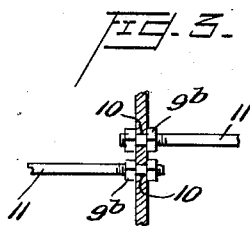
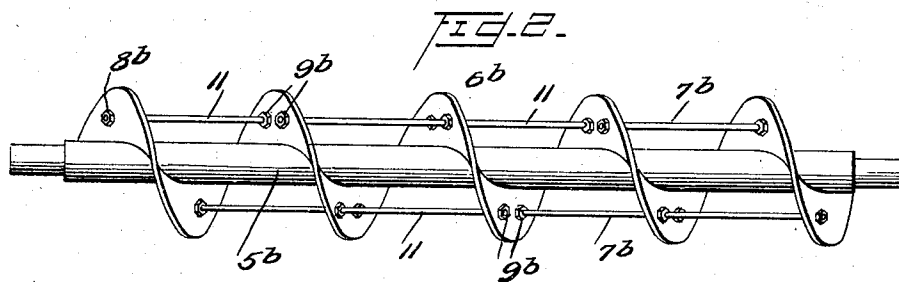
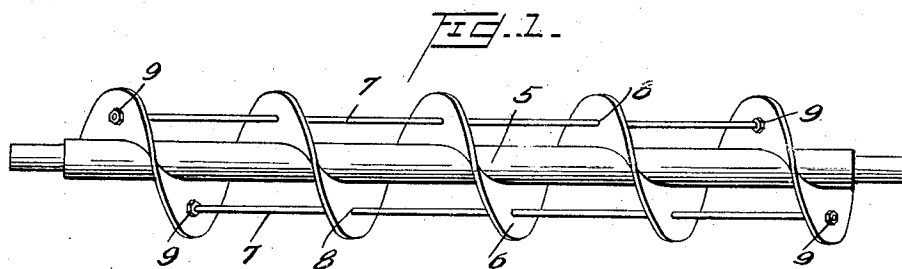


June 10, 1930.

J. O. BAILEY
AGITATING CONVEYER
Filed March 8, 1929

1,763,121



Inventor
Joseph Oswell Bailey

By

Shreve, Crave & Gordon

Attorneys

UNITED STATES PATENT OFFICE

JOSEPH OSWELL BAILEY, OF ATLANTA, GEORGIA

AGITATING CONVEYER

Application filed March 8, 1929. Serial No. 345,538.

Generically this invention relates to conveyers but it is more particularly directed to the type comprising a continuous spiral blade for use in machines for mixing and blending both dry and wet products.

The principal object of this invention is the provision of diametrically opposed rods extending parallel with the axis of the conveyer at an equal distance therefrom adapted to interconnect the outer edges or pitch sections of the blade on diametrically opposite sides of the shaft to not only provide a reinforcement but to effect mixing and blending both dry and wet products such as stock food, flax, candy, syrups and other liquids, paints, minerals, and the like.

Another important object of this invention is the provision of an agitating conveyer of this type having a series of diametrically opposed means interconnecting the outer edges of the flight sections, adapted to strengthen the blade structure and to effect with respect to the above mentioned frame a double agitation of the materials being mixed, and specially designed for heavy duty, not only effecting thorough mixing and blending where a number of ingredients are used, but to prolong the life of the conveyer under the strain of heavy load stresses and hard usage.

A still further object of this invention is to provide a heavy duty conveyer with the intermediate flight sections provided with double perforations, each pair of sections being connected by an individual rod section secured by adjustable lock nuts and thereby enabling the relative adjustment of the flight sections, and to provide a uniform brace to each pitch, rendering this form specially adaptable for intensive mixing under severe operating conditions.

With these and other objects in view, which will become apparent as the description proceeds, the invention resides in the construction, combination and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which like characters of reference indicate like parts throughout the several figures, of which:

Fig. 1 is a view in elevation of a section of my improved agitating conveyer showing the diametrically opposed mixing and reinforcing rods operatively interconnecting the flight sections;

Fig. 2 is a similar view showing the blade provided with a series of diametrically opposed agitating and reinforcing means, each of such means comprising a plurality of sections interconnecting the respective flight sections; and

Fig. 3 is a detail view of one of the sectional reinforcing and agitating rods showing the lock nut structure.

