

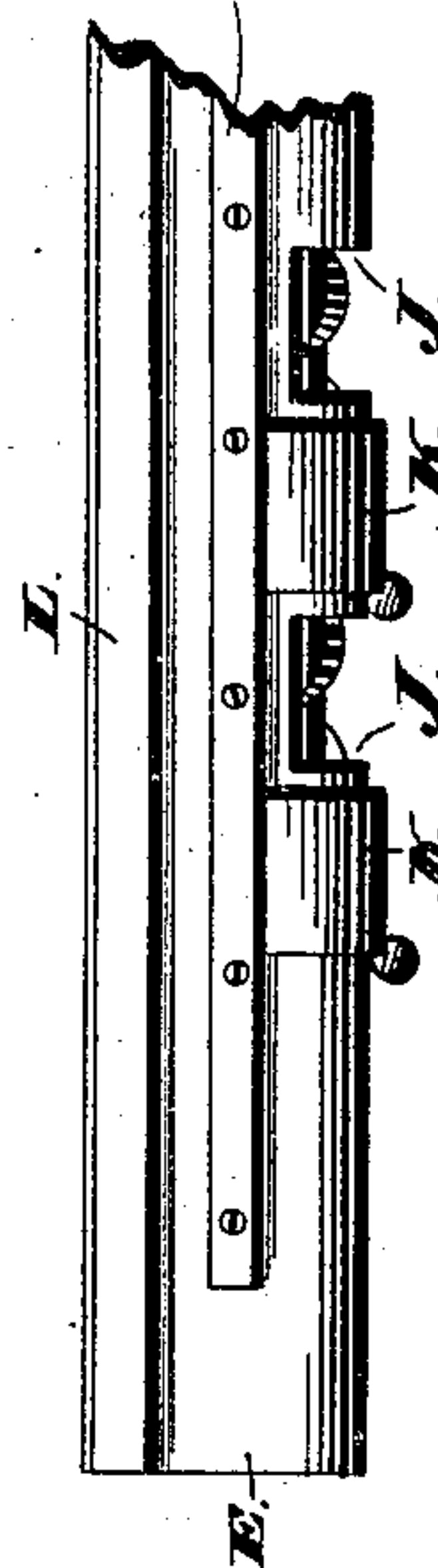
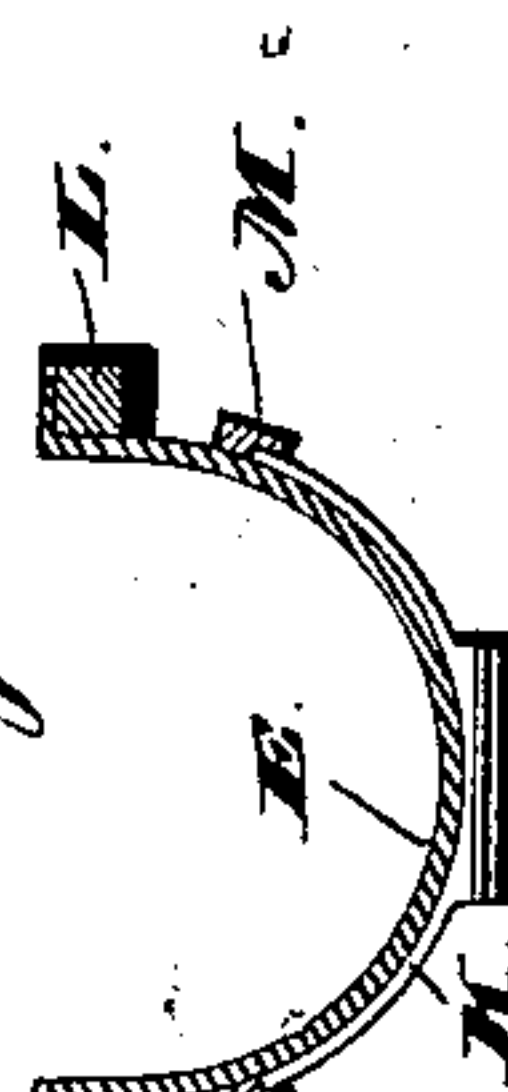
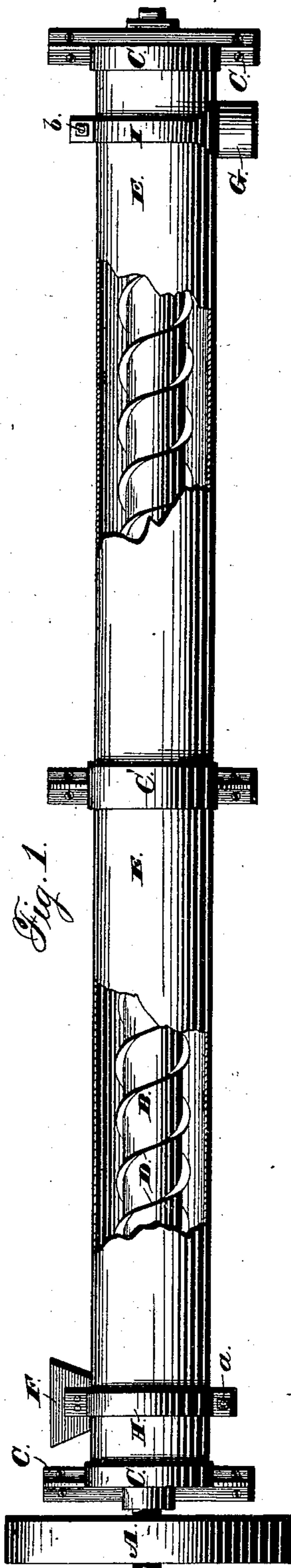
