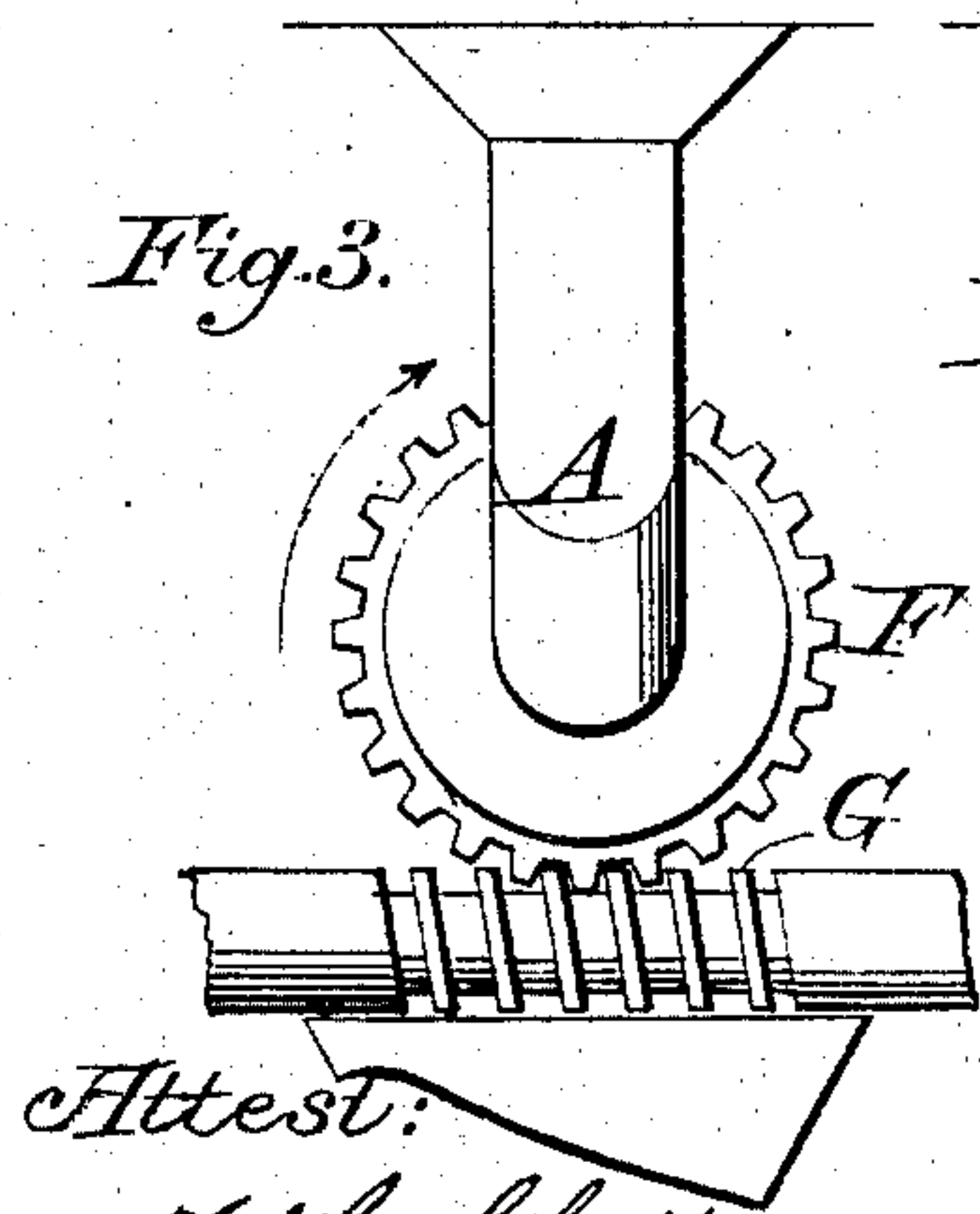
