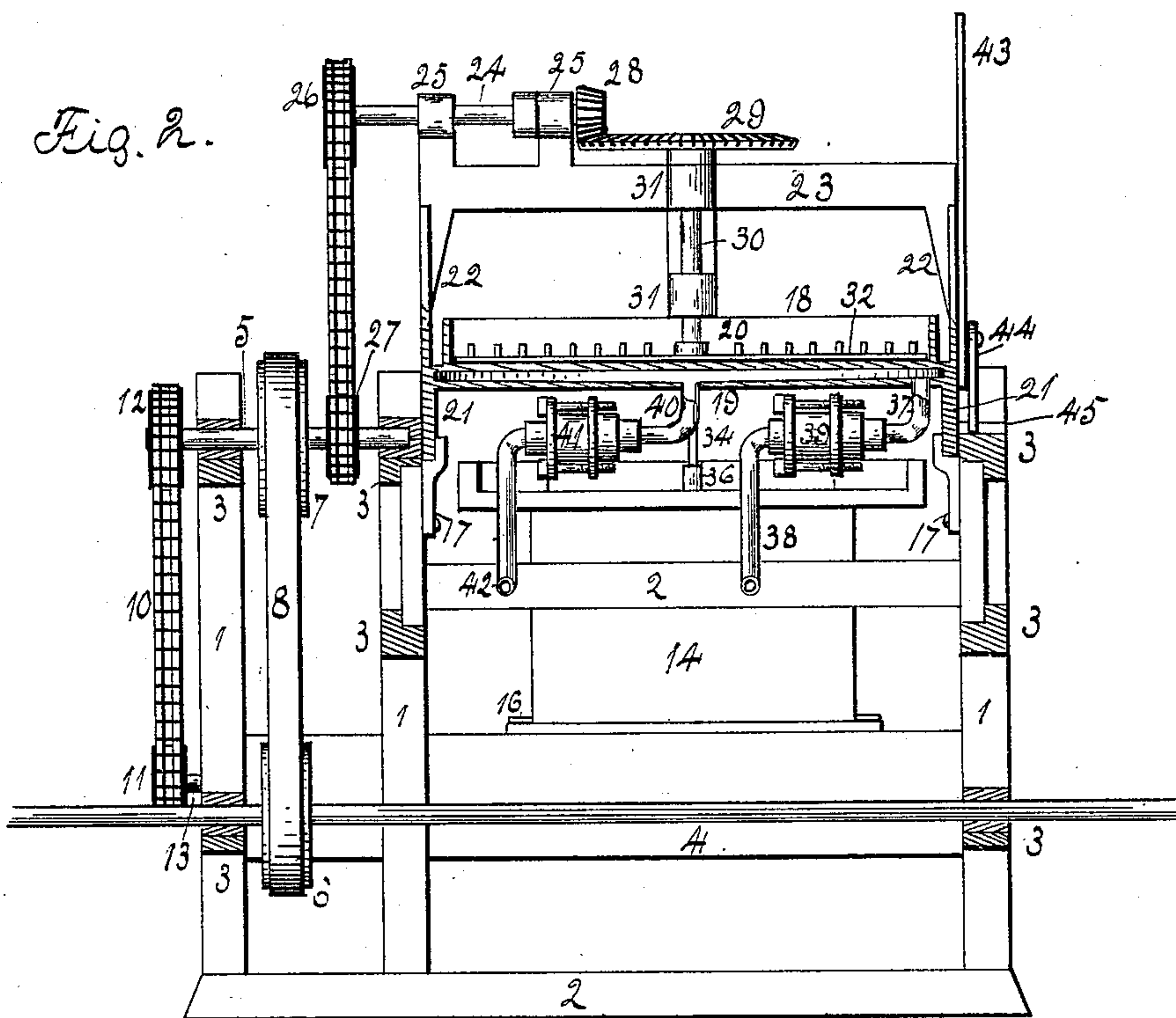
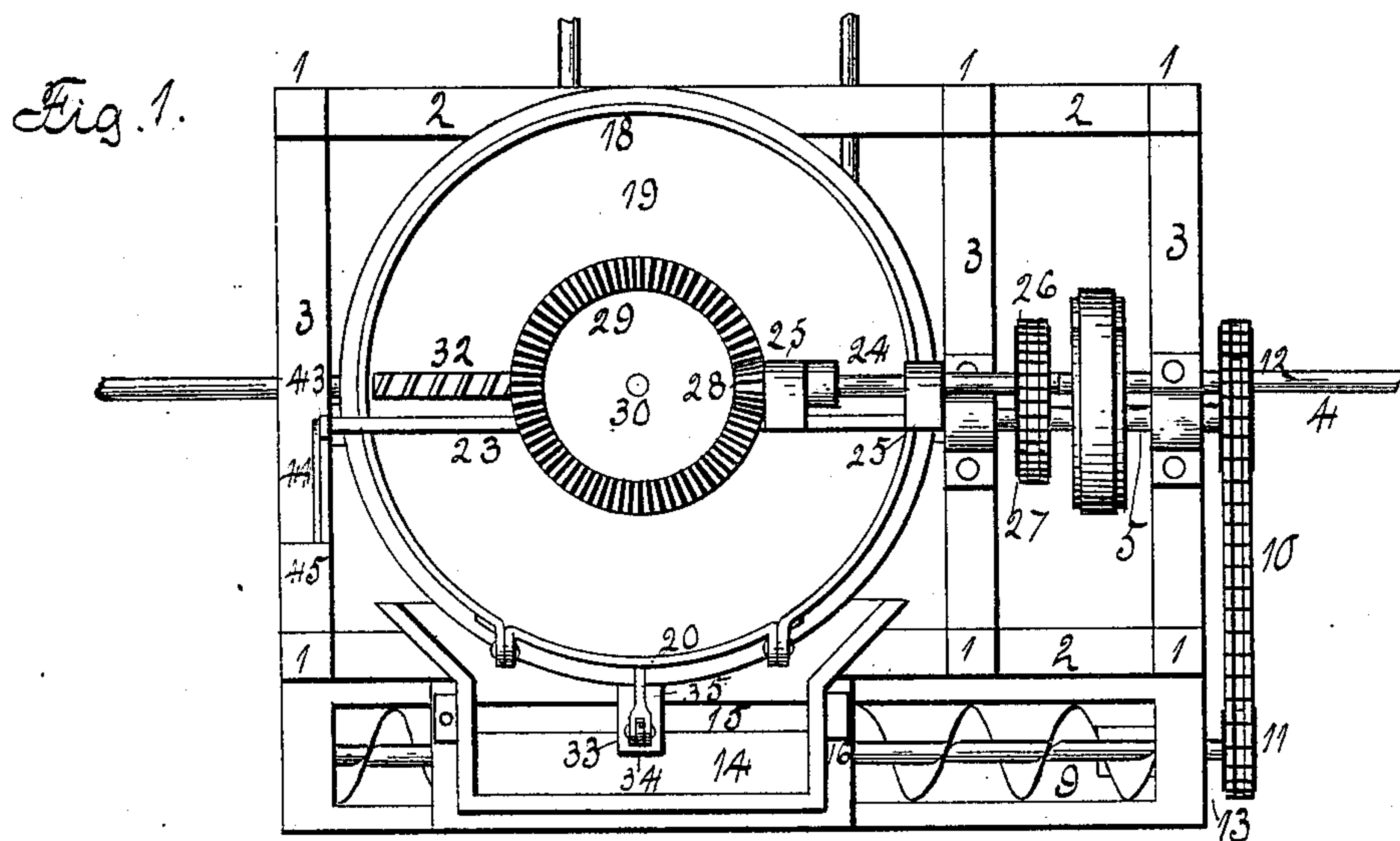


