F. OGDEN.

MACHINES FOR MAKING SPIRAL CONVEYORS.

No. 182,220. Patented Sept. 12, 1876.

Fig. 1.

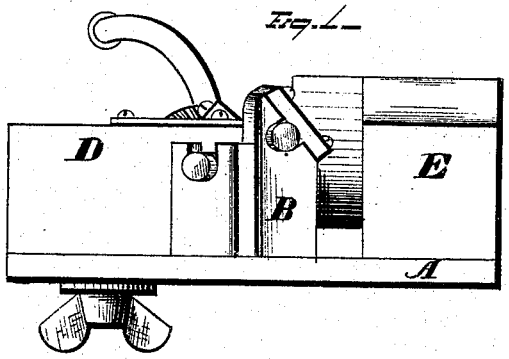

Fig. 2.

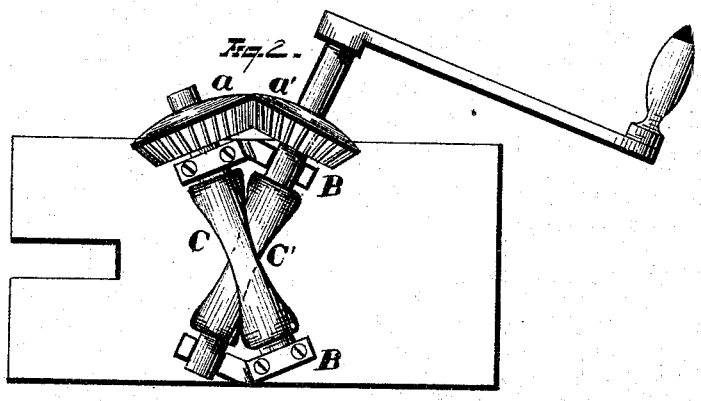

Fig. 3.

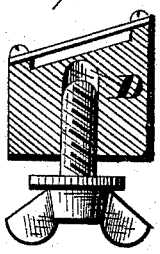

Fig. 4.

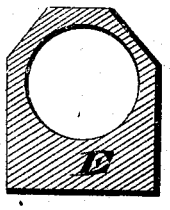

Fig. 7.

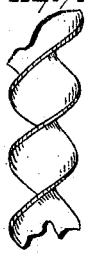

Fig. 5.

Fig. 6.

WITNESSES

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UNITED STATES PATENT OFFICE.

FERRIS OGDEN, OF MANSFIELD, ASSIGNOR OF ONE-HALF HIS RIGHT TO Z. S. STOCKING, OF CLEVELAND, OHIO.

IMPROVEMENT IN MACHINES FOR MAKING SPIRAL CONVEYERS.

Specification forming part of Letters Patent No. **182,220**, dated September 12, 1876; application filed July 14, 1876.

To all whom it may concern:

Be it known that I, FERRIS OGDEN, of Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Machines for Making Spiral Conveyers, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to a machine for making augers, spiral conveyers, and other like devices.

Figure 1 of the drawing represents an isometric view of the machine, as seen from the side opposite the bevel-gears. Fig. 2 is a top view, with the presenting and receiving guide removed. Figs. 3 and 4 are transverse cross-sections of said guides. Fig. 5 represents a roll, having a groove formed in the middle. Fig. 6 represents a plate, such as the roll of Fig. 5 is intended to operate upon. Fig. 7 represents the product of the plane curved rolls.

The invention consists in the parts and combinations hereinafter specified and claimed, wherein—

A is the base of the machine, to which the standards B are secured. C C′ are the rolls, each tapering from end to middle—that is, have a concave surface—and the axes of which are placed obliquely to each other, and in such relative position that the space between the rolls is equal at all points. They are journaled in the standards B, and motion is transmitted from the shaft of roller C, to which power is applied, to that of C′ by means of the bevel-gears *a a′*.

D is the conveyer-plate presenting-guide, which is provided with a partly-covered groove, in which the conveyer or auger plate is guided and presented to the bite of the rolls.

E is the tubular receiving-guide, into which the completed auger or conveyer is received or discharged.

The rolls may have a groove in the middle, and the space between them may gradually diminish toward the ends, (see Fig. 5,) so as to admit a plate, having on both sides a central longitudinal ridge, and gently tapering to the edge of the plate. (See Fig. 6.)

The operation of the machine is as follows: The plate, rolled to the desired shape, either flat or of the form just described, is inserted in the groove of the presenting-guide, and fed forward in the bite of the rolls, which, having been put in motion by the power applied to shaft C, draw the plate between their surfaces, and discharge it into the tubular guide in a screw-like form—the result of the relative position and curved shape of the rolls.

When the plate, of gently-reduced thickness, having central longitudinal ridge, is subjected to the action of the machine with the appropriate rolls in place, the result is a conveyer with a solid shaft throughout its entire length, and in one piece with its surrounding screw-blade.

Part of the blade can be cut away, so as to leave a full round axle at either end.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The method of manufacturing spiral conveyers, augers, &c., consisting in subjecting a bar or blank to continuous compression between concave-faced rollers, arranged to have their axes cross at or near their centers, substantially as and for the purpose described.

2. The combination, with rolls having oblique axial lines of direction, of the plate-presenting mechanism, located in the right-angular cross-plane of the point where the rolls cross each other, substantially as and for the purpose described.

3. In combination with the bevel-gears *a a′*, the rolls C C′, with concave surfaces, their axes placed obliquely to each other, and their surfaces separated sufficiently to operate on the plate or material introduced between them, substantially as and for the purpose described.

4. In combination with two rolls with concave surfaces, their axes placed obliquely to

each other, the presenting-guide D, substantially as and for the purpose described.

5. In combination with two rolls with concave surfaces, their axes placed obliquely to each other, the presenting-guide D and receiving-guide E, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FERRIS OGDEN.

Witnesses:

HENRY C. HEDGES,

JOHN H. TODD.