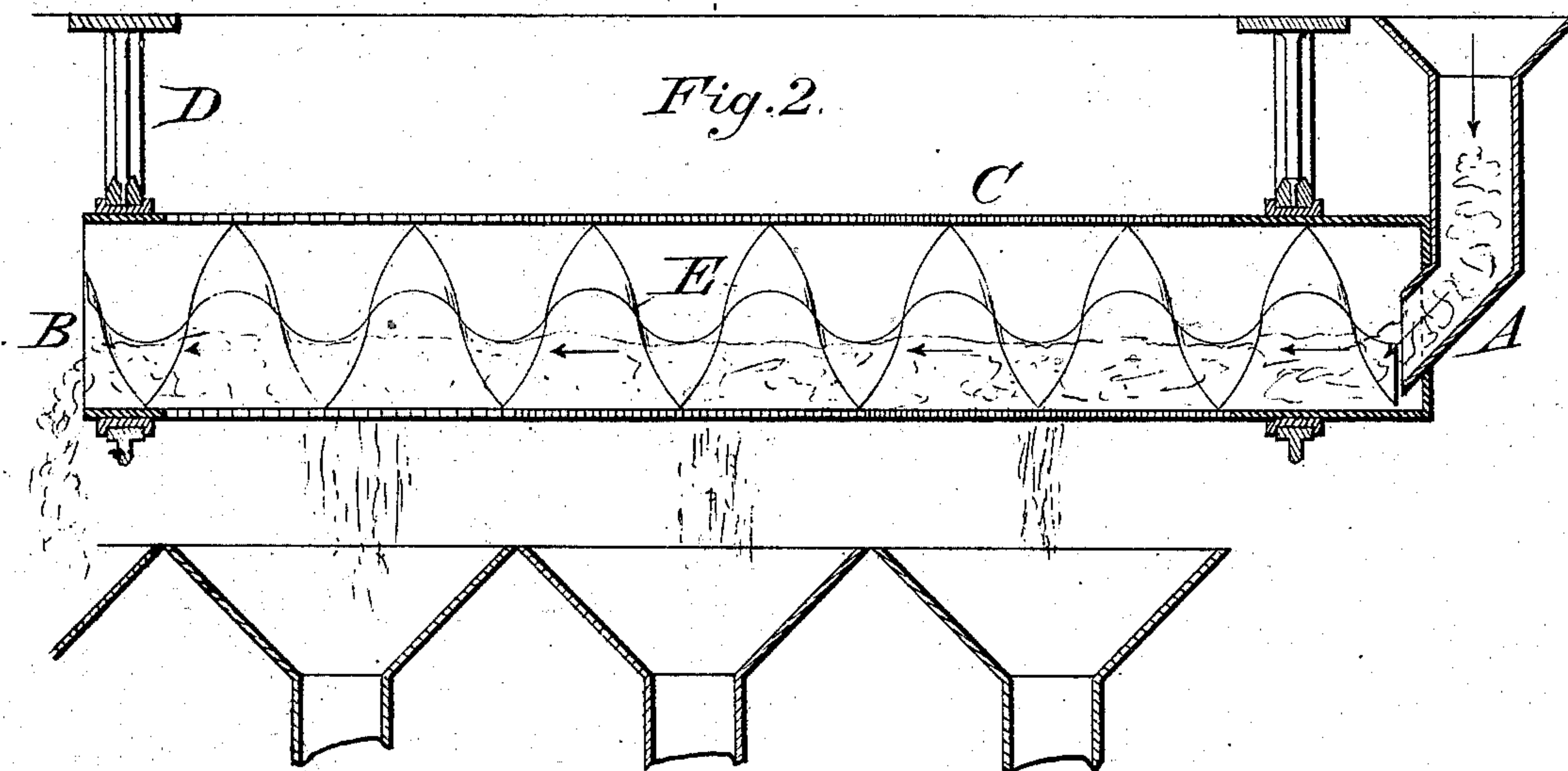
