

G. J. BICKHART.
 ELEVATOR HEAD.
 APPLICATION FILED SEPT. 30, 1912.

1,107,882.

Patented Aug. 18, 1914.

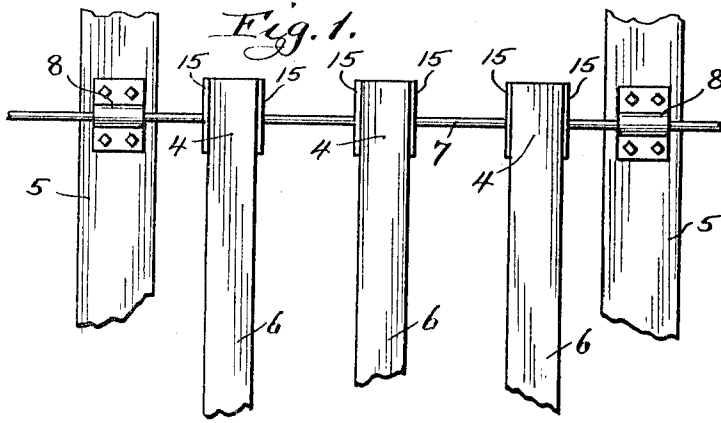


Fig. 2.

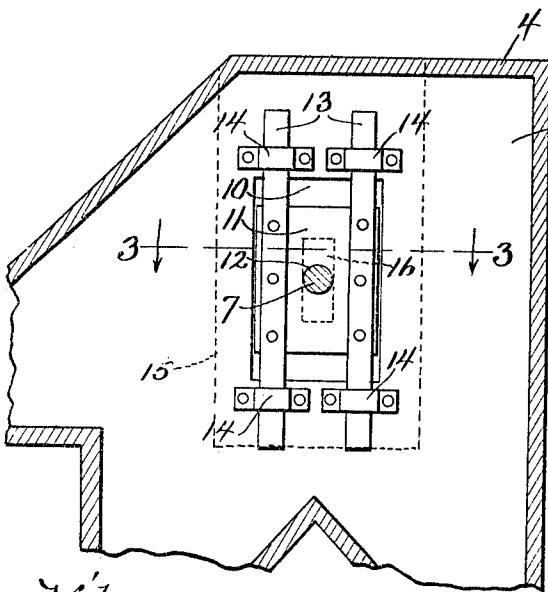
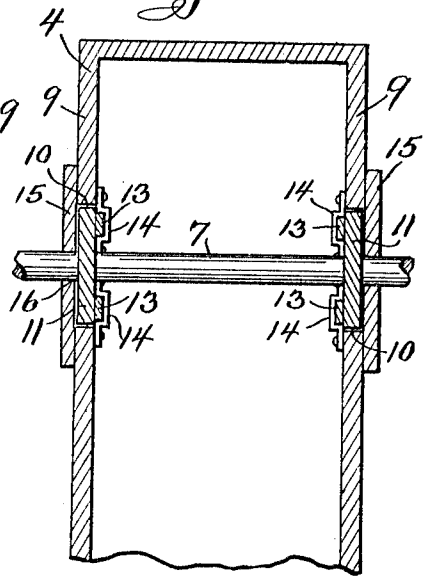


Fig. 3.



Witnesses:
 John J. Madler
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Inventor:
 Gabriel J. Bickhart

UNITED STATES PATENT OFFICE.

GRABILL J. BICKHART, OF HILBERT, WISCONSIN.

ELEVATOR-HEAD.

1,107,882.

Specification of Letters Patent.

Patented Aug. 18, 1914.

Application filed September 30, 1912. Serial No. 723,270.

To all whom it may concern:

Be it known that I, GRABILL J. BICKHART, a citizen of the United States, residing at Hilbert, in the county of Calumet and State of Wisconsin, have invented a new and useful Elevator-Head, of which the following is a specification.

My invention relates to grain elevator heads in which a shaft pierces the head and operates the elevator belt; and the objects of my invention are first, to make an elevator head with a shifting journal box for the shaft; second, to make the elevator head with shaft bearings free to slide up and down and still have a close fit to prevent the escape of dust; third, to make a device which will prevent excessive friction between the shaft and the head when the supports of both vary in relative positions; fourth, to make a cheap durable and novel device and other objects to become apparent from the description to follow.

