(No Model.)

A. H. BRAINARD.

CONVEYER.

No. 383,556. Patented May 29, 1888.

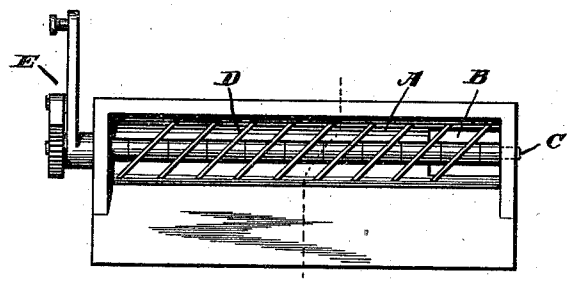


Fig. 1.

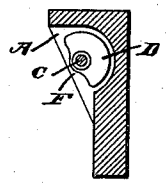


Fig. 2.

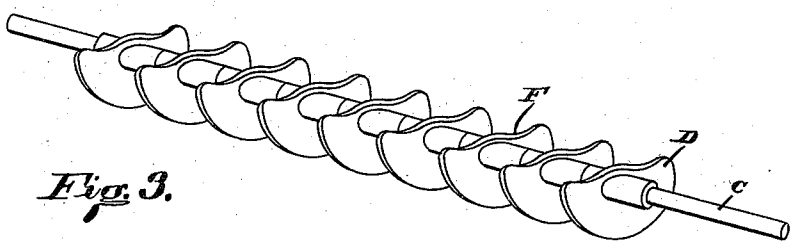


Fig. 3.

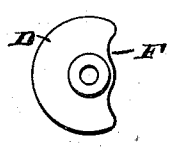


Fig. 4.

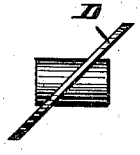


Fig. 5.

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UNITED STATES PATENT OFFICE.

AMOS H. BRAINARD, OF HYDE PARK, MASSACHUSETTS.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 383,556, dated May 29, 1888.

Application filed December 21, 1887. Serial No. 258,587. (No model.)

To all whom it may concern:

Be it known that I, AMOS H. BRAINARD, of Hyde Park, Norfolk county, Massachusetts, have invented certain new and useful Improvements in Conveyers, of which the following is a specification.

This invention pertains to that class of devices intended to produce slow progressive movement of material horizontally, and generally known as "conveyers."

My improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a plan of a conveyer embodying my improvements; Fig. 2, a vertical transverse section of the same; Fig. 3, a perspective view of the rotating part of the conveyer; Fig. 4, an end view of one of the conveyer-vanes; and Fig. 5, a plan of one of the vanes, Figs. 3, 4, and 5 being upon a somewhat enlarged scale.

In the drawings, A indicates a horizontal trough, along which the material is to be conveyed from the left to the right; B, the outlet-opening at the right thereof; C, the conveyer-shaft supported in suitable journals and arranged axially in the trough and arranged for rotation; D, a series of inclined vanes secured to the shaft, as by being forced tightly thereon, or by other well-known means, said vanes being arranged parallel to each other and oblique to the axis of the shaft; E, a pawl-and-ratchet mechanism illustrative of means which may be employed to give intermittent rotation to the conveyer-shaft; and F, cut-away portions of the vanes, these cut-away portions of the vanes of the series being arranged in line, as shown in the drawings, so that one side of the shaft is practically free from the presence of vanes, the transverse contour of the conveyer proper representing, therefore, a true circle except at the cut-away portion.

The trough A is to be shallow, its depth to correspond substantially with half the diameter of the conveyer-circle.

The conveyer may be rotated continuously, if desired; but in practice it is found preferable to give it an intermittent motion, which motion may be produced by any suitable mechanism—as, for instance, the pawl-and-ratchet mechanism shown in the drawings. The material to be conveyed is received in the trough at the left-hand end, and by the rotation of the conveyer is carried to the right-hand end, where it flows downward through the discharge-opening B. If desired, the end of the trough may be left open for the endwise outflow of the material being conveyed.

Material lying at the bottom of the trough is entirely free from the action of the vanes when their cut-away portions come below the shaft. As the conveyer revolves, the vanes act upon the material and lift it and cause it to drop again to the bottom of the trough in advance of its previous position, and in this way the material is gradually moved to the right and finally to the outlet.

It is to be understood that my conveyer differs from a worm in construction, mode of operation, and in result. The worm as used for conveyers is formed by a continuous spiral vane like the thread of a screw, the continuity of the vane being, however, often interrupted by spaces circumferentially distributed, this resulting from the fact that the vane is built up out of a series of flutes. The action of such worm-vane is continuous throughout the revolution of the worm. Such a worm clogs when it attempts the handling of certain materials—such, for instance, as wrought-iron or steel cuttings—and becomes totally inoperative.

My conveyer consists of a series of vanes arranged parallel to each other and oblique to the axis of the shaft, said vanes extending through a portion only of the circumference of the circle swept by the periphery of the vanes. The advance point of one vane is axially in advance of the heel of the vane immediately in front of it. There is thus no continuity of vane. In operation these oblique vanes do not act to produce a continuous procession of the material, but each vane takes stationary material as it finds it and advances it and leaves it stationary within the reach of the next vane, which does not reach the material until it has been sometime stationary.

My improved conveyer handles wrought-iron and steel cuttings with facility—a result not attained by any rotary conveyer of which I have knowledge.

I claim as my invention—

In a conveyer, the combination, substantially as set forth, of a trough to receive the material to be conveyed, a bearing for the support of a rotary conveyer-shaft, means for rotating such shaft, and a series of vanes secured to said shaft, said vanes being arranged parallel to each other and oblique to the axis of the shaft, the vanes corresponding to a portion only of the conveyer-circle, so that one longitudinal side of the conveyer is free from vanes, whereby when the conveyer-shaft is so turned that the vanes project upwardly from the shaft no vanes will project downwardly into said trough.

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