G. H. CORMACK.
GRAIN DRIER.

No. 584,926.

Patented June 22, 1897.



Witnesses:
A. K. Lillibridge
E. Behel.

Inventor:
George H. Cormack
By A. O. Behel
att.

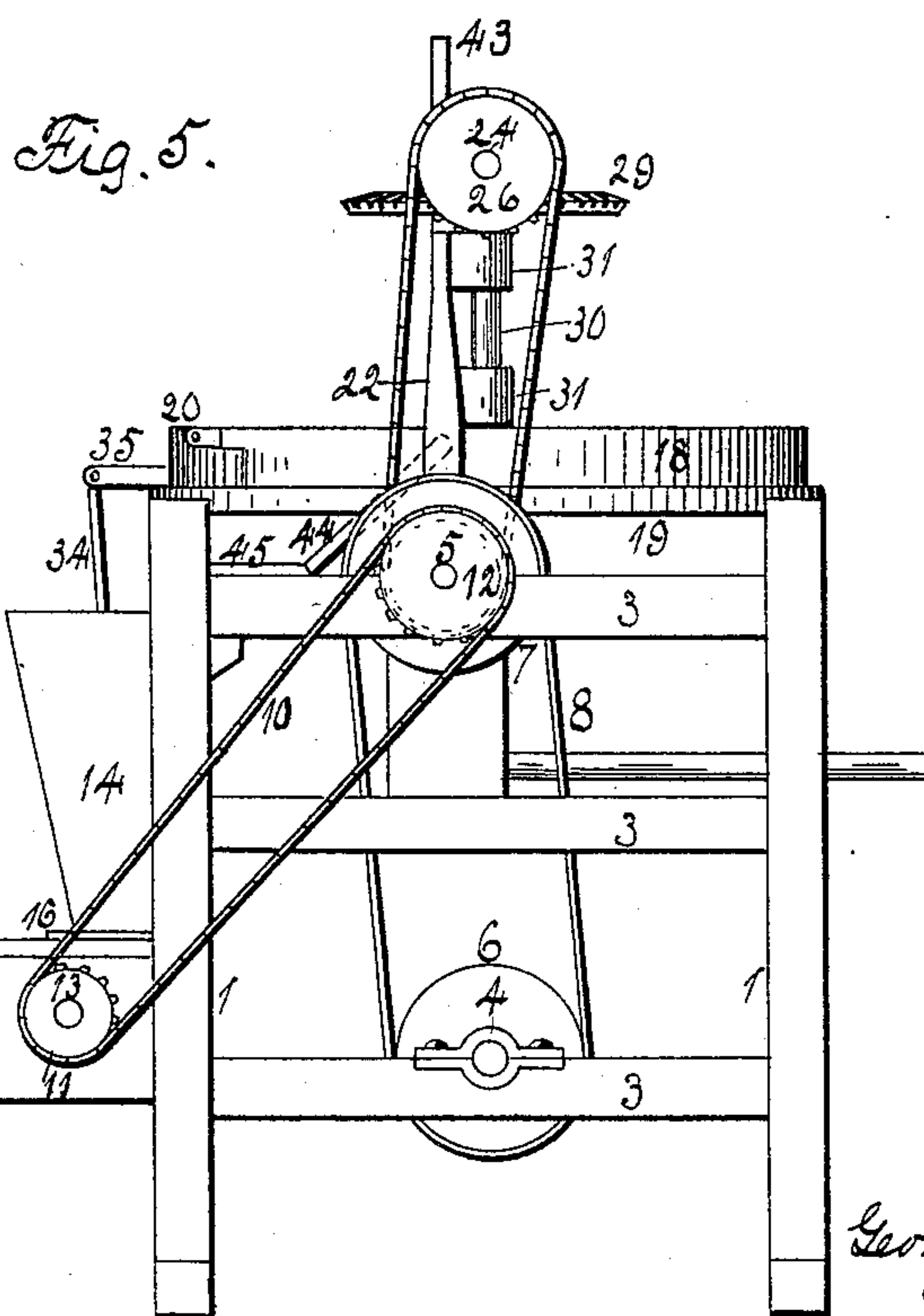
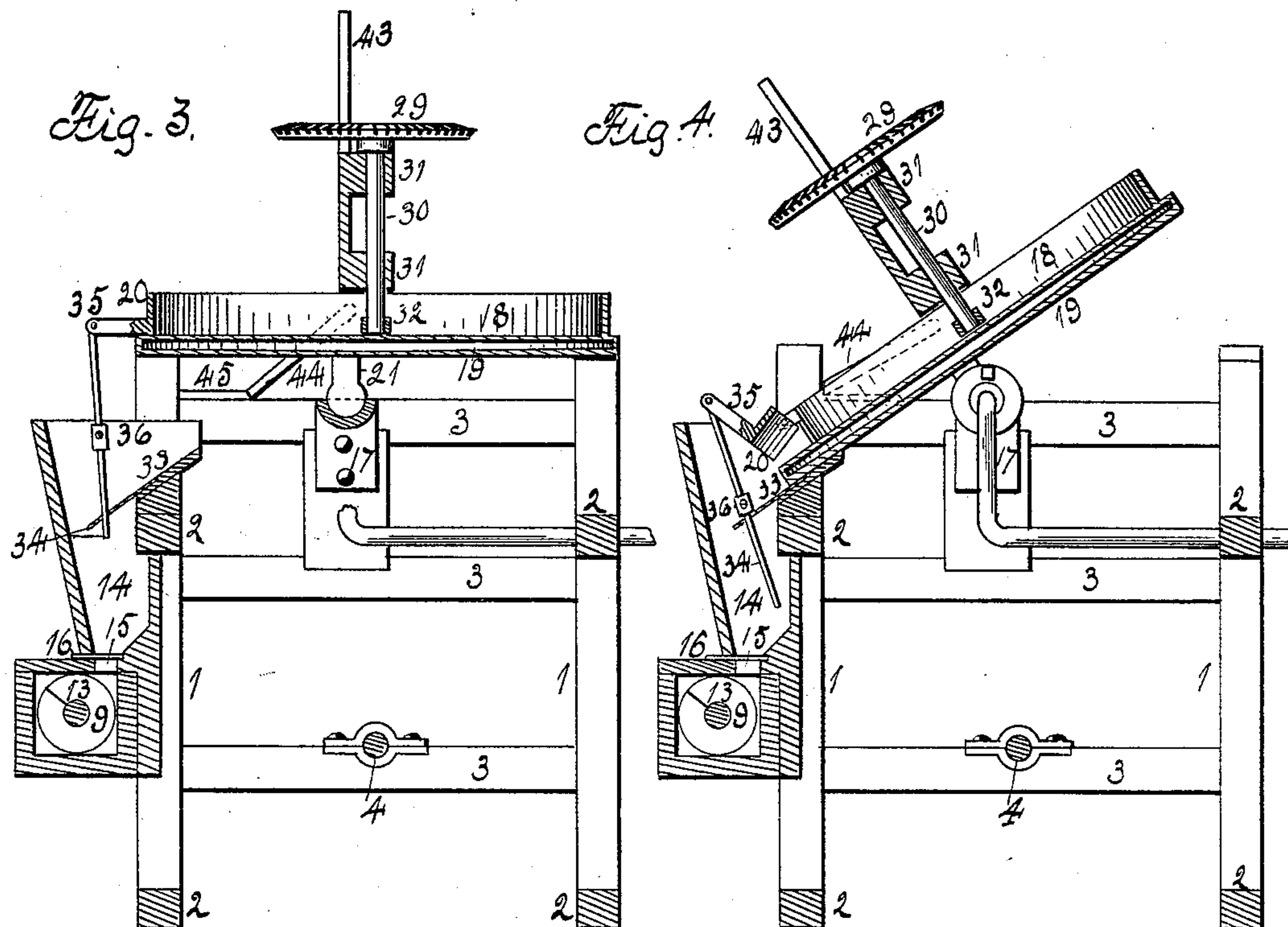
(No Model.)