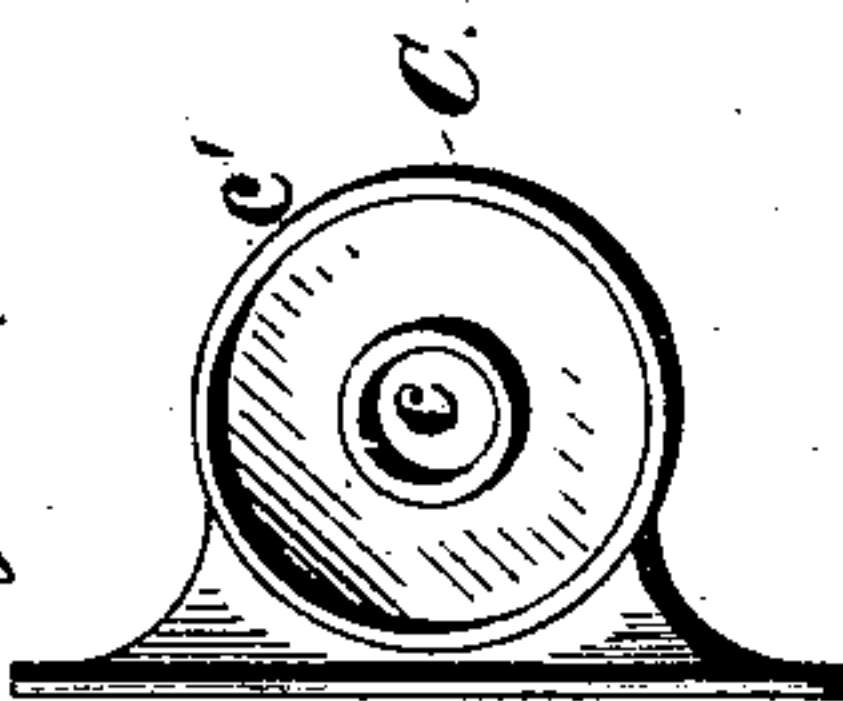
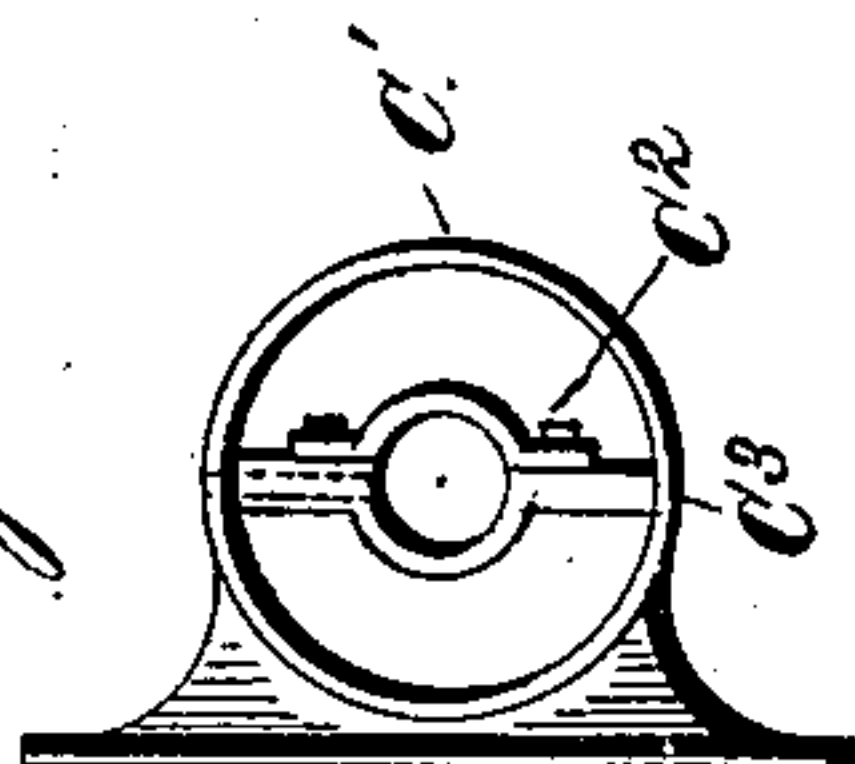
(No Model.)

