No. 830,383. PATENTED SEPT. 4, 1906.

C. E. TWAMLEY.

SEED CORN TESTER.

APPLICATION FILED JUNE 18, 1906.

Fig. 1.

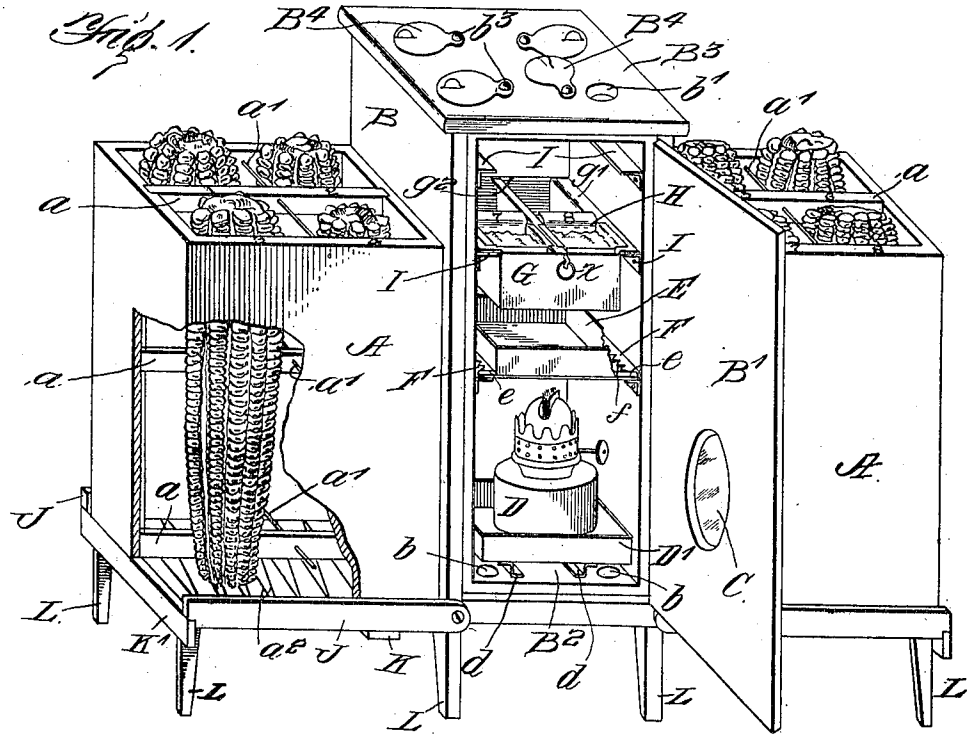


Fig. 2.

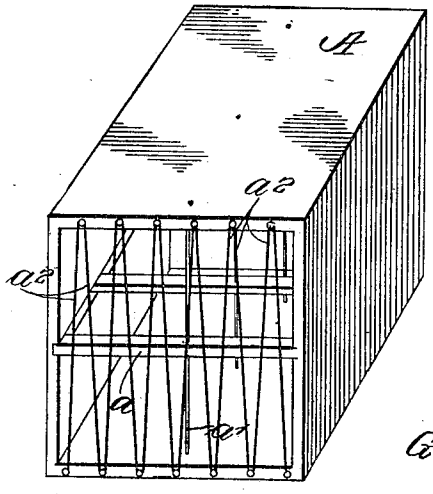


Fig. 3.

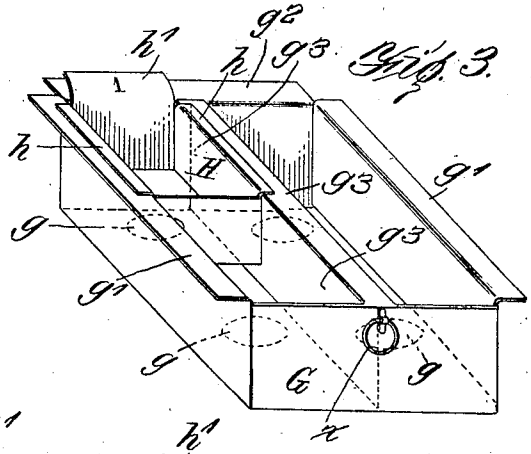
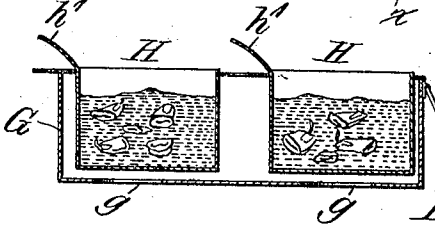


Fig. 4.



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UNITED STATES PATENT OFFICE.