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UNITED STATES PATENT OFFICE.

GEORGE H. CORMACK, OF ROCKFORD, ILLINOIS.

GRAIN-DRIER.

SPECIFICATION forming part of Letters Patent No. 584,926, dated June 22, 1897.

Application filed January 11, 1897. Serial No. 618,781. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. CORMACK, a citizen of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Grain-Driers, of which the following is a specification.

The object of this invention is to construct a grain-drier in which a pan is employed to receive the grain and in which agitators are employed to stir the grain during the drying process, the pan is pivotally supported in order that it may be tipped to discharge its contents.

The further object of this invention is to form a steam-pipe connection with the pan, one section of the pipe is held stationary and the other section movable with the pan, the sections joined by a stuffing-box permitting the passage of the steam during the tipping of the pan.

In the accompanying drawings, Figure 1 is a plan view of my improved grain-drier. Fig. 2 is a vertical lengthwise central section. Fig. 3 is a vertical transverse central section showing the pan in its horizontal position. Fig. 4 is a vertical transverse section showing the pan tipped. Fig. 5 is an end elevation.

The main frame in this instance consists of the corner-posts 1, connected by the upper and lower series of the horizontal lengthwise bars 2 and the upper and lower series of horizontal transverse bars 3. A main driving-shaft 4 is supported by two of the transverse bars 3, and a short shaft 5 is supported by two of the bars 3. The main driving-shaft supports a pulley 6, and the shaft 5 supports a pulley 7. These pulleys are connected by a belt 8.

