

W. J. APPLGATE.  
GRAIN DRIER.

APPLICATION FILED MAR. 7, 1910.

983,198.

Patented Jan. 31, 1911.

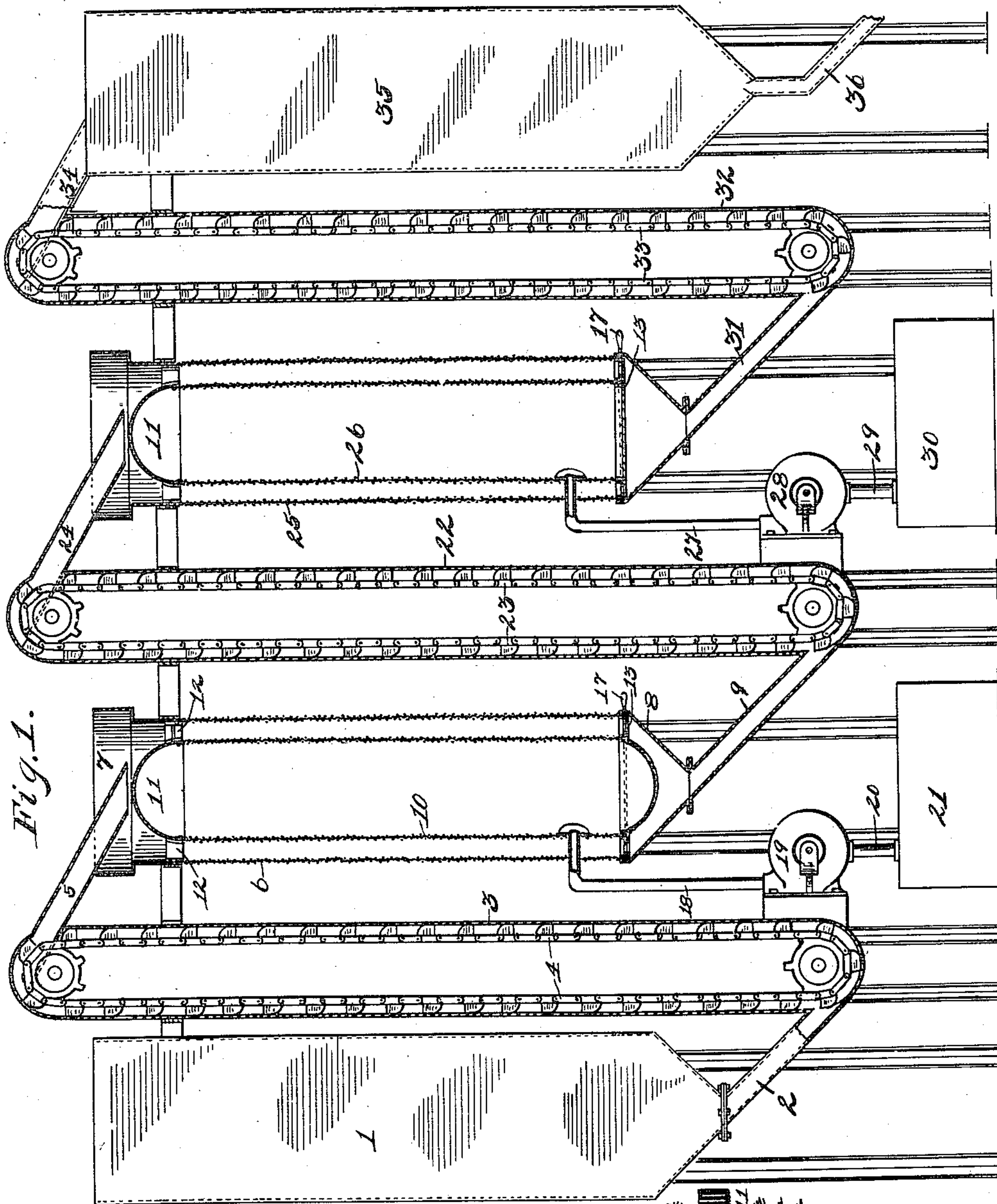


Fig. 1.