CLARK E. TWAMLEY, OF ALEXANDRIA, SOUTH DAKOTA.

SEED-CORN TESTER.

No. 830,383. Specification of Letters Patent. Patented Sept. 4, 1906.

Application filed June 18, 1906. Serial No. 322,308.

To all whom it may concern:

Be it known that I, CLARK E. TWAMLEY, a citizen of the United States, residing in Alexandria, in the county of Hanson and State of South Dakota, have invented certain new and useful Improvements in Seed-Corn Testers, of which the following is a specification.

The object of my invention is to provide efficient means for testing seed-corn to determine which ears of corn contain good seed or a large percentage of good seed and which contain such a small percentage as to render them unprofitable for use as seed.

According to my invention I provide cribs or holders for the ears of corn, in which they may be placed and held individually, kept ventilated and dry, properly measured, and properly marked for identification.

In connection with the crib I employ a germinating apparatus provided with means for causing the good seed to germinate quickly, and this apparatus is provided with cups or receptacles in which samples of seed-corn from a number of ears may be placed, each cup being marked so that kernels of corn taken from a compartment in the crib bearing one number may be placed in a germinating-cup bearing the same number, and thus the value of the several ears for seed-corn may be determined and recorded without confusion.

In the accompanying drawings, Figure 1 is a perspective view of the germinating apparatus and cribs with some of the parts broken away in order to better illustrate other parts. Fig. 2 is a perspective view of one of the cribs detached. Fig. 3 is a perspective view of one of the drawers and one of the germinating-cups. Fig. 4 shows a longitudinal section through one of the drawers and two of the germinating-cups.

I provide a number of holders or cribs A for ears of corn which are apparently suitable to furnish seed-corn. Any desired number of such cribs may be used. I have shown two in the drawings, one on each side of the germinating apparatus, as it is convenient to so place them when testing the ears. Each crib, as shown, comprises a rectangular frame open at top and bottom and closed on the other four sides. It is divided into four compartments in order to receive four ears of corn. The divisions or partitions may be formed in any suitable way. As shown, cross-pieces *a*, extending from one side of the crib to the other, divide the crib into two parts, while wires *a'*, extending in a direction at right angles to the cross-pieces *a*, further divide the crib, thus providing four compartments. Of course I do not mean to limit myself to a crib divided into four compartments, as any desired number of compartments may be used. I have merely described in detail what is shown in the drawings. The top of the compartments is left open; but wires a^2 are strung across the bottom to form supports for the ears, which are arranged in the manner clearly shown in the drawings. In this way the ears of corn for seed may be stored in the fall and kept an indefinite time. They will be thoroughly dried and ventilated and can be easily moved from place to place. As the compartments are but a little larger in width than the ears, the size or diameter of each ear can be observed and the relative lengths of the ears can also be determined. It will be observed that each compartment contains an identifying-number. Fig. 1 of the drawings shows the compartments at the left-hand side of the apparatus numbered from 1 to 4, inclusive, while the crib on the opposite side has the compartments numbered from 5 to 8, inclusive.

The germinating apparatus comprises a casing B, closed at the rear and at opposite sides, having a front door B', a bottom piece B^2, having ventilating-openings *b*, and a top B^3, having ventilating-openings *b'*, which may be closed or opened or partially closed by covers B^4, hinged at b^3. By means of these hinged covers the passage of air through the apparatus may be properly regulated. The door B' has a window C, through which the interior of the apparatus may be inspected when the door is closed.

A lamp D is attached to a tray D', having rails *d*, which hold the tray above the bottom of the germinating-chamber, so that the ventilating-openings need not be covered. This tray D' is narrower than the interior of the casing, so as to allow the air to rise. Above the lamp is a tray E, provided with laterally-projecting lugs *e*. This tray is adapted to contain water. It is narrower than the germinating-chamber, and the lugs *e* rest on brackets F, attached to the sides of the casing and being preferably serrated at *f* in order to provide better ventilation. Above the water-tray I arrange in the germinating-chamber a series of drawers G, having handles *x*. These drawers are so arranged for the purpose of holding the germinating-cups H, in which the

seed-corn is planted. Any number of drawers may be used. I have shown one in position in the germinating-chamber and a place for another; but a larger number may be employed. Each drawer G is open at the top, closed at its four sides, and the bottom is provided with openings g for allowing air to pass up from beneath through the drawer. On each side each drawer is provided with laterally-projecting-flanges g', adapted to rest on brackets I, secured to the sides of the germinating-chamber. Each drawer may also be provided with a flange g^2 at the rear; but this is not essential. Each drawer is divided into two parts by a partition g^3, running fore and aft and dividing the drawer into two compartments, in each of which I place two germinating-cups H. Each of these cups is closed on four sides and at the bottom and is open at the top. It is formed with flanges h on opposite sides adapted to rest on a flange g' and the partition g^3, and at the rear it is formed with a flange h', serving as a handle and also to receive a mark or a number to identify it. The cups do not fill the compartments in the drawer. The bottom of each cup is arranged some distance above the bottom of the drawer, as shown in Fig. 4, and the cups are slightly narrower and shorter than the compartments, so as to leave space for the passage of air between them.

