C. W. CAMP.

GRAIN DISTRIBUTER.

APPLICATION FILED NOV. 25, 1907.

946,201.

Patented Jan. 11, 1910.

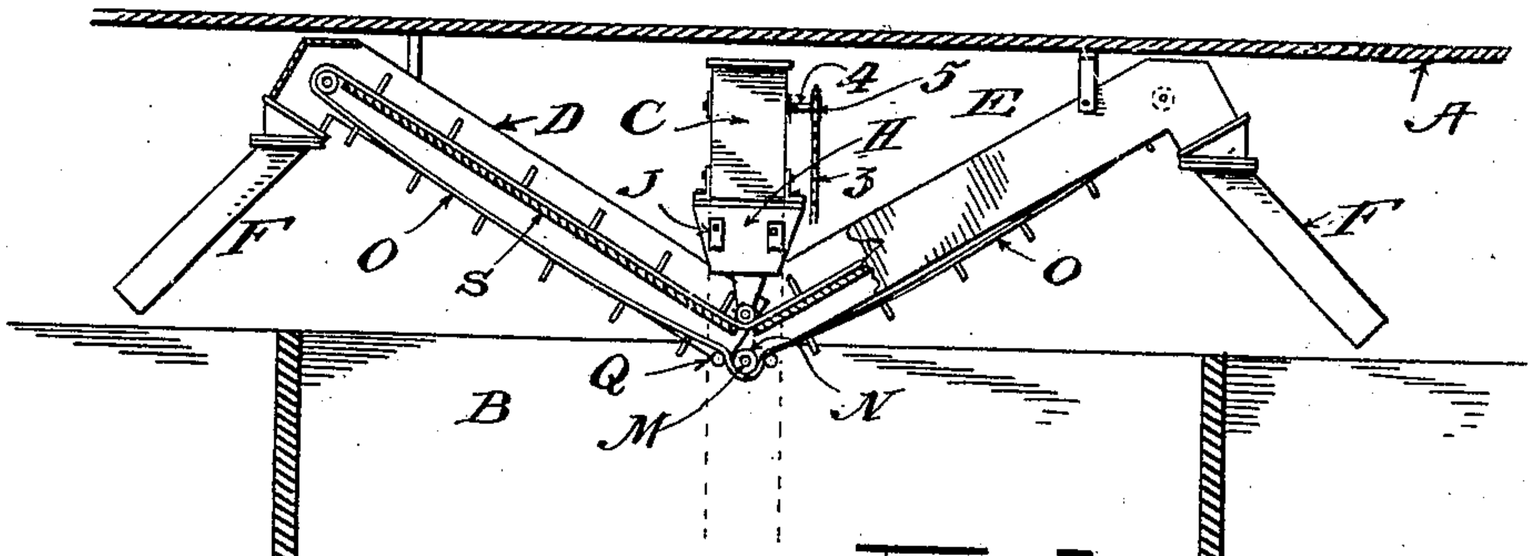


FIG. 1.

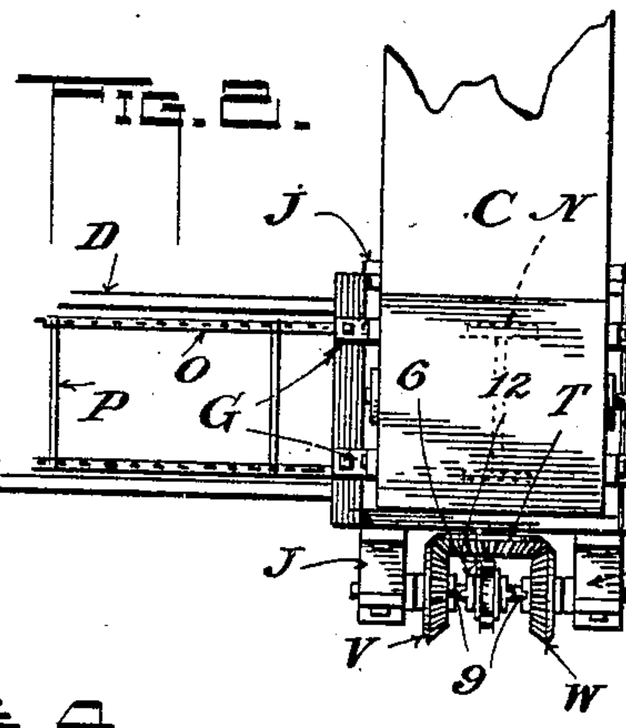


FIG. 2.

