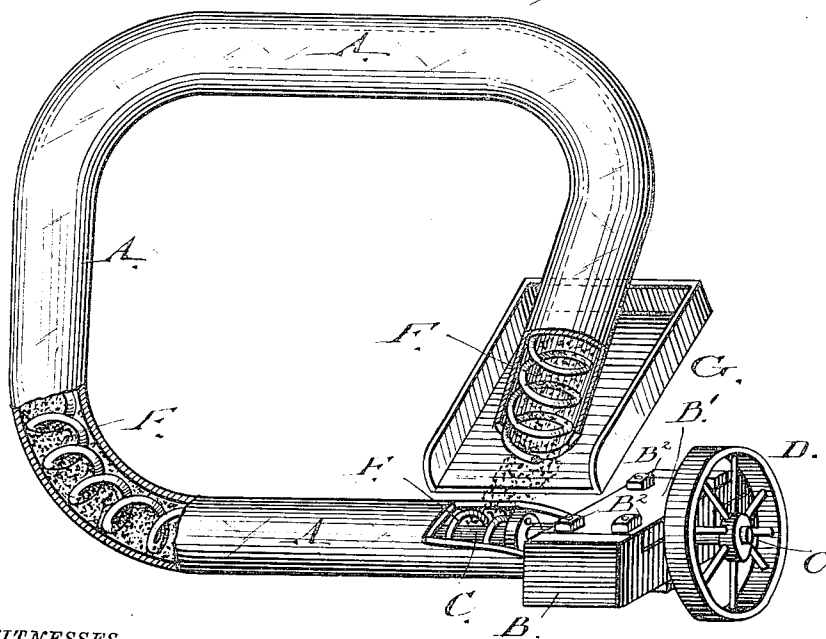
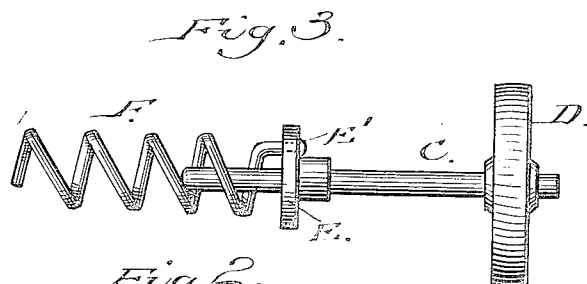
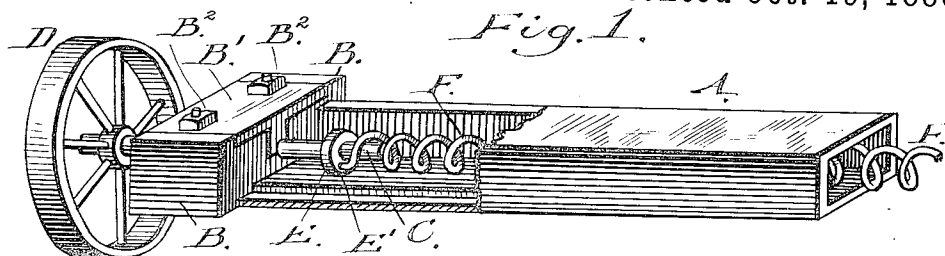


(No Model.)

A. WISSLER.
CONVEYER.

No. 351,014.

Patented Oct. 19, 1886.



WITNESSES

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UNITED STATES PATENT OFFICE.

AARON WISSLER, OF BRUNERSVILLE, PENNSYLVANIA.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 351,014, dated October 19, 1886.

Application filed January 11, 1886. Serial No. 188,186. (No model.)

To all whom it may concern:

Be it known that I, AARON WISSLER, a citizen of the United States, residing at Brunersville, county of Lancaster, State of Pennsylvania, have invented a new and useful Improvement in Conveyers, of which the following is a specification.

This invention relates more particularly to the class of conveyers adapted to carry from point to point grain or articles of a kindred nature; but it is also adapted to perform the same duty for tan, planer-chips, and small coals.

The object of the invention is to furnish a conveyer adapted to carry any suitable article delivered within its inclosure to any point in a horizontal, angular, or vertical line, and to discharge the same at such selected points without any complicated lines of shafting, pulleys, bands, or gears to drive the same.

Conveyers from the earliest days of milling up to the present time have changed very little in form. Originally a wooden shaft with wings pinned at an angle with its axis and set in a spiral line upon the circumference of the shaft and set within a case served to distribute the grain and flour; next in use a short cast-iron shaft with a continuous spiral blade integral therewith; these short lengths were coupled together to form the proper length of conveyer; next a light wrought-iron shaft (very frequently a gas-pipe) of the desired length with the spiral wings formed of sheet-iron or sheet-steel segments hammered upon dies of the proper form, to secure the spiral blade at every point of its circuit at right angles with the shaft, the segments subsequently riveted together, strung upon the shaft, and secured thereto by riveting to studs driven at suitable points into the shaft. Occasionally plain belts have been used for the same purpose; and, finally, a plain helix of wire driven from one end. (See patents to Farquhar, No. 104,004, June 7, 1870, and Edmonson, No. 307,275, October 28, 1884—grain-conveyers.) The latter devices would deliver grain or matter of a similar character upon a dead-level, but would prove inoperative upon attempting to lift to any height above the same, owing to the pitch of the screw being uniform throughout its length. In all the conveyers enumerated the direction

