

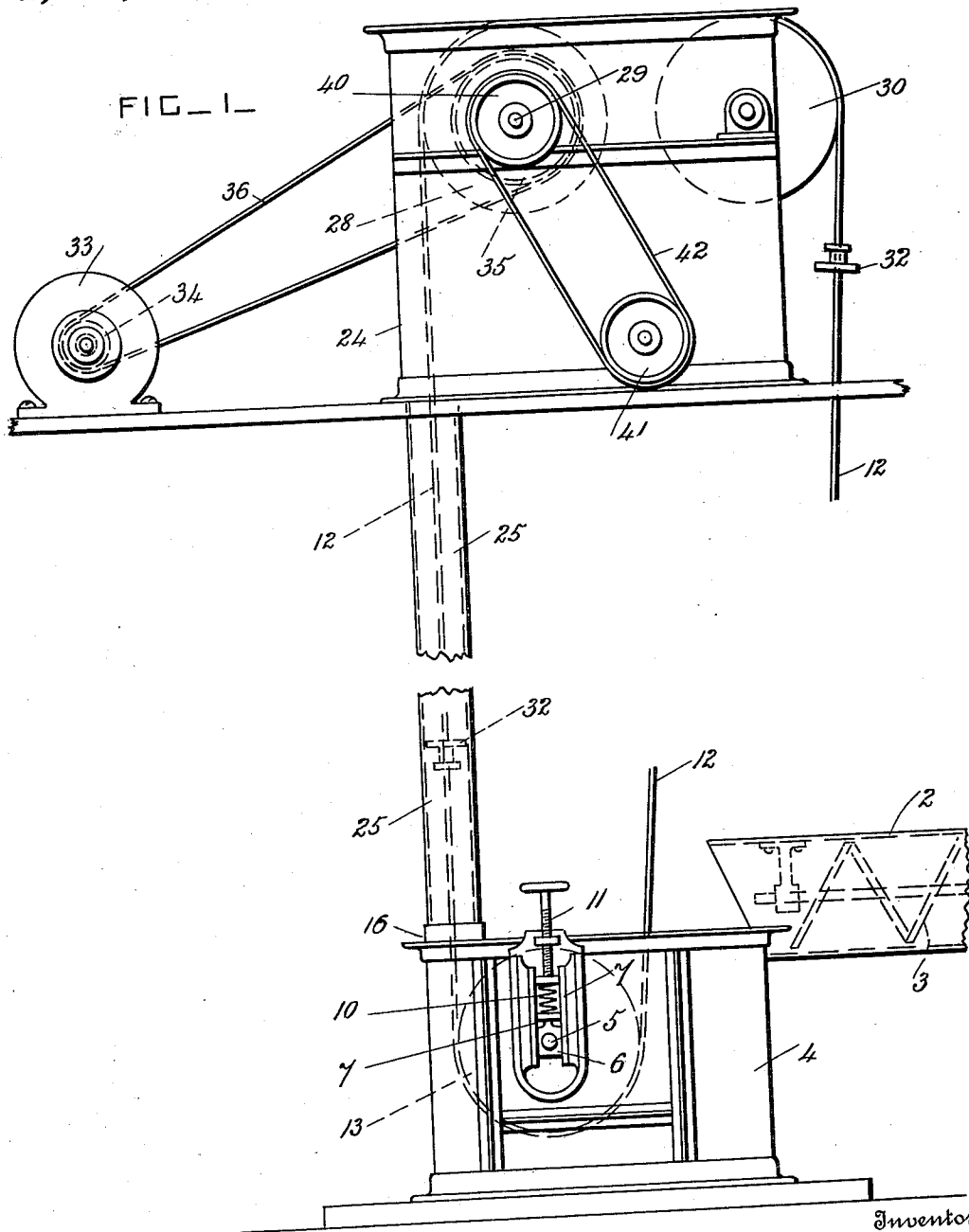
H. S. GARDNER.
CONVEYER.

APPLICATION FILED AUG. 3, 1911.

Patented June 25, 1912.

3 SHEETS—SHEET 1.

1,030,296.



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3 SHEETS—SHEET 2.