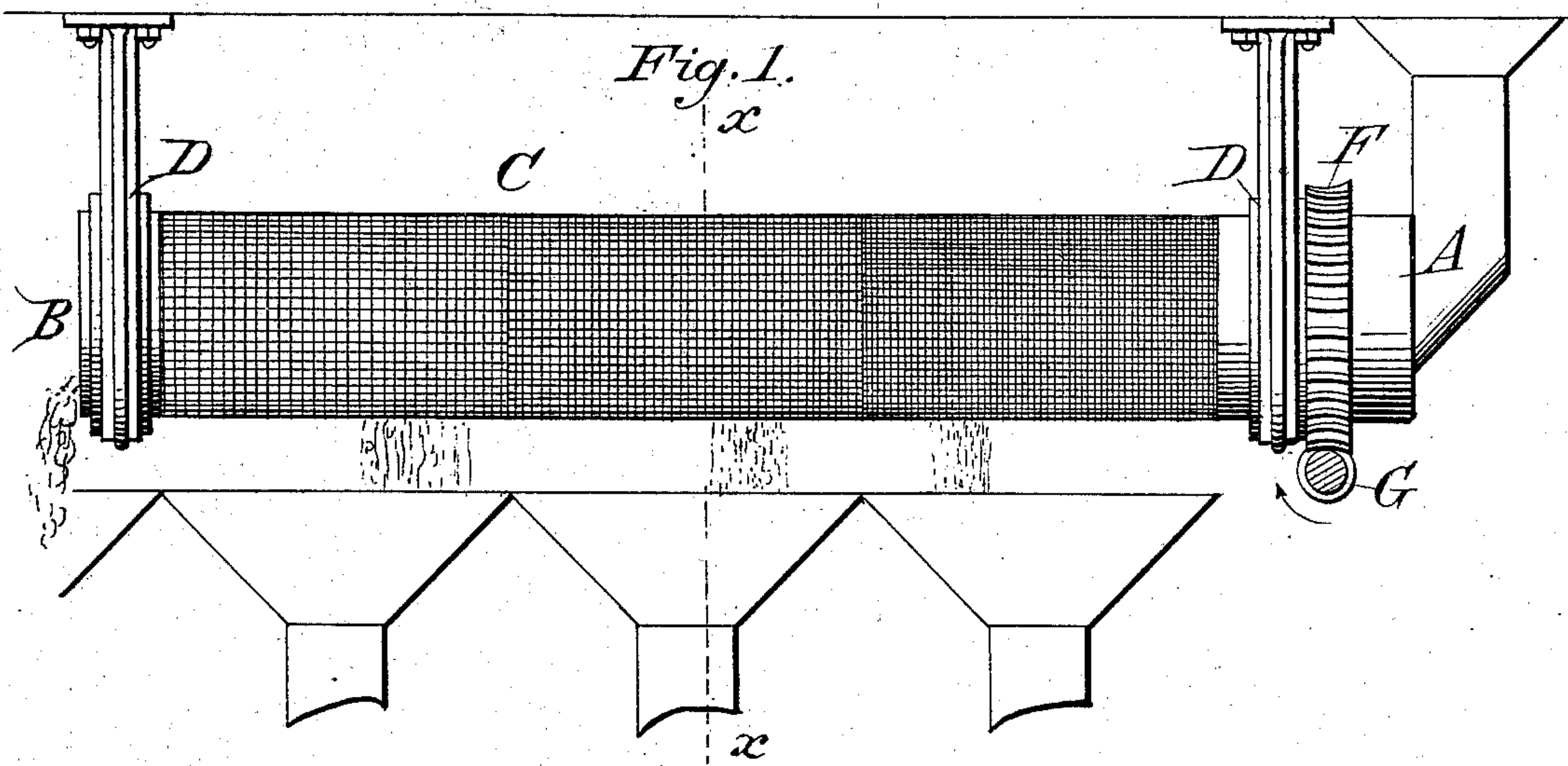


