A. M. WISWELL.

GRAIN SAMPLER.

APPLICATION FILED MAY 5, 1917.

1,256,413.

Patented Feb. 12, 1918.

2 SHEETS—SHEET 1.

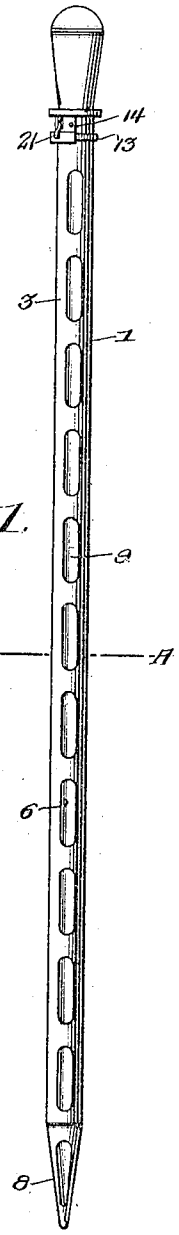
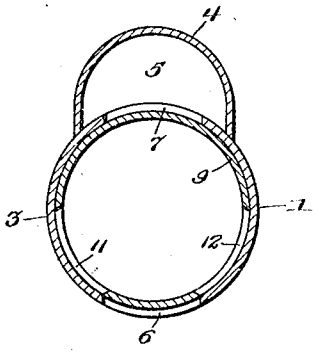


Fig. 1.

Fig. 3.



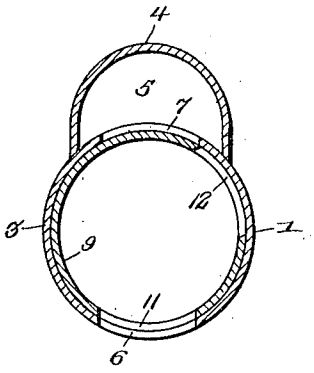


Fig. 4.

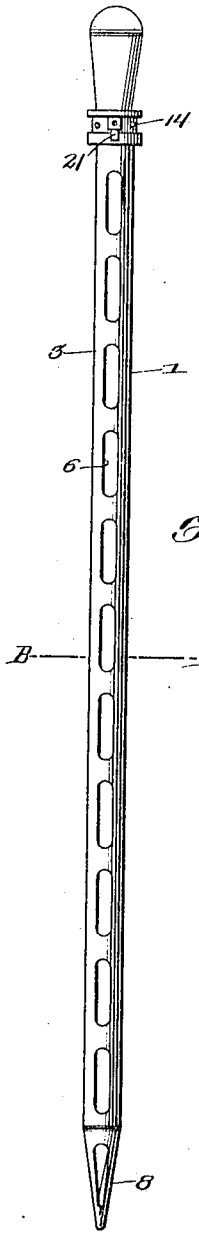


Fig. 2.

WITNESSES

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2 SHEETS—SHEET 2.

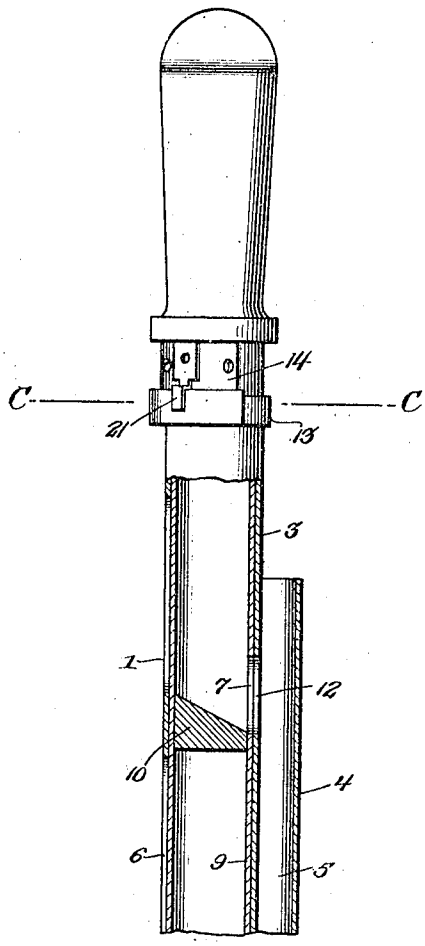
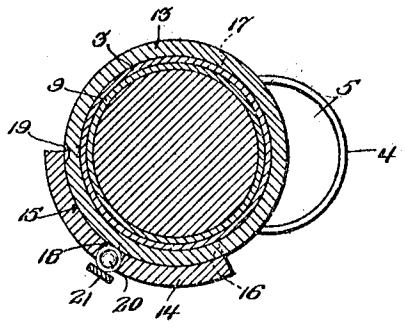


