounted thereon, a discharger mounted on the outer end of said shaft in a discharger-casing, said discharger-casing communicating with said conveyer-casing, a series of conveyer-arms mounted on said shaft each being formed to extend in a direction substantially at right angles with the shaft for a distance and then curved on a circle from the center of the shaft forwardly, and a counterbalance-weight located on the opposite side of said shaft in a line with the center of gravity of said arm, substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Washington, District of Columbia, this 25th day of July, A. D. 1904.

FRANK F. LANDIS. [L. S.]

Witnesses:
MARY A. WILSON,
E. W. BRADFORD.