Aug. 28, 1923. 1,466,010

J. F. WITTLER

GRANARY AND ELEVATOR CONSTRUCTION

Filed Dec. 7, 1921 2 Sheets-Sheet 1

FIG. 1.

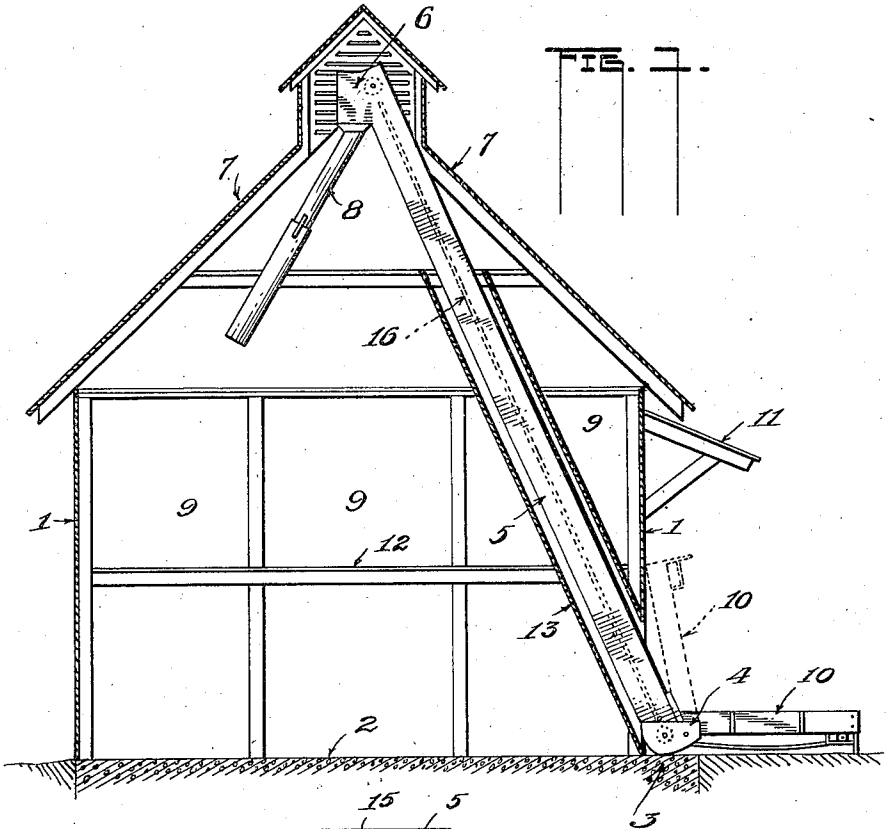
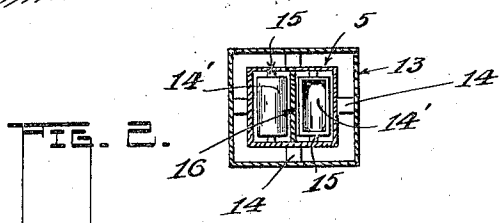


FIG. 2.



INVENTOR.
J. F. Wittler,
BY
L. M. Thurlow
ATTORNEY.