A conveyer 9 is located in front of the frame and driven by a chain belt 10, connecting sprocket-wheels 11 and 12, secured to the shaft 13 of the conveyer and to the shaft. Above the conveyer is located a hopper 14, having an opening 15 communicating with the conveyer, and a movable slide 16 closes the opening. Two supports 17 are secured to the inner face of two of the bars 3, having their upper faces recessed in semicircular form. A pan of cylindrical form has its bottom formed with a steam-chamber 19, and its upper face has a flange or rim 18. A portion

20 of the rim has a pivotal connection with the main portion and serves as a gate for the discharge of the grain from the pan.

Brackets 21 depend from the under face of the pan, having their ends in cylindrical form and seated in the recesses of the supports 17, forming a rocking connection between the pan and main frame. These brackets have upward extensions 22 and a horizontal cross-bar 23. This cross-bar supports a shaft 24 in bearings 25, to which is secured a sprocket-wheel 26, which has a linked-belt connection with the sprocket-wheel 27, secured to the shaft 5. The inner end of the shaft 24 supports a beveled toothed wheel 28, which meshes with the teeth of a beveled toothed wheel 29, secured to a vertical shaft 30, held supported in bearings 31, depending from the cross-bar 23. The lower end of this vertical shaft supports agitators 32, located within the pan.

Within the hopper 14 is located an arm 33, having a perforated end. From the movable portion of the rim of the pan extends an arm 35, to the end of which is pivotally connected a rod 34, supporting a movable weight 36. The lower end of this rod is guided by passing through the opening in the arm 23.

The chamber 19 in the frame is heated by steam supplied through a pipe formed of two sections 37 and 38, the former section having a connection with the pan and communicating with the chamber near its outer edge. This section has a horizontal portion connected by a stuffing-box 39 to the stationary portion which is connected to the steam-supply.

To the center of the pan is connected an exhaust-pipe composed of the section 40, movable with the pan and connected by a stuffing-box 41 with a stationary portion 42.

The stuffing-boxes are located in the same horizontal plane with the pivotal connection of the pan with the main frame in order that the rocking of the pan will not break the pipe connection with the steam supply and exhaust. To one of the uprights 22 is secured a hand-lever 43, to which is pivoted a dog 44, its free end engaging a stop 45 when the pan is in a horizontal position.

The pan is held in a horizontal position when in use and is filled with grain. By

means of the connection with the agitator 32 the grain is kept in motion, preventing it from being burned, and when sufficiently dried the dog is raised clear of the stop and by means
 5 of the handle the pan is rocked upon its pivotal connection with the main frame, the stop 36 will come in contact with the arm 33, and the further rocking movement of the pan will cause the movable portion 20 of the rim of the
 10 pan to move upon its pivotal connection with the main portion of the rim, thereby permitting the grain to be discharged into the hopper and by the conveyer carried to the place of deposit.

15 Upon returning the pan to its horizontal position the dog will engage the stop, holding it in position.

It will be noticed that the shaft 5 is located on the pivotal center of the pan's connection
 20 with the main frame in order that the link-belt connection with the agitator in the tilting of the frame will be free to rotate the agitator, thereby preventing the stopping of the agitator and assisting the discharge of the
 25 grain; also, that the pivotal connection of the pan with the main frame is in advance of the center of the pan, so that the weight of the structure supporting the vertical shaft 24 will act as a counterbalance to the pan during its
 30 tipping movement.

It is intended to locate any suitable num-

ber of these driers in a row and all driven from the same main shaft 4.

I claim as my invention—

1. In a grain-drier, the combination of a 35 suitable support, a cylindrical dish-shaped receptacle, an agitator located within the receptacle, means for rotating the agitator, the receptacle and agitator having a tilting connection with the main frame. 40

2. In a grain-drier, the combination of a suitable support, a cylindrical dish-shaped receptacle having a tilting connection with the support, a section of the rim of the receptacle made automatically movable. 45

3. In a grain-drier, the combination of a suitable support, a cylindrical dish-shaped receptacle having a tilting connection with the support, the pivot being set off the center of the receptacle. 50

4. In a grain-drier, the combination of a suitable support, a cylindrical dish-shaped receptacle having a tilting connection with the support, a rotatable agitator located within the receptacle and tilting therewith, the bottom of the receptacle formed into a steam-chamber, and a steam supply and exhaust pipe connection with the chamber. 55

GEORGE H. CORMACK.

Witnesses:

A. O. BEHEL,
 E. BEHEL.