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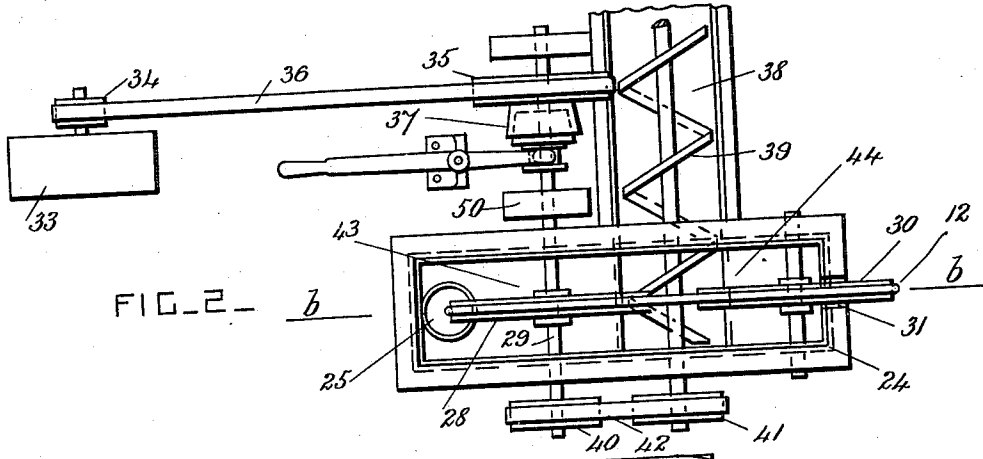