The types of conveyers with which I am familiar employing various agitating means, either depending upon the formation of the blade sections or of paddle locking members secured to the shaft intermediate said sections and generally known as the cut flight or paddle type have proven deficient and unsatisfactory by reason of the tendency of the paddles to become broken off or bent, thereby effecting an undue strain on the flight sections, and it was to overcome such deficiencies and to provide an agitating continuous flight conveyer having means for reinforcing the flight sections on diametrically opposite sides of the shaft and at points in parallel alignment therewith, such means at the same time constituting agitating or mixing elements, such conveyer adapted to be also formed with a plurality or series of such reinforcing and mixing elements, depending upon the particular requirements for effecting a thorough mixing and blending of both dry and wet products where a number of ingredients of varying percentages are employed, that I designed the agitating conveyer forming the subject matter of this invention.

In the illustrated embodiment characterizing this invention there is shown a shaft 5 having a continuous flight spiral conveyer blade 6 mounted thereon, and a rod 7 adapted to extend through each series of lined openings 8, in the outer edges of the flight or pitch sections in parallelism with said shaft and on diametrically opposed sides thereof.

The rod 7 is adapted to be secured by lock

nuts 9 positioned on opposite sides of each opposite end flight section, said rods not only effecting reinforcement of the flight sections and strengthening the entire flight structure but constituting agitating and mixing elements adapted to effect a thorough mixing and blending of both dry and wet products.

In Fig. 2 a modified form of conveyer is shown having a shaft 5^b and blade 6^b similar to shaft 5 and blade 6 above described and formed with a plurality or series of diametrically opposed reinforcing and agitating means 7^b diametrically opposed and extending in substantial parallelism with respect to shaft 5^b, except in this form the intermediate flight or pitch sections are formed with double apertures 10 in substantial longitudinal alignment with the perforations 8^b in the end sections and each of the reinforcing and agitating means 7^b comprises a plurality of individual sections 11. Each of the sections 11 is provided at each end with lock nuts 9^b adapted to engage opposite sides of the respective flight sections which it interconnects and braces, as will be clear without further description. Each of the rods as above shown constitute adjustable braces between each pair of flight sections through which it extends, and by virtue of the lock nut structure any one or more of the flight sections may be readily adjusted to restore uniform pitch to said flight section should it become distorted through usage.

From the above it is apparent that this type of conveyer effects what may be termed double agitation of the materials being mixed, is of strong construction and specially adaptable for intensive mixing, and capable of long life under the most trying operating requirements, while at the same time coming entirely within the spirit and scope of the preferred type above described.

It will be clear from the above that I have designed an agitating conveyer adapted to expeditiously and efficiently mix and thoroughly blend both dry and wet products composed of a number of ingredients of varying percentages, capable of utilization irrespective of consistency or nature of the product being mixed, yet constructed of few parts, simple in design, manufacturable at a reasonable cost and efficient for the purposes intended.

Although in practice I have found that the form of my invention illustrated in the accompanying drawing and referred to in the above description as the preferred embodiment, is the most efficient and practical, yet realizing the conditions will necessarily vary, I desire to emphasize that various minor changes in details of construction, proportion and arrangement of parts, may be resorted to within the scope of the appended claim without departing from or sacrificing any of the principles of this invention.

Having thus described my invention, what I desire protected by Letters Patent is as set forth in the following claim:

A conveyer comprising a shaft having a continuous spiral conveyer blade mounted thereon and extending substantially throughout its length formed with a plurality of pitched sections, the outer edges of the opposite end pitch sections being formed with an opening, the intermediate sections being formed with a pair of openings in substantial alignment with the end opening, a series of rod sections extending through the respective openings, lock means carried by said rods and adapted to engage opposite sides of each respective pitch section, whereby said rods constitute agitating and mixing elements and bracing means for each flight section with respect to its adjacent section.

JOSEPH OSWELL BAILEY.