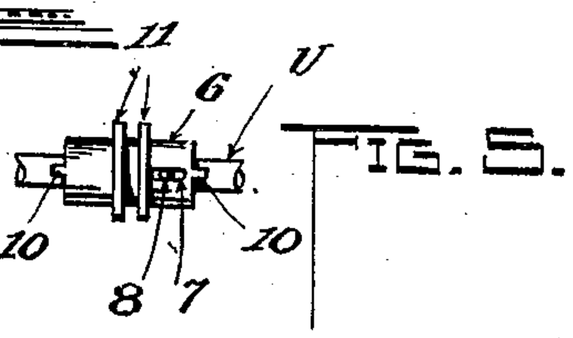


FIG. 5.

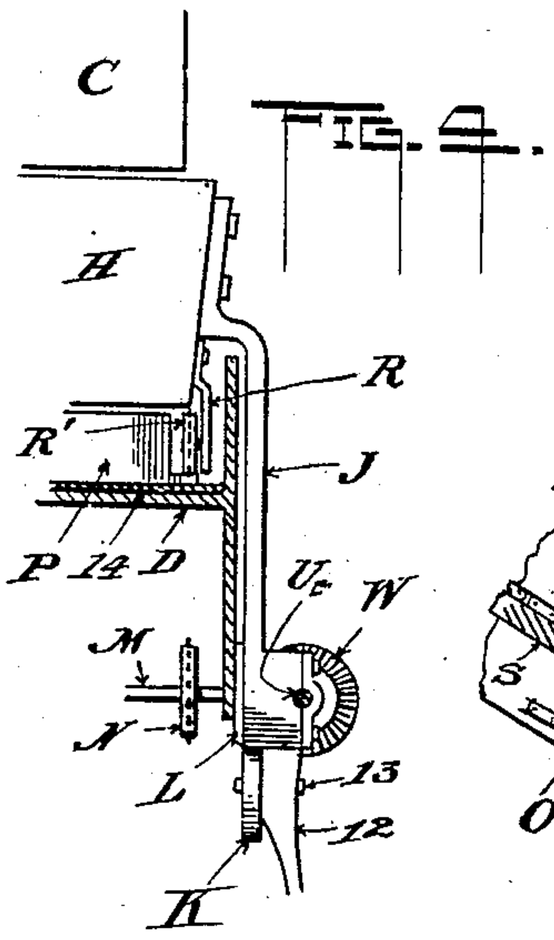
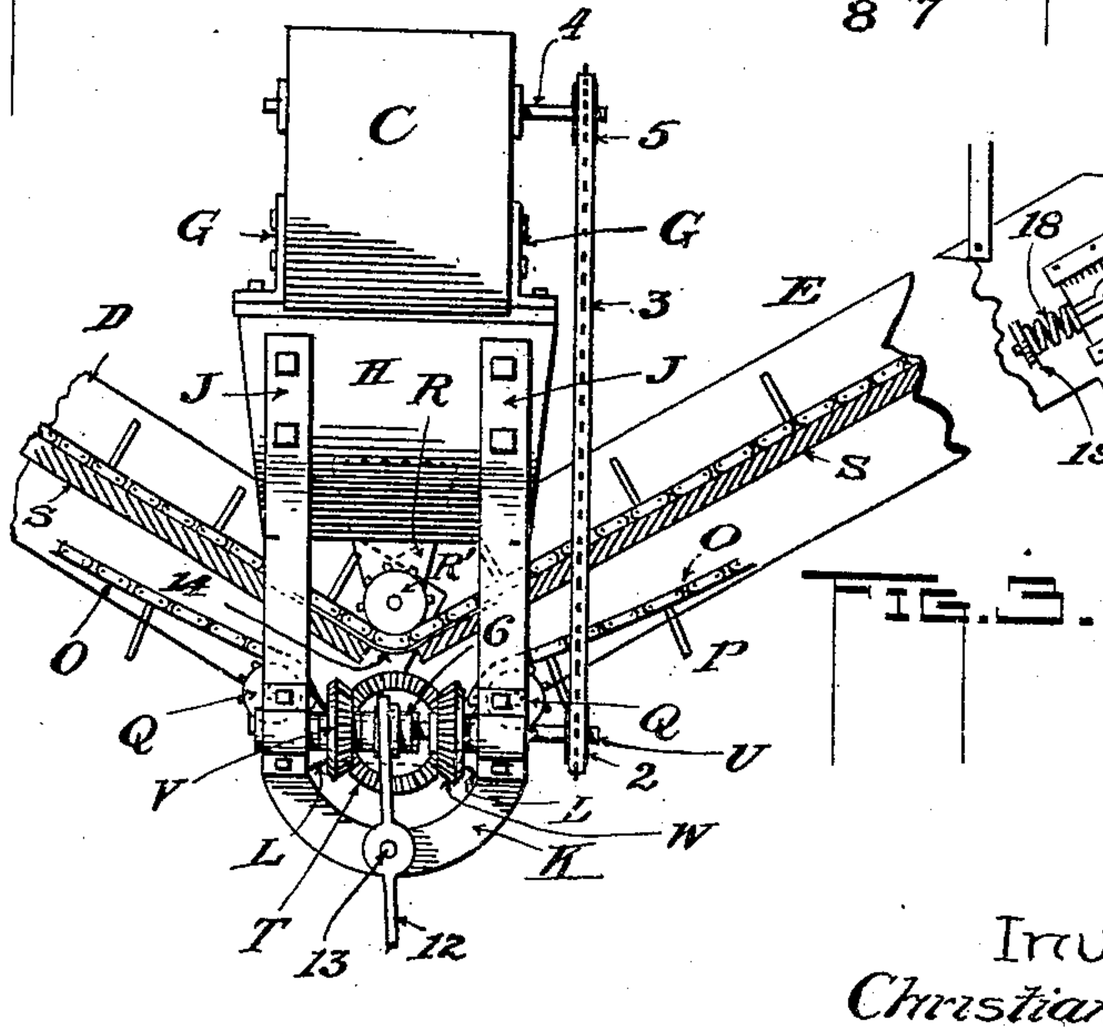