(No Model.)

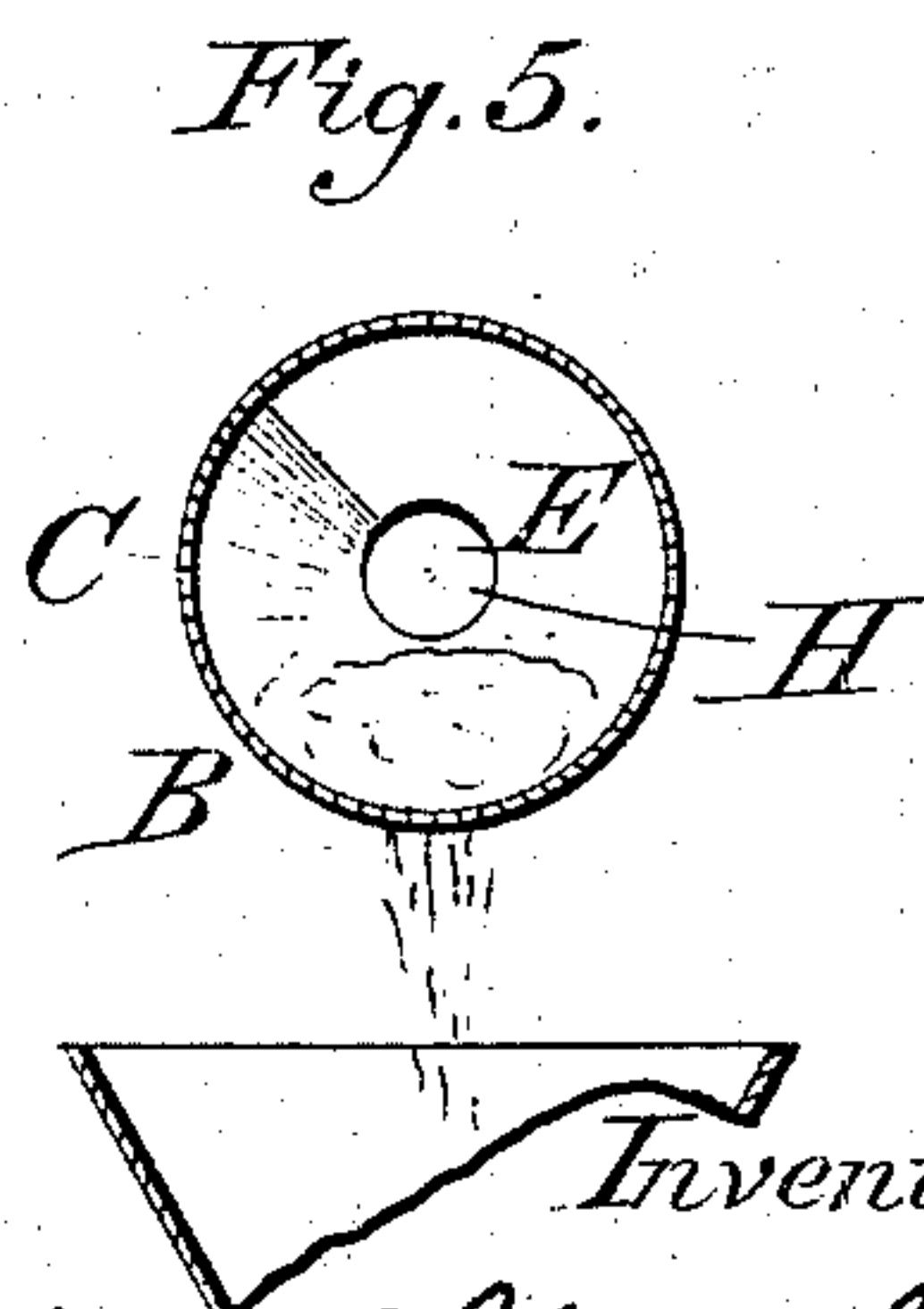