FIG. 2—

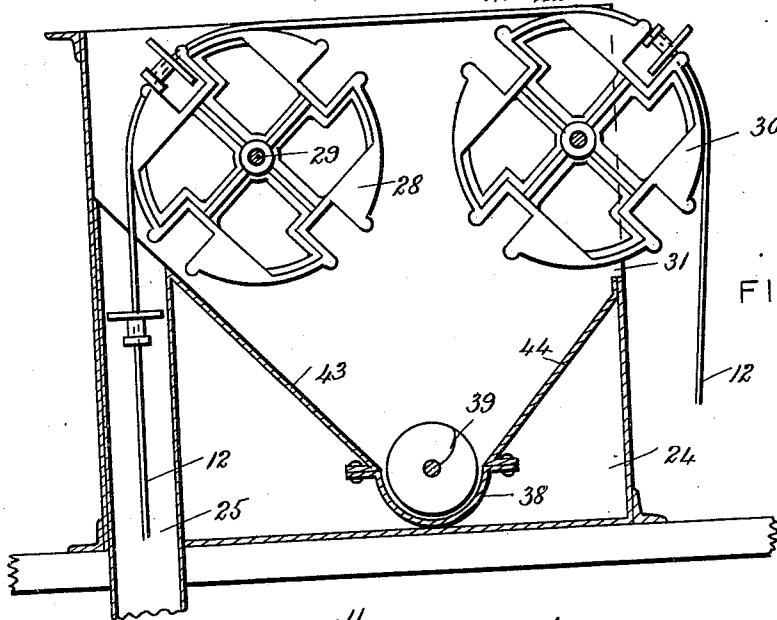


FIG. 3—

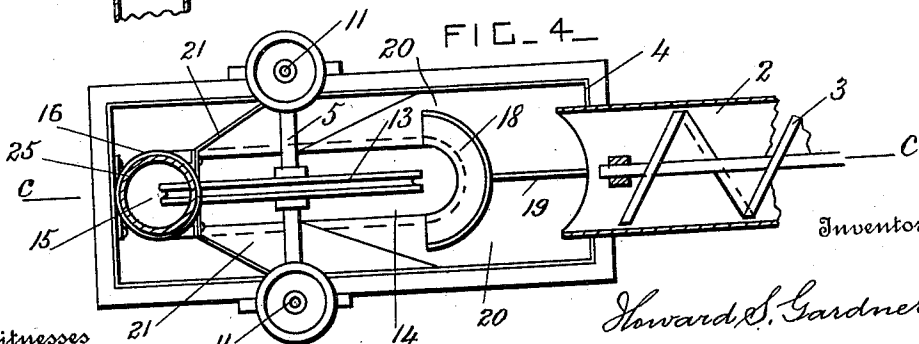


FIG. 4—

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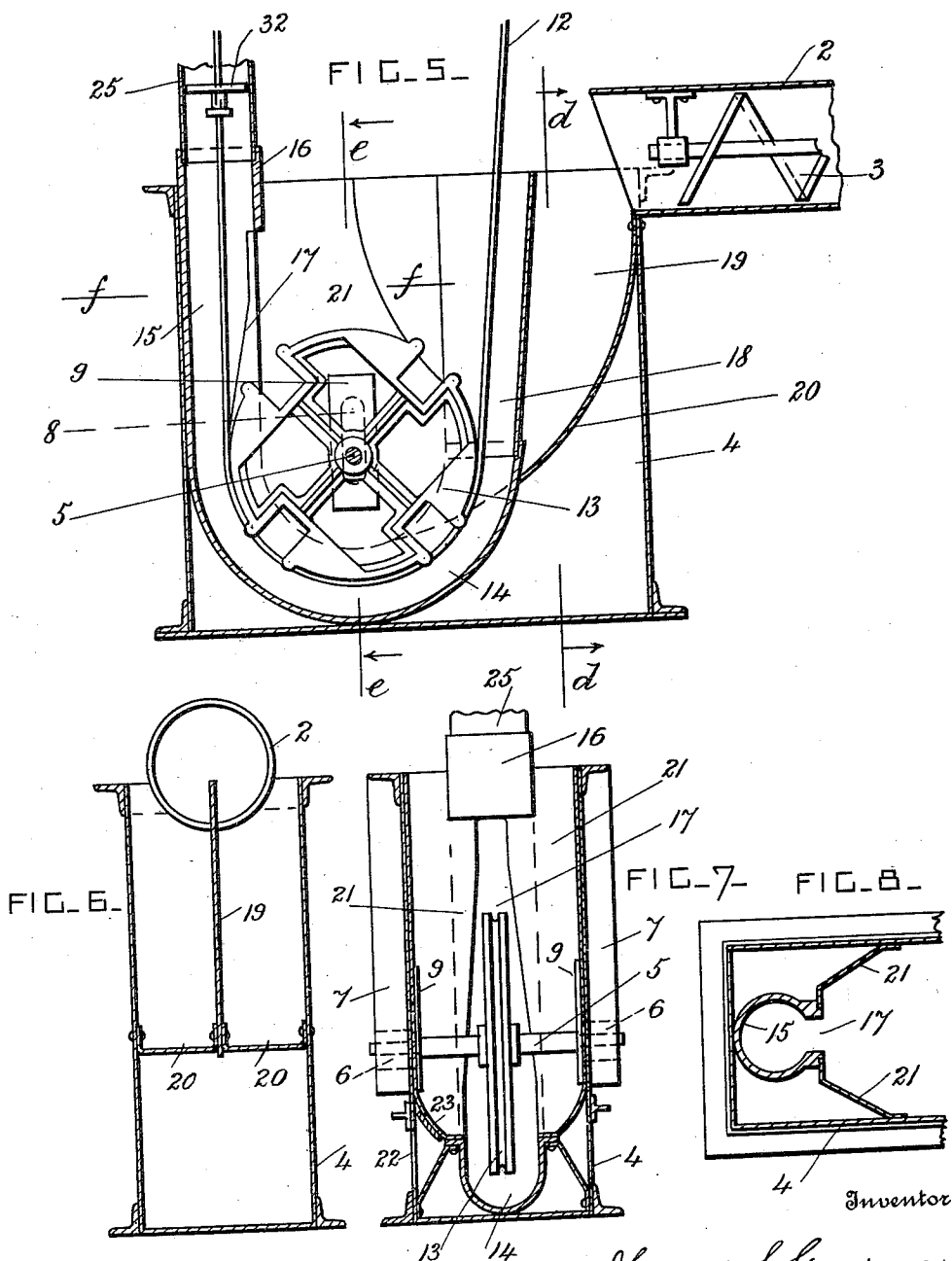
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

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CONVEYER.

1,030,296.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed August 3, 1911. Serial No. 642,076.

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 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.

This invention relates to conveying apparatus provided with endless cables and flights and adapted to raise materials to the upper or top floors of high buildings; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a side view of one form of a conveying apparatus constructed according to this invention. Fig. 2 is a plan view of the mechanism at the top of the building. Fig. 3 is a vertical section taken on the line *b-b* in Fig. 2, and drawn to a larger scale. Fig. 4 is a plan view of the mechanism at the bottom of the building, partly in section. Fig. 5 is a vertical section taken on the line *c-c* in Fig. 4. Fig. 6 is a cross-section taken on the line *d-d* in Fig. 5. Fig. 7 is a cross-section taken on the line *e-e* in Fig. 5. Fig. 8 is a section taken on the line *f-f* in Fig. 5.

This conveying apparatus is specially intended for use in connection with concrete materials in high buildings in course of construction; but it may also be used for all other kinds of material to which it can be applied, such as grain, and in any places where such mechanism can be used.

When used in connection with concrete, the dry concrete materials are preferably mixed by suitable machinery on the ground floor, and are raised to the top floor by this conveying apparatus. The materials are mingled with water at the top floor of the building, and the wet concrete is delivered into a chute which serves as a reservoir and also as a means for distributing the wet concrete to the various floors of the building. A mixing machine of any approved construction is arranged on the ground or bottom floor of the building and is provided with a delivery spout or pipe 2. This spout has a spiral conveyer 3 or other suitable means for assisting the discharge of the dry materials.