FIG. 4.



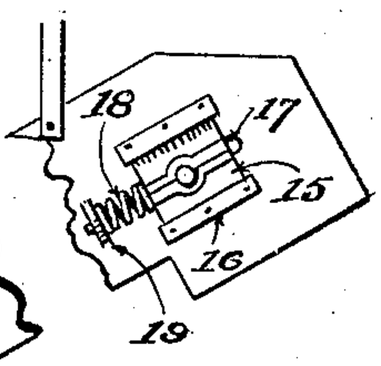


FIG. 3.

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UNITED STATES PATENT OFFICE.

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GRAIN-DISTRIBUTER.

946,201. Specification of Letters Patent. Patented Jan. 11, 1910.

Application filed November 25, 1907. Serial No. 403,836.

To all whom it may concern:

Be it known that I, CHRISTIAN W. CAMP, citizen of the United States, residing at Metamora, in the county of Woodford and State of Illinois, have invented certain new and useful Improvements in Grain-Distributers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to grain distributing mechanism for granaries.

The primary object of my invention is to provide means by which grain can be carried to an extremely high point in the top of the granary before being delivered into the receiving bins. Ordinarily it is not possible to distribute the grain from a very high point on account of the structure of the means usually employed for that purpose.

It is my purpose to provide means by which bins of the greatest height can be filled with grain so that a greater storage capacity can be had.