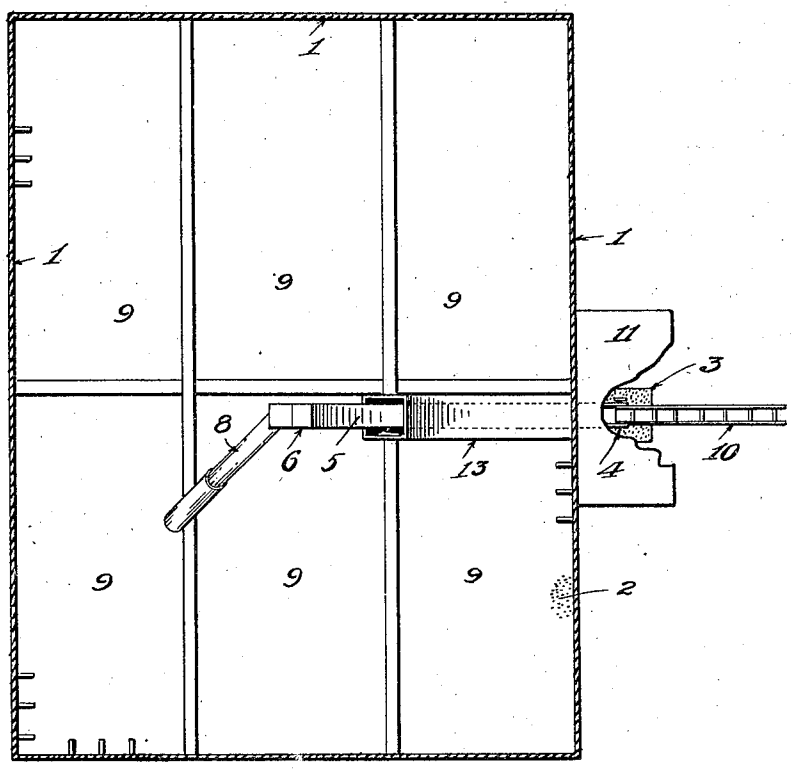
Aug. 28, 1923. 1,466,010

J. F. WITTLER

GRANARY AND ELEVATOR CONSTRUCTION

Filed Dec. 7, 1921 2 Sheets-Sheet 2

FIG. 3.



INVENTOR.
J. F. Wittler;
BY L. M. Thurlow.
ATTORNEY.

Patented Aug. 28, 1923. 1,466,010

UNITED STATES PATENT OFFICE.

JOSEPH F. WITTLER, OF CHATSWORTH, ILLINOIS.

GRANARY AND ELEVATOR CONSTRUCTION.

Application filed December 7, 1921. Serial No. 520,489.

To all whom it may concern:

Be it known that I, JOSEPH F. WITTLER, a citizen of the United States, residing at Chatsworth, in the county of Livingston and State of Illinois, have invented new and useful Improvements in Granary and Elevator Construction; 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 granaries and elevators, but particularly to the manner of disposal of elevators within granaries with respect to the outer walls and the bins thereof. It has for an object to so dispose an elevator in a granary that the greatest amount of grain storage space will be conserved.

A further object is that of locating an elevator within a granary to house it from the weather, and that its disposal shall be such that the grain-storage space will be reduced as little as possible.

Another object of the invention is to so dispose an elevator in a granary that the space within the latter usually reserved for a driveway, due to the usual location of the elevator and its conveyor, may be utilized as storage space.

Still another object is to enclose an elevator practically wholly within a granary with its receiving end or boot adjacent one of the outer walls of the latter whereby the usual conveyor for the said boot while wholly outside the grain storage space of said granary may be protected from the weather and without interfering with driveway space outside the building.

Another and important object is that of providing an elevator for a granary that will be of the shortest possible length while straight throughout requiring the least possible power for its operation, its head will be centrally located in the granary and its boot extending just outside the granary enclosure, and which can be observed throughout its length whereby when there is trouble of any nature the operator being able to see it may stop operations before any great damage to any of the machinery parts results.

In the appended drawings,

Figure 1 is an end elevation of a granary showing the position of an elevator according to my invention.

Figure 2 is a transverse section of the elevator showing an enclosure or housing therefor, and

Figure 3 is a plan of the granary and elevator.

When an elevator is placed within a granary it has been the practice to erect it within the central portion thereof requiring a driveway in order to reach the conveyor with the load to be elevated. This custom results in a loss of space within the building that might otherwise be employed for grain storage. Again, in order to have the bins of about equal storage capacity the driveway has quite often extended through the middle of the building requiring that the elevator, in order to leave passageway, be placed at one side of such driveway. Since the discharge end must be placed in the apex of the roof in order to be in the best position to distribute the grain to all the bins and also so that the elevator head may be placed at the highest point of the building, part of the elevator body must be placed at an angle to the balance thereof resulting in great friction, and necessarily more power is required than would be required under different circumstances.

Again when an elevator is stationed outside the building it is necessarily of considerable length, and, in addition to calling for expensive construction it requires a great deal of chain and other parts, besides which the structure is exposed to the weather so that added power is required to operate the mechanism.

Again, the elevator and the conveyor therefor when projecting outside the building obstruct the yard driveways and interfere with free movements of vehicles.

In my device the elevator is wholly confined within the granary except as to its boot, or a portion thereof, the conveyor for discharging grain into the boot being disposed close to the building so that it may be raised to rest against the wall thereof where it may be protected from the weather while leaving the yard space about the granary practically unobstructed.