Witnesses:  
E. E. Wessels  
B. G. Richards

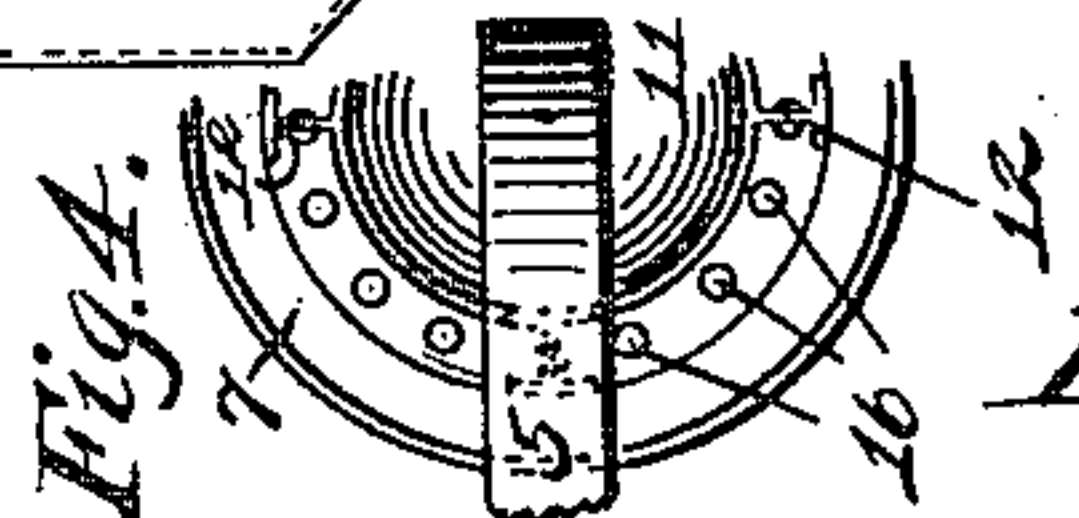
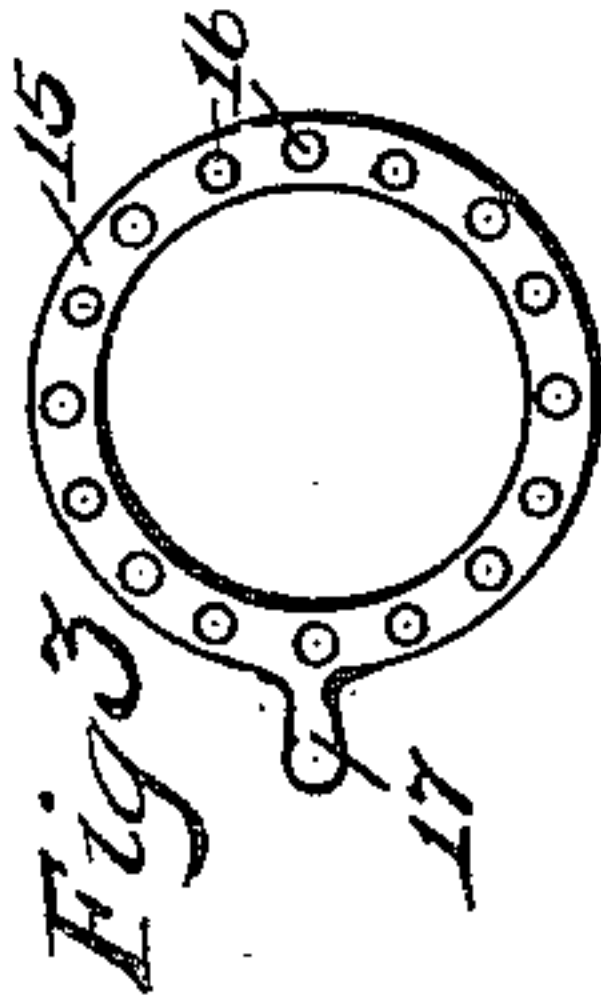
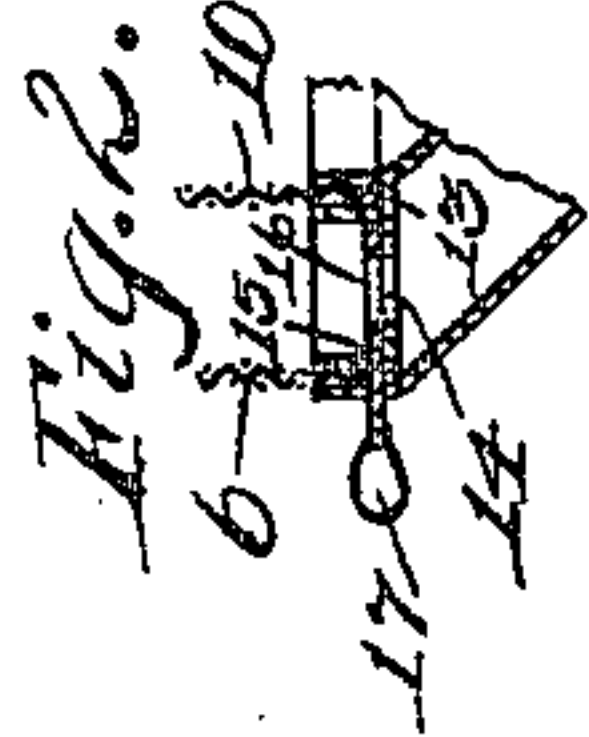


Fig. 4.  
Inventor:  
William J. Applegate,  
By Jashnak N. Stone  
his Attorney.



