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TEMPERATURE TAKING GRAIN SAMPLER

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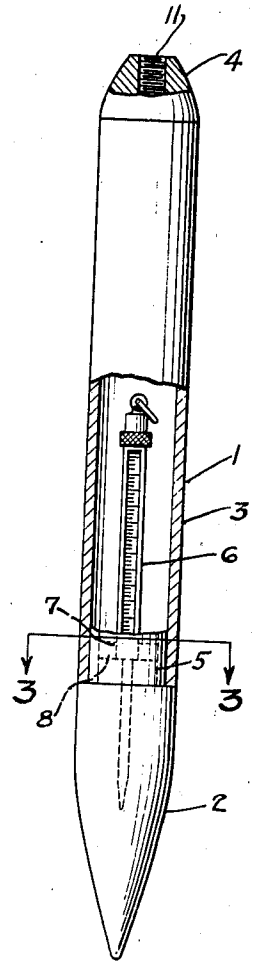


FIG. 1

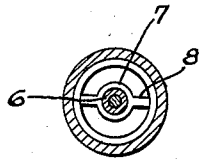


FIG. 3

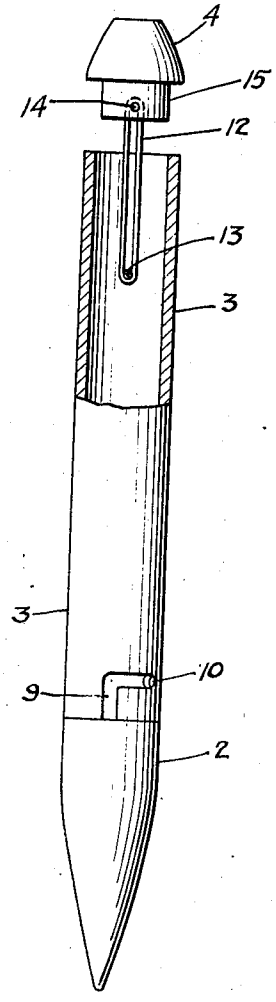


FIG. 2

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TEMPERATURE TAKING GRAIN SAMPLER

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2 Claims. (Cl. 73—354)

My invention relates to a grain sampler for bringing to the surface a sample of grain when in storage, and at the same time, taking the temperature of the grain at that depth so that the state of the grain may be examined as well as its temperature taken.

It is an object of my invention to accomplish the foregoing sampling and taking of temperature by means of a device which is simple to operate, economical to manufacture and sell and which cannot readily become out of order.

With the above more important objects in view and such other minor objects as may appear as the specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawing, in which

Figure 1 is an elevation of my sampler showing a portion of the casing broken to expose the thermometer therewithin.

Figure 2 is an elevation also with a portion of the casing shown broken to indicate the manner in which the cap thereof is removed for the purpose of admitting a sample into the body.

Figure 3 is a section on the line 3—3 in Figure 1.

In the drawing, like characters of reference indicate corresponding parts in the different figures.

It is often necessary to ascertain the temperature of grain in storage at the exact depth from which a sample is taken, however, so far as I am aware, this has hitherto only been accomplished by means of thrusting a thermometer down to the approximate depth desired and taking a specimen of the grain at that approximate depth by means of an ordinary grain sampler.

My invention carries out the two operations together and from the accompanying drawing it will be seen to consist of a casing 1 divided into three parts viz: a pointed nose-piece 2, a body portion 3 and a cap 4. The surface of the nose-piece 2 is flush with the surface of the body portion 3, the upper end of the nose-piece being provided with a flange 5 designed to fit into the lower open end of the body portion. A thermometer 6 is secured at its lower end within the nose-piece, specifically by means of the collar 7 which is held centrally in the plane of the longitudinal axis of the sampler by means of the diametrically extending spokes 8. It will thus be seen that the thermometer is positioned centrally and longitudinally within the body portion 3 so that an elongated, annular space is provided therearound.

By reference to the accompanying Figure 2, it will be seen that a bayonet slot 9 is formed in the body portion 3 adjacent to the lower edge thereof, the same being designed to receive a projecting stud 10 upon the flange 5. By means of this arrangement, the nose-piece may be secured firmly to the body portion and will not become detached when the sampler is being raised to the surface of a mass of grain.

The cap 4 is provided with a central longitudinally extending, internally screw-threaded aperture 11 to receive the externally screw-threaded end of a conventional drive-shaft (not shown), the same being held captive to the body portion 3 by means of the metallic loop or yoke 12 which, it is to be understood, consists of an endless strap through which passes a transverse sub-shaft 13 spanning the body portion 3 and secured at the ends thereto, and a similar sub-shaft 14 spanning the cap 4.

The ends of the sub-shaft 14 are secured in the flange 15 of the cap 4 which, it is to be understood, is machined to engage the open upper end of the body portion 3.

From the foregoing, it will be apparent that when my sampler is being thrust downwardly into a mass of grain, the cap will bear downwardly upon the upper periphery of the body portion 3 and force the sampler down to the desired depth. When, however, the desired depth is reached, and the force upon the drive-shaft reversed, the cap 4 will first become detached from the body portion 3 thereby permitting grain to enter the same and accumulate around the thermometer 6. A further withdrawing force applied to the drive shaft and the cap 4 will raise the sampler via the loop 12 and the sub-shaft 13 and when the sampler has been raised to the surface, the sample of grain can be emptied out of the body portion 3 and the thermometer inspected, by a twist and a pull upon the nose-piece 2 thereby disengaging the stud 10 from the slot 9.

Since various modifications can be made in my invention as hereinabove described and as illustrated in the accompanying drawing, and many apparently widely different embodiments of same made within the scope of the claims without departing from such spirit and scope, it is intended that all matter contained in the accompanying specification and drawing shall be interpreted as illustrative only and not in a limiting sense and I desire only such limitations placed thereon as are specifically expressed in the accompanying claims.

I claim as my invention:

1. A grain sampler comprising in combination,

a longitudinal hollow casing, a thermometer disposed centrally, and in longitudinal alignment therewithin, said casing comprising three parts, a pointed nose piece, a body portion, and a cap secured to the end of said body portion for captive detachment therefrom to uncap said end and admit a sample of grain into said body portion to accumulate around said thermometer, said thermometer being attached to said nose piece, said nose piece being detachable from the forward end of said body portion, said cap being maintained in captive detachment as aforesaid by means of a transverse shaft in said body portion, a transverse shaft in said cap, and a longitudinal loop extending around said shafts.

2. A grain sampler comprising in combination a longitudinal hollow casing having a pointed forward end, a cap for the rear end of said casing having a longitudinal slidingly fitted section for maintaining said cap in longitudinal alignment with the casing when in place thereon, said cap also being provided with a fitting for immovably attaching the cap to a drive shaft, said fitting being positioned so that when the cap is on the drive shaft and also in place on the longitudinal casing, said casing is maintained in a fixed longitudinal position with reference to the drive shaft for facilitating movement of the sampler into the grain, and link means connecting the longitudinal casing and cap for holding the casing in trailing relation to the cap when the two are separated, and further characterized in that the outwardly pointed end piece has a thermometer mounted thereon in a position to be nested in the longitudinal casing when the end piece is in place on the casing.

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