R. CRAIK.

CONVEYER FOR MILL PRODUCTS.

No. 275,153.

Patented Apr. 3, 1883.



Witnesses.
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UNITED STATES PATENT OFFICE.

ROBERT CRAIK, OF HAWLEY, MINNESOTA.

CONVEYER FOR MILL PRODUCTS.

SPECIFICATION forming part of Letters Patent No. 275,153, dated April 3, 1883.

Application filed December 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT CRAIK, a citizen of Great Britain, residing at Hawley, in the county of Clay and State of Minnesota, have invented new and useful Improvements in Conveyers for Mill Products, of which the following is a specification.

This invention relates to conveyers for mill products, the apparatus being especially designed for use in flour and other mills, though also adapted for use in other situations.

The object of the invention is to facilitate the conveyance of grain, flour, bran, or other material to any part of a mill or warehouse, especially in narrow or confined situations, where there would not be room for an ordinary trough-conveyer, or where its dust and dirt would be objectionable; and, further, to provide a conveyer which is perfectly dust-proof and capable of being conveniently adjusted into the desired position or detached with ease when desired. These objects I accomplish by the construction of parts hereinafter described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved conveyer in position, and showing the same partly broken away. Fig. 2 is an end view of one of the end supporting-brackets. Fig. 3 is a similar view of one of the central brackets, and Fig. 4 is a side elevation of a modified construction of casing, and Fig. 5 is an end view of the same.

Like letters of reference designate like parts.

The apparatus consists of a conveyer-shaft provided at one end with a driving-pulley or other means of rotation, and carrying a continuous conveyer-flight composed of any suitable material, said conveyer-flight being inclosed in a suitable tight casing having inlet and outlet openings for the passage of material without permitting the entrance or escape of dust, and the whole being formed in detachable sections supported by means of suitable brackets.

Referring to the first three figures of the drawings, the letter A designates a driving-pulley, that may be affixed to one end of the conveyer-shaft B, which has its bearings in brackets that are capable of being secured to the walls, ceilings, or other parts of a building.