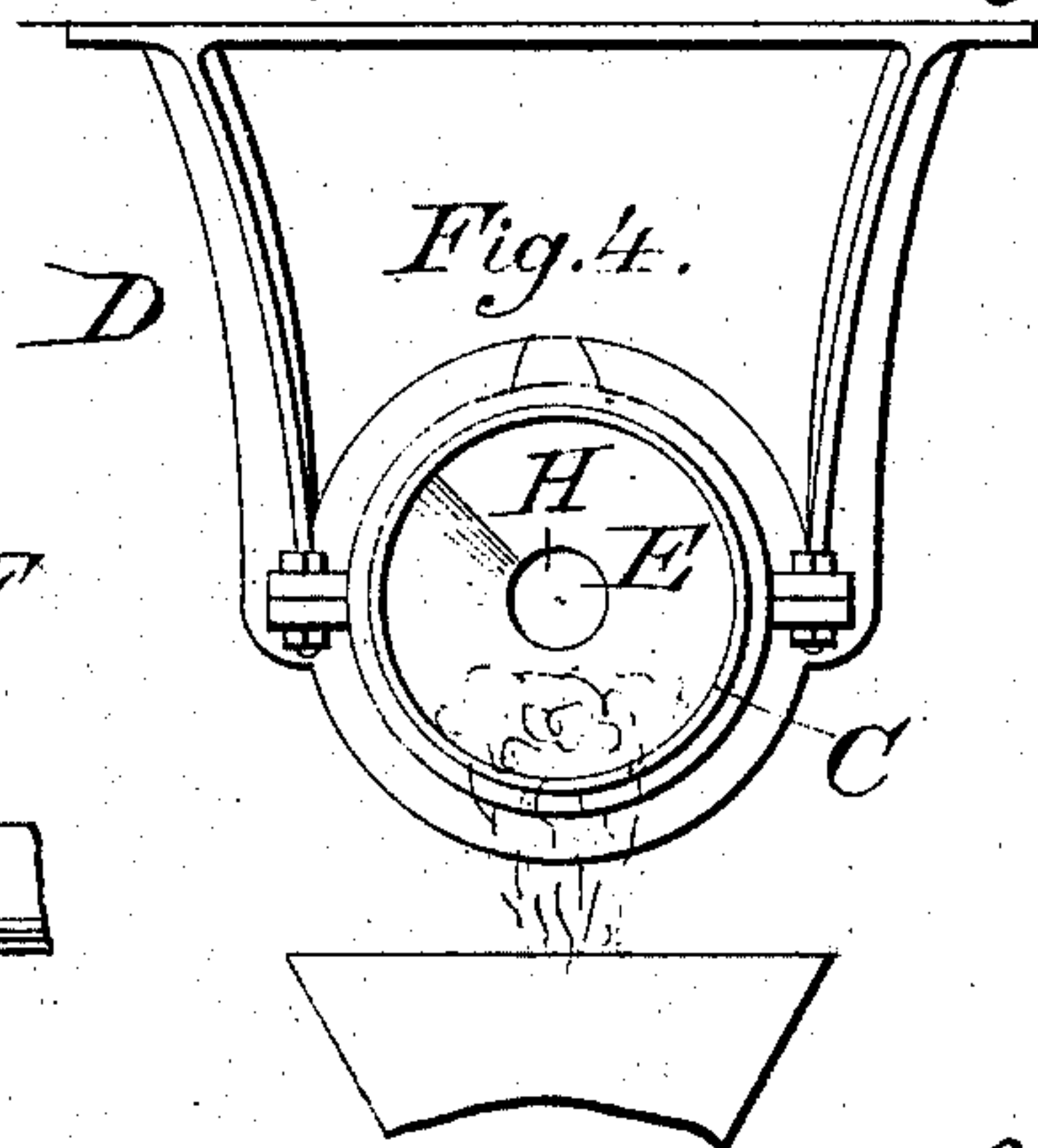
W. WINTERHALTER.  
Conveyer.