In the appended drawing, Figure 1 is a vertical longitudinal section of a portion of a granary showing its ridge pole and the bins with my invention shown in position for use, part of the same being shown in section and certain working parts removed. Fig. 2 is a plan of the head of an elevator showing a conveyer and driving mechanism beneath it. Fig. 3 is a side elevation of the conveyer, the elevator-head and the connection between them and also showing the gearing therefor. Fig. 4 is a transverse section of part of one of the conveyers showing portions of the gearing. Fig. 5 is a view of a shiftable sleeve or clutch.

A indicates the ridge pole of a granary and B the storing bins.

C is an elevator such as is commonly used for elevating grain, while D and E represent two inclined conveyer sections connected at their lower ends and into which the elevator discharges its grain, the upper free ends being suitably hung from the roof of the building. The upper ends constitute the discharge ends and are provided with suitable movable distributing spouts F which may or may not be used and which, if used, may be of any desired length and inclined at any angle. Suspended from the elevator head by means of hangers G is a hopper H for receiving grain from the elevator and delivering it to the conveyer, said hopper, however, may be dispensed with and the elevator may discharge directly into said conveyers if desired.

At J are hangers secured to the hopper, their lower ends being connected and braced by a yoke K, Fig. 3, said hangers also having a member L connected to and between them above said yoke, which is also shown in Fig. 4. This latter member constitutes a bearing for a shaft M, Figs. 1 and 4, for the conveyer drag to be described, said shaft providing a pivotal support for the two conveyer sections, there being one of the said plates L at each side of the conveyer though only one of them is shown.

N indicates a sprocket wheel on the shaft M, Figs. 1, 2, and 4, beneath which run sprocket chains O carrying the usual flights P said chains O carrying the usual flights while at each side of each said wheel N is an idler Q, the latter being suitably carried on any portion of the device and serving to hold the drag in proper driving relation with said sprockets N. Suspended from the hopper by means of hangers R within the conveyer, are idlers R′, but one of which is shown, beneath which the chains run and by means of which the latter are held upon the bottoms S of the conveyer sections.

On one end of the shaft M, outside the conveyer, is a beveled gear T and extending at right angles to said shaft and having bearings in the hangers J is a shaft U having thereon two beveled gears V W said gears being free to turn upon said shaft, both meshing, however, with the said gear T. One end of the shaft U carries a sprocket wheel 2 and a sprocket chain 3 serves to transmit motion thereto from a shaft 4 at the elevator head through a sprocket wheel 5. Mounted upon and shiftable along said shaft U between the gears V, W is a sleeve 6 having a longitudinal slot 7 through which extends a pin 8 carried by the shaft U, Fig. 5, whereby the sleeve is made to revolve with said shaft.

As shown in Fig. 2, the adjacent ends of the hubs of the gears V W are provided with notches 9 and the sleeve 6 described is provided with projections or lugs 10 adapted to engage said notches. The sleeve 7 is fur-

ther provided with annular flanges 11 between which and straddling the sleeve is a forked shifting-lever 12 pivoted at 13 to the yoke K described. The mechanism thus arranged serves to drive the drag of the conveyer sections in either direction, said drag, as shown by the figures, consisting of but a single length extending through both sections; the shaft 4 of the elevator imparting a continuous motion to the shaft U. If the sleeve which constitutes a clutch be shifted into engagement with one or the other of the gears V, W, the drag will be driven in one direction or the other through the gear T. By this means grain delivered by the elevator into the conveyer can be elevated and discharged from either one of the sections.

As already stated herein, the shaft M constitutes a pivot for both conveyer sections so that said sections may be adjusted for height to accommodate any pitch of roof.

When setting up the apparatus in the building the elevator is placed in position, the conveyers suspended in place and adjusted with their discharge ends as high as possible beneath the roof of its ridge pole. Though not shown, any suitable means may be used by which to prevent grain being lost from the conveyer sections where they join. The adjacent ends of the bottoms S are separated in order to allow the movement of the section, and in order to provide a closed bottom, I have provided a flexible metal plate at 14 which bridges the gap between said bottoms and one end may be secured in place while the other may slide upon the opposite bottom portion.