Fig. 5.

Fig. 6.



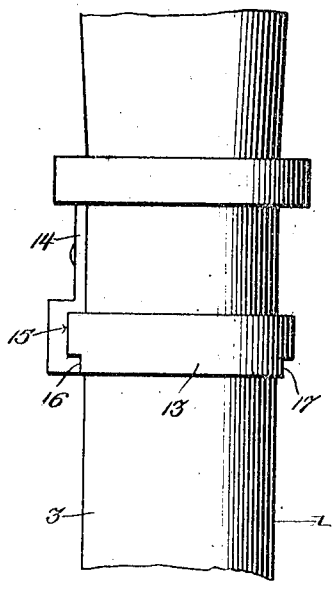


Fig. 7.

WITNESSES

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GRAIN-SAMPLER.

1,256,413. Specification of Letters Patent. **Patented Feb. 12, 1918.**

Application filed May 5, 1917. Serial No. 166,678.

To all whom it may concern:

Be it known that I, ARTHUR M. WISWELL, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented new and useful Improvements in Grain-Samplers, of which the following is a specification.

This invention relates to implements for extracting samples of grain from cars, the primary object of the same being to provide a device of this character having a valve casing provided with ports and an inner casing provided with ports co-acting therewith, the arrangement of the ports being such that a minimum amount of movement of the inner casing relative to the valve casing is necessary in the operation of the device, so that the necessary wear is reduced and the necessity of disassembling the device to remove dirt and chaff, which tends to clog the same is minimized.

A further object of my invention is to provide a simple and durable means for indicating the various operative positions of the inner casing relative to the valve casing, so that the operator may easily determine the same while operating the device.

With these and other objects in view which will be hereinafter fully described and particularly pointed out in the claim, the invention consists in the novel construction and arrangement of parts illustrated in the accompanying drawings forming a part of this specification, in which:—

Figure 1 is a front elevation of a grain sampler closed,

Fig. 2 is a similar view of the implement open,

Fig. 3 is a cross section on the line A—A of Fig. 1,

Fig. 4 is a cross section on the line B—B of Fig. 2,

Fig. 5 is a partial vertical sectional side elevation of the implement showing the inner casing positioned to connect the inclosure thereof with the passage of the chute, as hereinafter described,

Fig. 6 is a cross section on the line C—C of Fig. 5,

Fig. 7 is a partial rear elevation of the outer end of the implement.

Like characters of reference indicate like parts in the various views.

In the drawings 1 designates generally the body of the implement. This body has an outer cylindrical valve casing 3 and a chute member 4 secured on the underside of the valve casing and extending longitudinally thereof, said chute member forming a passage 5 on the outside of the valve casing 3. Inlet ports 6 are formed in the valve casing 3 and are disposed at regular intervals along the length of the valve casing, said ports lying opposite the chute member 4. Outlet ports 7 are formed in the valve casing 3 and connect the inclosure of the valve casing with the passage 5 each port 7 lying opposite a respective port 6. The body 1 has a pointed end 8, which allows the implement to be easily introduced into a bin of grain. An inner casing 9 is provided which is adapted to closely fit within the inclosure of the outer casing. Partitions 10 are secured within the inclosure of the inner casing and divide said inclosure into a series of separate compartments. Inlet ports 11 are disposed at intervals along the inner casing and communicate with respective compartments of the inner casing. The ports 11 are adapted to register with respective ports 6 when the inner casing assumes a certain position respective the outer casing, as hereinafter described. Outlet ports 12 are formed in the inner casing and communicate with respective compartments thereof, and are adapted to register with respective ports 7 when the inner casing assumes another position respecting the outer casing, as hereinafter described. The various ports of the inner casing are so disposed relative to the respective outlet ports thereof that the portion of the wall of said inner casing which lies between two opposing sides of said ports is just wide enough to cover the inlet ports of the valve casing, and the inlet ports of the valve casing are so disposed relative to the respective outlet ports thereof that the portion of the wall of said valve casing which lies between two of the opposing sides of said ports is just wide enough to cover either set of ports in said inner casing whereby the inner casing need only be rotated the width of said inlet ports to effect the closing of the inlet ports and the opening of the outlet ports, see Fig. 4, and to double the width of said inlet port to effect the closing of both inlet and outlet ports of the valve casing.