1 represents the outer wall of the granary mounted upon a suitable foundation which for example may be a concrete bed 2 which may extend at one side of the building forming a support 3 for the lower end of the boot 4 of an elevator 5, the latter extending through the wall of the building and arising in a straight line at an angle, its head 6 ter-

minating in the apex of the roof 7 centrally of the said building where grain may be discharged through the spout 8 into any one of the bins 9 below, Figure 3.

Any usual conveyor 10 pivoted to the elevator-boot 4 lies just outside one of the walls of the building in position to receive grain from a wagon driven parallel to said wall. When not in use the conveyor may be raised and made to rest against the wall protected from the weather and if desired a roof-projection 11 may be extended from the building as a further protection while being high enough to interfere in no way with the wagon when raised to the dumping position.

Due to the fact that the elevator is disposed in the position described and shown the central part of the granary, usually open from end to end required for driveway purposes, may now be utilized for storage and thereby the storage space of the building may be increased to a very great extent. Again, even though the central passage were desired for purposes other than for a driveway the floor 12 for the central bins 9 may be lowered by several feet and still leave head room, increasing the bin capacity, whereas when a driveway is used for elevating purposes the head room is required to be quite high, in order to permit the wagon to be raised sufficiently high to permit it to be fully dumped.

The central bin 9, of course, is extended to the floor at 2 when no passageway is employed thereby gaining practically the full capacity of the building because of the peculiar disposal of the elevator 5.

I have shown a housing 13, built around and spaced from the elevator-leg which is carried up through the bins to hold the grain away from said leg to the end that the operator may have practically an unobstructed of the said elevator-leg from end to end, or vice versa, although other ways may be employed for providing for this ability to watch the operation of the elevating mechanism. Figure 2 shows the housing which is supported from the elevator-leg by interposed spacing blocks 14, for example, at several places.

This figure also shows elevating cups 14′ which are carried by chains 15, and 16 is a dividing board or partition within the elevator-leg against which the ascending series of cups of the cups 14′ may travel in elevating the materials.

The economy of space for grain storage by the peculiar disposal of the elevator within the granary, while housing it from the weather, but with its boot in a position to be loaded into from outside the granary while also under protection from the weather, and the straight form of the elevator of the shortest length by which to eliminate as much friction as possible, all contribute to a most desirable arrangement in the handling of grain.

The boot 4 may lie just within the wall of the building so long as the conveyor 10 can be properly accommodated, although the storage space would be somewhat lessened as a result, the arrangement described and shown being preferred for that reason.

Evidently, instead of the special overhang or projection 11, the edge of the main roof may be extended to overhang the boot and its conveyor.

I claim:

1. The combination with a building including a series of bins for the storage of grain, of an elevator substantially straight throughout its length erected in said building with its head disposed in the top thereof centrally of the said series of bins, its lower end and boot extending to an outer wall of the building, there being an opening in the wall through which material is elevated.

2. The combination with a building including a series of bins filling the entire space therein, of an elevator substantially straight throughout its length extending through the grain space of said building and having its head disposed centrally above the said series of bins, its lower end terminating adjacent one of the outer wall of the building outside the same, and a casing surrounding the elevator and spaced therefrom separating the grain therefrom.

3. In combination, a building for the storage of grain, and an elevator of straight form throughout stationed therein, its head being disposed in a substantially central position in said building, its receiving end extending to and disposed adjacent the bottom of one of the outer walls of the building, there being an opening in said wall, and a conveyor positioned outside the building for discharging grain into said receiving end.

4. In combination, a building for the storage of grain, an elevator substantially wholly housed within the building, its head terminating substantially in a central position therein, its receiving end or boot terminating within an opening in one of the outer walls of said building, and a conveyor for discharging grain into said boot adapted to be raised against the outer side of said wall.

5. In combination, a building for the storage of grain, including bins, an elevator substantially wholly housed within the building and of a straight form throughout between its head and boot, said head terminating in the top of said building above said bins and a conveyor included with its boot, said conveyor and boot extending through one of the outer walls of the building and terminating just outside the same.

6. In combination, a building for the storage of grain, an elevator housed therein

within the grain receiving space, lying at an angle with it a head centrally disposed within said building, its boot lying at one of the outer walls and adapted to elevate grain through said wall, and a housing extending through the grain receiving space separating the elevator from said space.

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

JOSEPH F. WITTLER.

Witnesses:
COAD HOPPE,
H. C. MCMAHON.