In order that the drag may accommodate itself to various strains I have provided a boxing at 15 at the free end of the conveyer, Fig. 3, which is slidable in guides 16 there being a slot 17 in the conveyer to permit the shaft to shift. A compression spring 18 bears against one side of the said boxing its other end resting against an ear 19 on the conveyer. The boxing will thus be normally held by the spring so as to keep the proper tension upon the drag and at the same time as the conveyers are moved allow said drag to shorten or lengthen. Although I have shown but one of these compensating devices one is also used upon the opposite conveyer. I may use but one of the conveyer sections but in using both I am enabled to deliver in two directions as shown. It is also evident that the conveyer may be arranged at right angles to the ridge pole as well as parallel thereto.

From the foregoing it can be seen that although the elevator may discharge grain at a point some distance below the roof of the building yet by using an inclined conveyer I am enabled to readily elevate the grain to the highest possible point for its distribution and having this in mind, as well as any structure the equivalent of that described by which this object can be acomplished,

I claim:

1. In a grain distributing mechanism of the character described, two separately and outwardly inclined conveyer sections connected at their lower ends, a shaft extending through both sections and forming the connection between them, a single drag extending through both sections and adapted to deliver grain at the top of either section, means on the shaft to engage and impart movement to the drag, means to drive the shaft, other means to reverse the direction of drive of said shaft, and devices above the shaft in engagement with the drag to hold it upon the bottoms of both sections.

2. In a grain distributing mechanism of the character described, two separately and outwardly inclined conveyer sections connected at their lower ends, a shaft extending through both sections and forming the connection between them, a single drag extending through both sections and adapted to deliver grain at the top of either section, means on the shaft to engage and impart movement to the drag, means to drive the shaft, other means to reverse the direction of drive of said shaft, devices above the shaft in engagement with the drag to hold it upon the bottoms of both sections, and an elevator having its discharge end overhanging the juncture of the sections.

3. In a grain distributing mechanism of the character described, two separately and outwardly inclined conveyer sections connected at their lower ends, a shaft extending through both sections and forming the connection between them, a single drag extending through both sections and adapted to deliver grain at the top of either section, means on the shaft to engage and impart movement to the drag, means to drive the shaft, other means to reverse the direction of drive of said shaft, devices above the shaft in engagement with the drag to hold it upon the bottoms of both sections, an elevator having its discharge end overhanging the juncture of the sections, and mechanism to impart movement to the driving shaft of the drag from the elevator.

4. In grain distributing mechanism of the character described, a conveyer comprising two upwardly extending divergent sections meeting at their lower ends, a drag extending through both sections, means stationed at the meeting of the sections for holding said drag in operative position upon the bottom of said sections, a wheel carrying driving shaft at the place of meeting of the sections for driving the drag, an elevator for discharging grain into the conveyer at the said place of meeting, means for driving the elevator, means between the same

and the shaft of the conveyer for driving the latter from said elevator, and means for changing the direction of travel of the said drag.

5. In a grain distributing mechanism of the character described, a conveyer comprising two upwardly extending divergent sections meeting at their lower ends, and pivoted at said lower ends, a drag extending therethrough, means at the place of meeting of the sections for holding the drag in operative position upon the bottom of such sections, a drive shaft at said place of meeting for driving the drag, a flexible member lying upon the bottom of the adjacent ends of the sections to cover the joint between them, means for keeping a yielding tension upon the drag, and means for reversing the direction of movement of the latter.

6. In a grain distributing mechanism of the character described, a conveyer composed of two upwardly extending divergent sections pivoted together at their lower ends by which to admit of vertical adjustment at their upper ends, a flexible member lying upon the adjacent ends of the conveyer bottoms, a single drag extending through the conveyer, means for keeping a yielding tension upon the drag, driving wheels beneath the juncture of the sections for moving the drag, idler wheels adjacent to the driving wheels for keeping the drag in engagement therewith, and means for reversing the direction of movement of the said drag.

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

CHRISTIAN W. CAMP.

Witnesses:
CHAS. B. MCDOUGAL,
L. M. THURLOW.