In the construction, and operation of grain elevators as heretofore made the elevators were supported on a suitable foundation, and the shaft supports or bearings were secured to uprights of the mill building, thus the elevators and the shafts were supported on separate foundations and at times or after considerable time the one foundation would settle more than the other and cause considerable wear at the points where the shafts enter the elevator heads. This settling and wear is more or less depending on the soil beneath the foundations and the weight of the mill contents, and is often the direct cause of fires, resulting from the friction between the shaft and the elevator heads.

My invention is designed to prevent all friction or wear between the shaft and the elevator heads and thus of course prevent fires also.

It consists of providing each elevator head, with portions of its side walls, that are pierced by the shaft, vertically slidable, so that if the shaft and elevator head move vertically relative to one another, that portion, of the head which is made vertically slidable, will move with the shaft, and the friction resulting from the rotation of the shaft is only very slight as it is only the weight of the parts which are made vertically movable which bear on the shaft.

To describe my invention so that others versed in the art to which it pertains can make and use the same I have illustrated it on the accompanying sheet of drawings forming a part of this specification in which:

Figure 1, is an elevation of a series of elevator heads embodying my invention; Fig. 2, is a vertical sectional view through one of the elevator heads embodying my invention and Fig. 3, is a horizontal sectional view taken on line 3—3 of Fig. 2.

Similar reference characters refer to similar parts throughout the several views.

In the drawing Fig. 1, shows three elevator heads 4 located between two posts or uprights 5 forming a part of the mill building not shown. The elevators 6 are supported on suitable foundations not shown. The elevator belts are driven by a shaft 7 which pierces the elevator heads in the usual way and is supported in the bearings 8 secured to the posts 5. While the elevators 6 and the posts 5 are shown close together in the drawing, they are seldom close together in actual practice; and for this reason it is impractical to have the elevators and the mill building supported by the same foundation. If the mill building settles more than the elevator heads and if the elevators settle more than the mill building the shaft moves upward with respect to the elevators, and the construction of the elevator heads to be described prevents any binding or excessive friction between the shaft and the elevator heads at all times irrespective of which part settles the most.

Since all the elevator heads are duplicates and the sides of each head are duplicates, I will describe only one side which is pierced by the shaft 7. The side wall 9 of the head 4 is provided with a rectangular opening 10 into which is fitted a rectangular board 11 having a central perforation 12 to fit snugly about the shaft 7. The board 11 is made somewhat shorter than the opening 10 so that it is free to move up and down a considerable distance within the opening 10. To retain the board 11 in the same vertical plane with the side 9 I provide the straps 13 rigidly secured to the board 11 and having their upper and lower ends extending some distance beyond the ends of the board 11 where they are arranged to be guided by the cleats 14 secured to the wall

9. Thus it is clear that if the shaft 7 moves down or up with respect to the head 4 it will carry the board 11 with it.

Some means is provided to prevent the escape of dust and grain from the head 9 through the opening 10, and I have indicated one such means comprising a board 15 of sufficient dimensions to close said opening rigidly secured to the side wall 9 by any convenient means as nails or screws. The central part of the board 15 is provided with a vertical slot 16 of sufficient width to permit the free passage of the shaft 7. The board 11 is of such length that it will always lap over and close the slot 16 in the board 15.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a device of the class described, an elevator head provided with a vertical wall pierced by a shaft and provided with a vertically elongated opening through which the shaft extends, a suitable board fitted into said opening to have vertical play therein and provided with a perforation through which the shaft fits snugly, suitable straps mounted rigidly on said board with their ends extending beyond the ends of the board

and suitable guides on the wall of the elevator head for the ends of said straps to slide in.

2. In a device of the class described, an elevator head provided with a vertical wall pierced by a shaft and provided with a vertically elongated opening, a board fitted into said opening lying in the same vertical plane with the wall of the elevator head arranged to have vertical play therein and provided with a central perforation through which the shaft fits snugly, suitable straps rigidly mounted on said board having their ends extending beyond the ends of the board, suitable guides on the wall of the elevator head to guide the straps and board in their movements, vertically and means for constantly closing the opening through the wall of the elevator head above and below said movable board.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses this 23rd day of August 1912 at Hilbert, Wisconsin.

GRABILL J. BICKHART.

Witnesses:

JOHN J. MADLER,
CORA LUELOFF.