A casing 4 is arranged on the ground floor, and 5 is the lower shaft of the conveyer which is journaled in bearings 6. These bearings are slidable in vertical guides 7 on the sides of the casing 4. The shaft 5 is slidable in slots 8 in the sides of the casing, and 9 are plates secured to the shaft and overlapping the slots so that the material cannot run through them. The bearings 6 are provided with tension springs 10 and tension screws 11 for keeping the cable taut. The cable 12 passes around a suitable wheel 13 which is secured on the shaft inside the casing. A semicircular trough 14 is secured in the lower part of the casing and is provided with a vertical extension 15 on one side which has a short connecting pipe 16 at its upper end portion which projects from the casing. The extension 15 has a tapering slot 17 on one side which is smallest at its upper end, and which joins onto the top of the semicircular trough. A curved shield 18 is secured in the casing and is connected to the other end of the trough from its vertical extension. A vertical partition plate 19 is secured in the casing under the delivery spout and behind the shield 18, so that the material delivered from the spout falls behind the shield and is divided into two streams. Curved guide plates 20 are secured in the casing, one on each side of the partition 19, so that the material is guided around the shield and is conducted into the trough. Suitable guide plates 21 are also secured one on each side of the slot 17 and at the top of the trough, and are connected to the casing, and these plates operate to guide the material into the trough and to assist in retaining it there. An opening 22 is provided in the side of the casing to give access to a suitable hand-hole 23 in the lower part of one of the guide plates, for cleaning out purposes.

An upper casing 24 is secured at the top floor of the building, and 25 is a conveyer pipe which extends from the upper casing 24 to the short connecting pipe 16 which projects from the lower casing.

A driving wheel 28 is secured on a driving shaft 29 which is journaled in suitable bearings in the upper casing. A guide wheel 30 is also journaled at the other side of the casing from the wheel 28 and partially projects through a vertical opening 31 in the side of the casing. The three wheels 13, 28 and 30 are all alike, and they and the endless

cable 12 and its conveyer flights 32, which pass over them and through the conveyer pipe 25, are of any approved construction. The driving shaft 29 is revolved by means of a suitable motor 33, such as an electric motor, secured at the top of the building, and operatively connected with the shaft 29 by pulleys 34 and 35 and a driving band or chain 36. A friction clutch 37, or other suitable clutch, is provided for connecting the pulley 35 to the shaft 29. The shaft 29 has also a sheave 50 secured on it, and to which a brake of any approved kind may be applied if required.

A discharge trough 38 is secured in the upper casing below and between the wheels 28 and 30, and this trough projects laterally from the casing, and is adapted to conduct the materials into the delivery chute. A spiral conveyer 39 is arranged in the trough 38, and is driven from the shaft 29 by means of pulleys 40 and 41 and a driving band or chain 42. Inclined guide plates 43 and 44 are secured inside the upper casing to conduct the material into the discharge trough as it falls from the conveyer flights which raise it from the trough in the lower casing and convey it to the upper casing.

The concrete materials are mixed with water in the discharge trough 38, and are then distributed to the various floors of the building as required for use.

What I claim is:

1. The combination, with a lower casing, of a curved trough arranged in the said casing and provided with a vertical extension at one end having a converging slot, a conveyer pipe connected to the said extension, and a conveyer provided with an endless cable and flights and working in the said trough and pipe.

2. The combination, with a lower casing, and a spout for delivering material into it; of a curved trough arranged in the casing

and provided with a vertical extension at one end having a converging slot, a conveyer pipe connected to the said extension, a curved shield secured to the other end of the trough in front of the spout, guide plates for conducting the material around the shield and into the trough, and a conveyer provided with an endless cable and flights and working in the said trough, shield and conveyer pipe.

3. The combination, with a lower casing, and a spout for delivering material into it; of a curved trough arranged in the casing, a conveyer pipe operatively connected with one end of the said trough, a curved shield secured at the other end of the trough in front of the said spout, a longitudinal partition plate secured under the spout between the shield and the adjacent side of the casing, guide plates secured on each side of the partition plate and operating to conduct the material around it and into the trough, and a conveyer provided with an endless cable and flights and working in the said trough and shield.

4. The combination, with a lower casing, of a curved trough arranged in the said casing and having a vertical extension at one end which terminates in a connecting pipe, said extension having a converging slot in one side between the pipe and the trough, guide plates secured in the casing at the sides of the slot and at the top of the trough and extending to the adjacent sides of the casing, and a conveyer provided with an endless cable and flights and working in the said trough, extension and connecting pipe.

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

HOWARD S. GARDNER.

Witnesses:

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