H. S. GARDNER.

CONVEYER HOPPER.

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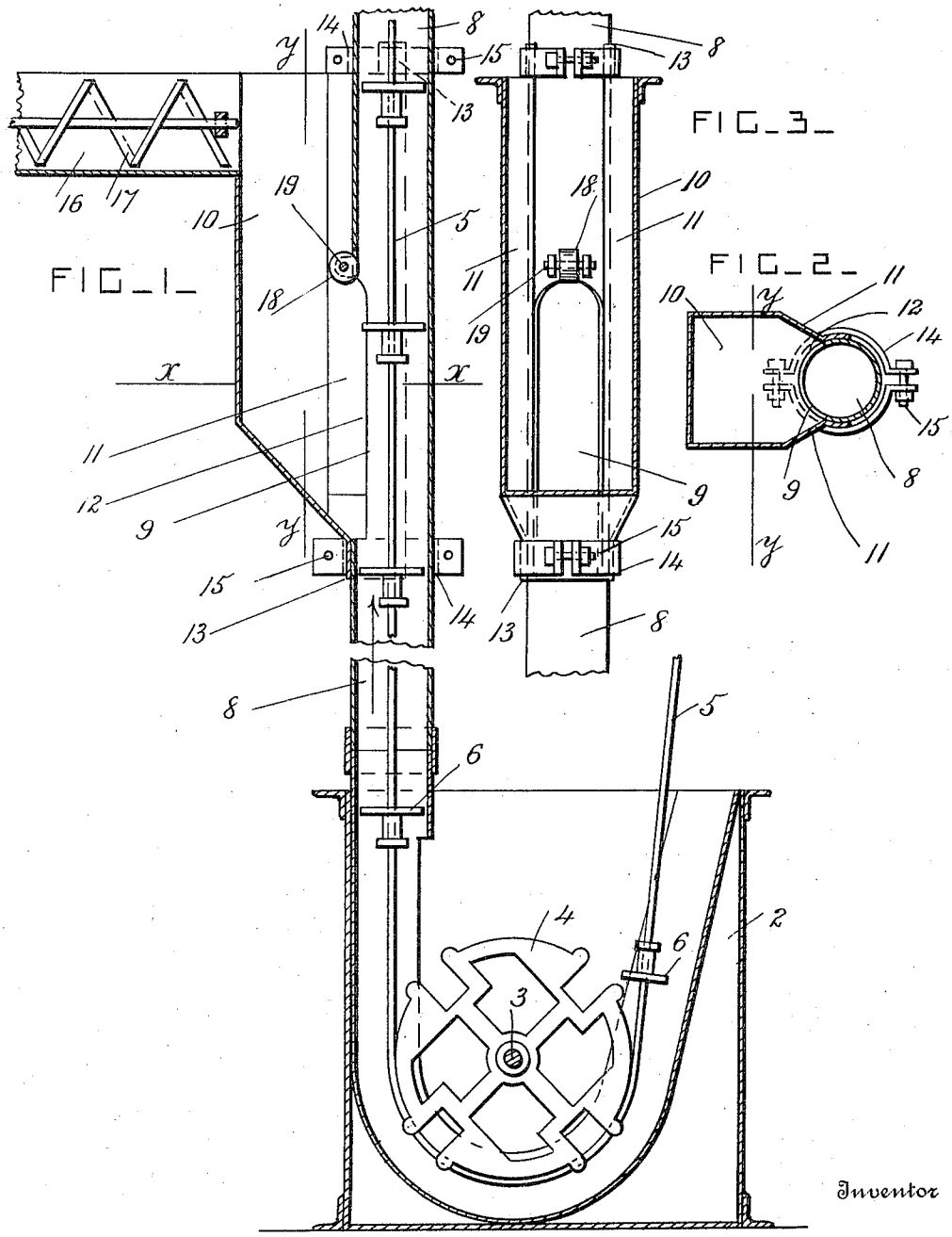
1,036,993. Patented Aug. 27, 1912.