On each side of the germinating apparatus I provide a frame to receive one of the cribs A. This may be of any suitable form. As shown, it consists of two front and rear bars J, hinged to the casing B and connected by cross-bars K K'. Legs L support the germinating apparatus and the crib-supports. The crib-supports may be folded up against the germinating apparatus in order to economize space when they are not in use.

In using the apparatus two cribs A are placed on their supports on opposite sides of the germinating apparatus. The germinating-cups H may at this time be in a pile anywhere within convenient reach. A number of kernels of corn—say twenty—may be taken from each ear and placed in a correspondingly-marked cup, which may contain sawdust, sand, soil, or any like bed for the seed. In like manner all the cups (or any desired number of them) may be supplied with seed. The beds for the seed are moistened before being placed in the apparatus and, if necessary, may be subsequently moistened from time to time. The cups are then placed in the drawers and the drawers placed in the germinating-chamber, the pan E may be supplied with water and the lamp lighted, and then the door may be closed. The lamp causes the water to be evaporated slowly and supplies moisture to the seed-beds. After a time the good seed will germinate. When a proper interval has elapsed, the door may be opened and each seed-cup may be inspected. If all the seed in a cup have properly germinated, it will be known that the ear of corn in the compartment numbered correspondingly with the cup examined contains good seed. If in another cup none of the seed have germinated, it will be understood that the ear of corn in the compartment numbered correspondingly with this cup is entirely unsuitable for seed. If in a third cup some of the seed have not germinated, but a large percentage have, it will be understood that the ear of corn correspondingly numbered is fairly good for seed, and in like manner the value of all the ears can be determined and recorded.

I have found by actual trial that my testing apparatus properly indicates the value of the seed-corn. Those ears which have been tested and found to contain good seed in my apparatus are found to contain good seed for the field, and in like manner those ears that are found to be bad for seed in my apparatus are bad for seed in the field.

Of course the details of the apparatus may be changed without departing from my invention. I have shown the best way now known to me of carrying out my invention and a way which has been found by actual test to be most satisfactory.

While I have described my improvements as being intended especially for testing corn, it may also be used for testing other kinds of seed.

I claim—

1. A seed-testing apparatus, comprising a germinating-chamber and a crib attached thereto having compartments for holding ears of corn the crib being open at top and bottom and having open-work supports at the bottom for the ears.

2. A seed-testing apparatus, comprising a germinating-chamber, a crib-support hinged thereto, and a crib for holding ears of corn the crib being open at top and bottom having an open-work support at the bottom for the ears of corn and divided into sub-compartments by cross-pieces and wires, substantially as described.

3. A germinating apparatus, comprising a germinating-chamber, a heater within the chamber, a water-tray above the heater, a receptacle for germinating-cups above the water-tray and germinating-cups detachably connected with the holder and each marked or numbered for identification, substantially as described.

4. The combination of a crib having a series of numbered compartments, and a germinating apparatus comprising a germinating-chamber, a heater, a germinating-cup holder, and a series of detachable germinating-cups marked correspondingly with the compartments in the crib.

5. A germinating apparatus, comprising a germinating-chamber, a heater within the chamber, a drawer above the heater and ger-

minating-cups within the drawer having flanges bearing identification marks or numbers, substantially as described.

6. A germinating apparatus, comprising a germinating-chamber, a heater, a drawer formed with laterally-projecting flanges, brackets within the germinating-chamber on which the flanges rest, and germinating-cups within the drawers having laterally-projecting flanges resting on the drawer and flanges marked with identifying-numbers.

7. A germinating apparatus, comprising a germinating-chamber, having ventilating-openings in the bottom and at the top, a lamp within the germinating-chamber, a water-pan above the lamp, a drawer formed with laterally-projecting flanges, brackets within the chamber on which said flanges rest, a partition dividing the drawer and germinating-cups formed with flanges resting on the partition and on the flanges of the drawer and each of which is marked with an identifying-number.

In testimony whereof I have hereunto subscribed my name.

CLARK E. TWAMLEY.

Witnesses:
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