# UNITED STATES PATENT OFFICE.

WILLIAM J. APPLGATE, OF CHICAGO, ILLINOIS.

## GRAIN-DRIER.

983,198.

Specification of Letters Patent. Patented Jan. 31, 1911.

Application filed March 7, 1910. Serial No. 547,699.

*To all whom it may concern:*

Be it known that I, WILLIAM J. APPLGATE, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Grain-Driers, of which the following is a specification.

My invention relates to improvements in grain driers and has for its object the production of a grain drier which shall be of improved construction and operation.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be more readily understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a sectional elevation of a grain drier embodying my invention, Fig. 2 is an enlarged detail section illustrating the construction of discharge plate employed, Fig. 3 is a plan view of the discharge plate, and Fig. 4 is a partial top plan view of one of the grain receptacles.

The preferred form of construction as illustrated in the drawings comprises a grain bin 1 having a discharge chute 2 leading to the elevator casing 3 in which operates a bucket elevator 4. At its upper end casing 3 is provided with a discharge chute 5 leading to the top of an exterior tube 6 consisting of wire mesh or other foraminated material. At its top tube 6 is reinforced by means of a metallic guard 7. At its bottom tube 6 is provided with a discharge hopper 8 and a discharge chute 9. An inner tube 10 composed of wire mesh material and having an imperforate top and bottom is mounted within tube 6 co-axially therewith. The top of tube 10 is dome shaped as shown and is placed directly under the mouth of discharge chute 5 so that grain entering therethrough will be uniformly distributed around tube 10 in the annular space inclosed by tube 6. The upper end of tube 10 is positioned in tube 6 by means of arms 12 and its lower end is supported and positioned by means of an annular plate 13 having perforations 14 therein. An annular plate 15 having perforations 16 adapted to register with perforations 14 is placed on top of plate 13 and provided with a handle 17 projecting through a slot in the wall of tube 6. A pipe 18 communicating with the interior of tube

10 leads from a fan 19 which is in turn connected by means of a pipe 20 with a cook oven 21 or other suitable source of heat. By this construction it will be observed that grain from bin 1 will be placed in the annular space between tubes 10 and 6 and that heated air from oven 21 may be continuously passed therethrough by fan 19. By adjusting plate 15 on plate 13 the rate of discharge of grain from said annular space may be regulated as desired so as to prolong this treatment as conditions may require.

Chute 9 leads to another elevator casing 22 provided with a bucket elevator 23 and discharge 24 leading to tubes 25 and 26 which are similar in construction and operation to tubes 6 and 10. Tube 26 is connected by means of pipe 27 with a fan 28 which in turn is connected by means of a pipe 29 with a refrigerator 30. By this construction it will be observed that the grain passing through the space between tubes 26 and 25 will be subjected to the action of a constant current of cooled air and that this treatment may be regulated by adjusting plate 15 on plate 13.

The discharge chute 31 of tube 25 leads to another elevator casing 32 in which operates a bucket elevator 33 to convey the dried and cooled grain to a discharge chute 34 leading to discharge bin 35. Bin 35 is provided with a discharge chute 36 arranged to lead directly to grain cars below it.

It will be noted that by employing the above described apparatus grain may be continuously dried and cooled ready for shipment and that the apparatus employed is simple and economical of construction.

While I have illustrated and described the preferred construction for carrying my invention into effect this is capable of variation and modification without departing from the spirit of my invention. I therefore do not wish to be limited to the exact details of construction set forth but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

In a device of the class described, a grain bin having a discharge chute at its bottom; an elevator arranged to receive and elevate grain from said chute; a discharge chute at the top of said elevator; an exterior wire



mesh tube arranged to receive the discharge from said elevator chute; an interior wire mesh tube arranged co-axially with said exterior tube and provided with imperforate top and bottom, the said top consisting of a dome-shaped member; a hot air furnace; a fan; a pipe leading from said furnace to said fan; a pipe leading from said fan, passing through the side of said exterior tube and emptying into said interior tube; a discharge chute for said exterior tube; an elevator adapted to receive and elevate grain from said last mentioned chute; a discharge chute at the top of said last mentioned elevator; an exterior wire mesh tube arranged to receive the discharge from said last mentioned elevator chute; an interior wire mesh tube arranged coaxially with said exterior tube and provided with imperforate top and bottom, said top consisting of a dome-shaped member; a refrig-

erator; a fan; a pipe leading from said refrigerator to said fan; a pipe leading from said fan, passing through the side of said exterior tube and emptying into said interior tube; a discharge chute for said last mentioned exterior tube; an elevator arranged to receive and elevate grain from said last mentioned chute; a discharge chute at the top of said last mentioned elevator; a discharge bin arranged to receive the discharge from said last mentioned chute; and a discharge chute for said discharge bin, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM J. APPLGATE.

Witnesses:

HELEN F. LILLIS,  
JOSHUA R. H. POTTS.