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UNITED STATES PATENT OFFICE.

HOWARD S. GARDNER, OF EAST ORANGE, NEW JERSEY.

CONVEYER-HOPPER.

1,036,993. Specification of Letters Patent. Patented Aug. 27, 1912.

Application filed September 27, 1911. Serial No. 651,661.

To all whom it may concern:

Be it known that I, HOWARD S. GARDNER, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Conveyer-Hoppers; 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.

This invention relates to conveying apparatus provided with an endless cable and flights, and adapted to raise concrete material to the top floor of a high building in course of construction; and it consists of a hopper adapted to be connected to the conveyer pipe and arranged as hereinafter fully described and claimed.

In the drawings, Figure 1 is a vertical section through the lower part of a conveyer provided with a hopper according to this invention. Fig. 2 is a cross-section through the hopper, taken on the line *x*—*x* in Fig. 1. Fig. 3 is a vertical section through the hopper, taken on the line *y*—*y* in Fig. 2.

A casing or trough 2 is arranged on the ground floor of the building, and 3 is a shaft journaled in the casing and provided with a driving wheel or a guide wheel 4. An endless conveyer cable 5 is provided and has conveyer flights 6 of approved construction secured upon it. This cable works over the wheel 4 and over a similar wheel at the top of the building which is not shown in the drawings, and the conveyer may be driven from the top wheel or the bottom wheel as preferred.

The conveyer cable is driven in the direction of the arrow in Fig. 1, and its ascending stretch passes through a conveyer pipe 8 which extends through the various floors of the building, and which is preferably formed in sections of suitable length.

In order that the action of the wheel 4 may not be impeded by the concrete material, which is usually delivered into the casing or trough 2, the conveyer pipe is provided with an inlet opening 9 in one side of it a little above the casing 2. A rectangular hopper 10 is provided having converging portions 11 on one side and an opening 12 between these converging portions. This hopper has also curved flanges 13 at its top and bottom. The opening 12 is arranged over the opening 9 in the conveyer pipe, and 14 are clamping bands provided with bolts 15 which clamp the flanges against the conveyer pipe and secure the hopper in position. A feed trough 16 for the mixed materials is connected to the upper part of the hopper, and 17 is a spiral conveyer which works in the trough 16. A guide wheel or roller 18 is journaled on a pin 19 and is arranged at the upper part of the openings 9 and 12 so that a portion of its periphery projects into the said openings. This wheel or roller prevents the conveyer flights or lumps of material from catching against the top edges of the said openings. The hopper 10 is arranged to extend above the level of the tops of the openings so that the material is fed through the said openings in a satisfactory manner, The hopper can be removed and replaced whenever desired, and the opening in the pipe can be closed and the material fed into the casing 2 whenever desired. The concrete materials are preferably mixed in dry form in a mixing machine of any approved construction to which the spiral conveyer 17 and its feed trough are connected.

The concrete materials are conveyed through the conveyer tube to the top of the building, where they are mixed with the necessary water, and are then distributed to the various floors of the building, as required for use, in any approved manner. The conveyer can be used for any other materials besides concrete materials.

What I claim is:

1. The combination, with a tubular conveyer pipe having a feed opening on one side, and an endless cable provided with flights for elevating the material in the said pipe; of a removable feed hopper open on one side and provided with flanges for bearing against the said pipe, and clamping devices for securing the hopper to the pipe over its said feed opening.

2. The combination, with a conveyer pipe

having an opening in one side, and an endless cable provided with flights for elevating the material in the said pipe; of a feed hopper for the material secured to the said pipe over the said opening, and a guide wheel or roller journaled in the hopper at the upper end of the said opening.

In testimony whereof I have affixed my signature in the presence of two witnesses.

HOWARD S. GARDNER.

Witnesses:
JOHN R. HICKS,
THOMAS BRUNETTO.