A flange 13 is formed upon the outer surface of the valve casing 3 adjacent the open

end thereof. A cleat 14 is secured upon the inner casing 9 and has an inwardly facing channel 15 formed thereon embracing the flange 13, and the inner casing is positioned longitudinally respecting the valve casing thereby. Shoulders 16 and 17 are formed upon the flange 13 and are adapted to be engaged by the respective ends of the cleat 14 to enable the operator to ascertain the relative positions of the valve casing 3 and the inner casing 9 when the implement is inserted in a bin of grain.

When the inner casing is positioned so that the inlet ports 11 thereof register with the inlet ports 6 of the valve casing the outlet ports of the inner casing are out of registry with the outlet ports 7 of the valve casing, and when the outlet ports 12 of the inner casing are in registry with the outlet ports 7 of the valve casing the inlet ports 11 of the inner casing are out of registry with the inlet ports 6 of the valve casing. When the inlet ports 11 are in registry with the inlet ports 6 the cleat 14 is positioned at a point intermediate the shoulders 16, 17. A hole 18 is formed in the cleat 14 just above the flange 13, and a depression 19 is formed in the flange 13 and registers with the hole 18 when said inlet ports 11 are in registry with the inlet ports 6. A ball 20 lies in the hole 8 and a spring plate 21 has its one end secured to the cleat 14 and has its other end overlying the said hole 8 to normally hold said ball 20 against the flange 13 and to press the same into the depression 19 when said hole and said depression are in registry. See Fig. 6. By means of the above described mechanism the operator may determine when the inlet ports 11 are in registry with the inlet ports 6. See Fig. 4. When the inner casing is rotated to the left from this position until the cleat 14 engages the shoulder 16 the inlet ports 11 are out of registry with the inlet ports 6, and the outlet ports 12 are in registry with the outlet ports 7 to discharge grain in the compartments of said inner casing into the passage 5 of the chute 4 from which the grain may be drawn through the open end of said chute 4 adjacent the handle 13. When the inner casing is rotated to the right and the cleat 14 engages the shoulder 17 the ports 11 are out of registry with the ports 6, and the ports 12 are out of registry with the ports 7. See Fig. 3. In this position grain may be confined within the compartments of the inner casing, so that samples of the grain at different depths may be carried about in the implement, and at any time when a "mean" sample is desired the inner casing may be rotated to the left until the cleat 14 engages the shoulders 16 when the grain in the compartments of the inner casing may be discharged through the chute member 4.

Having thus fully described my invention, I claim:—

A grain sampler comprising a valve casing having inlet and outlet ports formed therein, an inner casing mounted for rotation in said valve casing and having respective ports therein adapted to register with respective inlet and outlet ports of said valve casing when in different positions relative to said valve casing, a flange on said valve casing, having a depression therein, oppositely disposed shoulders on said flange, a cleat mounted on said inner casing and engaging said flange between said shoulders and having a hole therein adapted to register with said depression when said cleat is positioned intermediate said shoulders, a ball in said hole, and a spring engaging said ball and serving to move said ball into said depression when said hole and depression are in registry, said shoulders and said depression being so disposed as to indicate the various operative positions of said inner casing relative to the valve casing.

In testimony whereof I affix my signature.

ARTHUR M. WISWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."