of delivery is in straight lines for each length or flight of conveyer used, changes of direction in a continuous conveyer being secured by delivery from each flight into a receiver, and the connection therewith of another flight, &c., each separately driven. Thus to deliver upon a horizontal or vertically-curved line the conveyer would form a series of polygonal divisions to the curve, each separately driven; whereas with my improvement the case would be formed to the desired curvature, and the coil inserted would be driven from one point only.

My invention saves nearly all the labor connected with either of the modes of construction described, furnishes an efficient conveyer, and places the manufacture of an effective conveyer in the hands of any intelligent mechanic, the expense of construction being not more than one-third that of the ordinary conveyer of the same capacity.

The drawings herewith, with the letters of reference marked thereon, together with a brief explanation, will enable those skilled in the art to make and use the same.

Figure 1 represents a conveyer made in accordance with my invention, adapted to deliver either in a horizontal or vertical direction, as the case may be placed. Fig. 2 is designed to show the flexibility of the device, the material originally delivered by the trough G into the conveyer-case, and after filling the same the action may be made continuous by the discharge being directed into the trough, as shown. Fig. 3 represents the driving-shaft detached from case, showing the connection of the helix with the collar.

In the drawings, A represents the case, which is made of any suitable material adapted to the purpose for which the conveyer is to be used, and may be wood or metal, as its use may indicate.

B is a wide bearing-box in connection with the case, provided with cap B' and bolts B². If desired, the bearing may be divided into two parts. C is a shaft adapted to be revolved within the same.

D represents a pulley, gear-wheel, or sprocket-chain wheel to drive the shaft, as may be found best adapted to the requirements of each particular operation.

E is a collar integral with the shaft, or secured upon the same in a suitable manner, and is provided with a perforation, E'.

The conveyer is constructed of a continuous length of coiled metal wire or bar, F, according to the nature and weight of the material to be handled and the distance to which the same is to be carried, and its section may be round or square. I have found, practically, that the pitch of the coil should about average the diameter of the same, as a maximum, and that for various purposes the pitch should change at quick bends, at receiving-points, and occasionally at the discharging-points. I do not therefore confine myself to any particular proportion of pitch to diameter of coil, which will be governed by circumstances of use.

When the length of conveyer exceeds fifteen feet, one or more lengths may be coupled together in any convenient and suitable manner to make up the required length. The coils may be produced by winding upon a bar in an ordinary lathe, or in special spring-coiling machines.

To construct a conveyer in accordance with my improvement, the case is first built to the desired form of outline to adapt it to receive and deliver the material to be carried to the proper points, and the inner section of the case may be square or circular. In either case the bends should not be too abrupt, and should be made a curve of a radius not less than twice the diameter of the coil. I give preference to the circular section. The coil is then cut to length and shoved into the case, following all its bends, until the discharge end is reached. The bearing box or boxes B are now secured to the case, or near to the same, and the shaft C laid in the bearings and secured by caps B' and bolts B' therein. The inner end of the coil F is then passed through the aperture E' of the collar E, and riveted to or otherwise secured to the same. A driving-pulley, gear-wheel, or sprocket-chain wheel upon the shaft provides the means for revolving the coil, and

the coils, whether right or left hand in their pitch, if arranged to deliver from the outer ends of the case, will, when the direction of their revolution is changed, draw in the material at the outer end and discharge the same at their inner or shaft-connected ends. At any desired points openings may be made in the case, the same being controlled by gates, whereby the material to be handled may be introduced within the conveyer-case, or the same may be discharged at such points.

The applicability of this conveyer has been practically tested, and its simplicity and inexpensiveness will be apparent to an expert.

Having shown the construction, use, and advantages of my invention, I desire to secure by Letters Patent the following claims thereon:

1. As an improved article of manufacture for transportation of materials adapted thereto, a continuous bar or wire coil of suitable metal, constructed with a differential pitch at curves in its inclosing-case, and with a uniform pitch of coil at all other points intermediate thereto, in combination with a short driving-shaft having pulley D, and a collar, E, to which one end of said coil is secured, substantially as and for the purpose set forth.

2. As an improved article of manufacture for transportation of materials adapted thereto, a coil of suitable metal of a differential pitch at respective points, and of a uniform pitch between the same, in combination with a case adapted to receive the same, carried from the receptive to the discharge point in an unbroken straight or curved course, or combination of the same, whereby the articles transported may be delivered at right angles with the line of departure or returned to the same point with but one driving-shaft and single connection with the motor, substantially as and for the purpose set forth.

AARON WISSLER.

Witnesses:

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