The brackets C for the ends of the sectional case are provided with bearings *c* for the ends of the conveyer-shaft, and with a peripheral flange, *c'*, which fits over the ends of the case. The bracket C', however, while having an annular flange or band, is provided with an opening, within which a bearing, C², provided for the conveyer-shaft, is somewhat different from that found in the bracket C. This bearing C² consists of a ring connected by radial arms with the band, said ring and bands being in the nature of a spider fixed within the bracket. One or both of these arms should be vertically arranged, and a hole (shown in dotted lines) will be drilled through the annular band C³, and through the upper vertical arm, so that oil can be fed to the shaft. The opening in the bracket allows the material to pass by the bearing. It will of course be understood that the flight on the shaft will be omitted at the point where the shaft passes through the bearing.

The conveyer-shaft B may be composed of wood or metal, and is provided with one or more screw or spiral conveyer-flights, D, of suitable construction. The conveyer-shaft B and screw D are inclosed in a tight casing, E, that is preferably cylindrical in form and made in sectional lengths that are supported by flanges formed on the brackets C and C'.

In Fig. 1 are shown two of these sections, one being provided with a hopper or inlet, E, and the other having a discharge-spout, G. It is obvious, however, that the conveyer may be made of any desired length by using additional sections arranged between the two end sections, that are provided, respectively, with an inlet and outlet, as described. If desired, each section of the conveyer, when composed of several sections, may be provided with an inlet and an outlet suitably valved, so that material may be received and discharged at any point without rearranging the conveyer.

The hopper F is arranged at the upper side of the conveyer-section, and is supported in a clamp, H, having a bolt, *a*, by loosening which the clamp and attached hopper may be adjusted to any desired position. The discharge-spout G, arranged at the lower side of the conveyer, is also supported in a similar manner, its clamp or support I being provided with

a bolt, *b*, so that the clamp and spout will be capable of adjustment. The cylindrical casing *E* is preferably made of galvanized iron; but other material may be used, if desired.

5 It will be seen that by the use of this conveyer the access, as well as the escape of dust or dirt, is effectually prevented. The conveyer occupies only about one-fourth the space of an ordinary conveyer, and weighs proportionately
10 less. It never chokes or clogs, as it will take in no more material than it can carry, and, being made in sectional lengths, each complete in itself, it can be quickly joined and set up to any desired length.

15 Among some other advantages may be mentioned the fact that by my improved conveyer the material received directly from the mill-stones or rollers is cooled as it is carried along through the casing; also this construction of
20 conveyer affords no harbor for vermin.

Referring now to Figs. 4 and 5, it will be seen that I can also make the casing trough-shaped or semi-cylindrical and provide it with
25 flanges along its edges, which said flanges are secured in any suitable way to wooden strips or bars *L*, adapted to run the entire length of the case. In this instance the same construction of brackets hereinbefore described will
30 be employed. In these said figures the case is provided with openings *J*, for allowing the material to be discharged, and further provided with slides *K*, by means of which said openings can be closed. These slides have edges fitted
35 in cleats *M*, which are secured to the case, whereby the slides are guided and held on the case.

Having thus described my invention, what I claim is—

40 1. The combination of a tightly-closed cylindrical casing consisting of sections detacha-

bly connected at their adjoining ends, and an interior spiral conveyer and conveyer-shaft, substantially as described.

2. The combination, with a cylindrical conveyer-casing, of an adjustable hopper, substantially as described. 45

3. The combination, with a conveyer-casing, of a hopper, a clamp, and means for adjusting and securing the same, substantially as described. 50

4. The combination, with a casing, of an adjustable discharge-spout, substantially as described.

5. The combination, with a conveyer-casing, of a discharge-spout, and means for adjustably securing the same, substantially as described. 55

6. The combination, with a cylindrical conveyer-casing formed in detachable sections, of one or more adjustable hoppers and discharge-spouts, substantially as described. 60

7. The combination, with a conveyer-shaft and a spiral conveyer, of a tight cylindrical casing formed in detachable sections and provided with adjustable hoppers and discharge-spouts, substantially as described. 65

8. The combination of a conveyer-shaft, a spiral conveyer mounted thereon, a tight cylindrical casing provided with adjustable hoppers and discharge-spouts, brackets for supporting said casing and affording bearings, and means for rotating said shaft, substantially as described. 70

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses. 75

ROBERT CRAIK.

Witnesses:

C. B. TINELL,

J. M. UNDERWOOD.