No. 238,194.

Patented Feb. 22, 1881.



Attest:  
J. H. Schott.  
A. R. Brown



Inventor:  
Mildrich Winterhalter  
J. B. Tasker atty



# UNITED STATES PATENT OFFICE.

WILDRICH WINTERHALTER, OF SAN FRANCISCO, CALIFORNIA.

## CONVEYER.

SPECIFICATION forming part of Letters Patent No. 238,194, dated February 22, 1881.

Application filed November 20, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, WILDRICH WINTERHALTER, a subject of the King of Bavaria, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Conveyers; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in conveyers for conveying grain, middlings, sand, or other materials, in which the screw or parts constituting the screw are fastened to the insides of the conveyer tube or box, which is made to revolve.

The objects of my improvement are to omit the solid or hollow shafts used at present in conveyers, and also to allow the outside or parts of the outside of the revolving tube or box to be in the form of screens or perforated sheets for use of cleaning or separating the conveyed material, all parts of which are made, by the revolution of the conveyer-tube, to come in contact with its outside, as will be set forth.

In the drawings, Figure 1 is a side view of my conveyer; Fig. 2, a central longitudinal section; Fig. 3, a front view of the inlet. Fig. 4 shows the end view of outlet; Fig. 5, a transverse section on line *xx* of Fig. 1.

C represents the conveyer box or tube, which may be a cylindrical shell in shape, as shown, or square, polygonal, &c., in cross-section, and of any length necessary. It may be constructed of thin metal plates, or if it is desired to clean or separate the conveyed materials the plates are perforated; or it may consist of wire-netting. This cylinder is supported by and turns in rings or hangers D, bolted to the ceiling or other support.

F is a toothed wheel fastened to the outside of the cylinder at one end, and engaging with a worm-wheel, G, and thus rotating said cylinder or box C; or the revolution of the same may be caused by any other suitable mechanism,

(excepting always a central shaft with pulley or gearing attached to it.)

E represents the screw or conveyer, securely fastened to the inner side of the tube or cylinder C and revolving with it. This screw may be of greater or less pitch and varied depth, according to the purposes for which it is to be used. It may be of thin metal or other suitable material, and constructed in sections or otherwise, as desired. It is to be observed that the same is not attached to a shaft passing through a tube or box, as my improvement does away with solid or hollow shafts now used in conveyers. The blades of the screw may not extend to the center line of the conveyer, and a kind of tube is thereby created (marked H,) through which a current of air from a blower can pass to separate the chaff, dust, &c., from the heavier materials by turning it out at the outlet B, or at openings of the box, which are made to open themselves when arrived at the highest point by the revolving, thus leaving the heavier stuff at the bottom.

The material to be conveyed is fed in at the inlet A, and is carried along by the screw as it revolves to the outlet B, where it falls into a hopper or other receptacle designed for it. In case the cylinder is perforated or of wire-netting and used as a separator, a series of hoppers is placed underneath it to receive the separated material of different degrees of fineness.

It will be seen that in my improved conveyer there is less friction and wearing off between the screw, conveyed materials, and outsides, and consequently less moving-power is required than in conveyers now in use.

By means of my improvement any length of conveyer may be used without interfering with its revolving or being intercepted by the journal-boxes, made necessary by shafts, as by my improvement all the appliances to revolve, to keep in place, or guide the conveyer-tube can be secured to or put on the outside of it entirely separate from the conveyed materials, which would be spoiled by friction, lubricating stuff, &c.

The conveyers now in use are worked with screws, all of which are fastened to or are identical with the screw E.

tical with the shafts, and I do not claim such construction; but

What I do claim, and desire to secure by Letters Patent, is—

- 5 In a conveyer, the combination, with the hangers D D, external toothed wheel, F, and worm-wheel G, of the box or shell C, provided with an internal shaftless screw, E, having a

central opening, H, substantially as and for the purposes shown and described. 10

In testimony whereof I affix my signature in presence of two witnesses.

WILDRICH WINTERHALTER.

Witnesses:

JOHN RICHARDS,  
OSCAR ASMUSSEN.