

Sept. 15, 1925.

1,553,310

S. J. ELLIS
COMPRESSION BOX
Filed Dec. 31, 1919

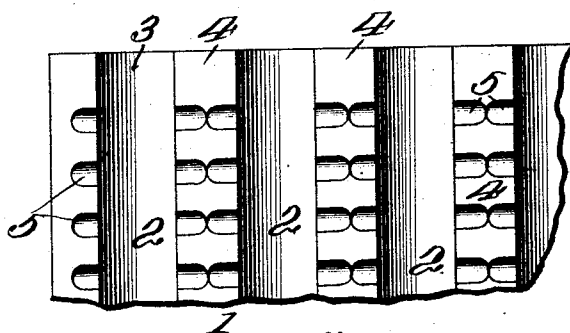
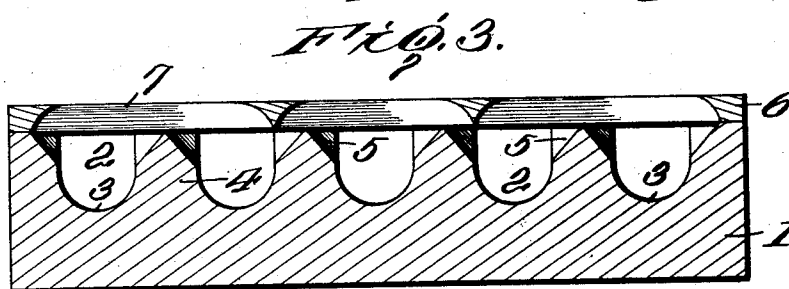
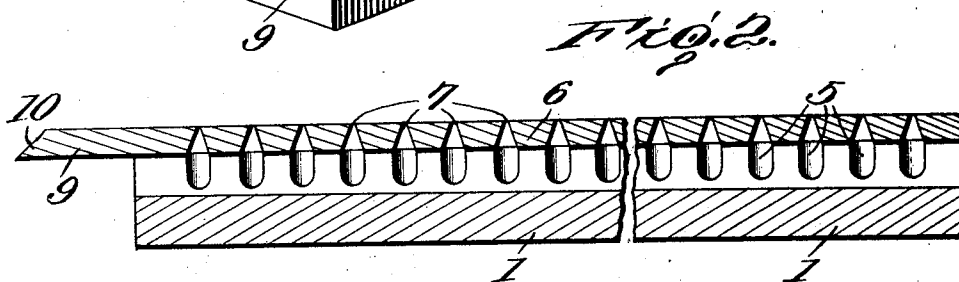
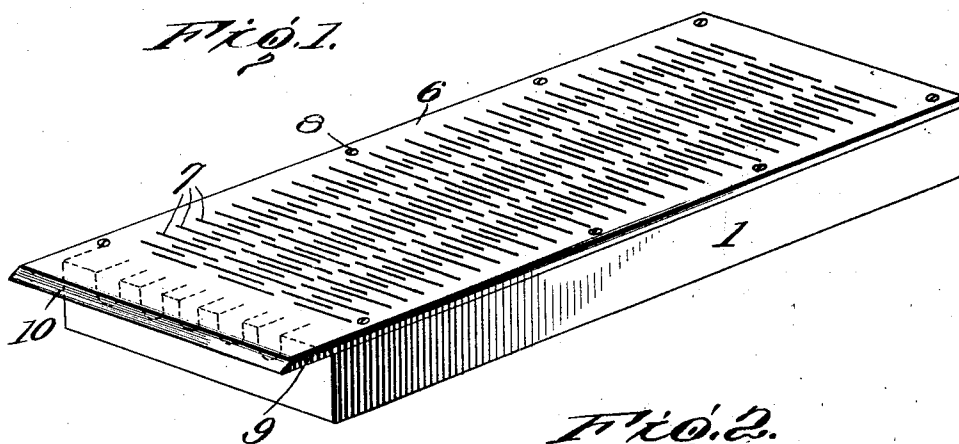


FIG. 4.

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COMPRESSION BOX.

Application filed December 31, 1919. Serial No. 348,635.

To all whom it may concern:

Be it known that I, SAMUEL J. ELLIS, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Compression Boxes, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to certain new and useful improvements in compression boxes used in cotton seed mills, the object being to provide a compression box which is exceedingly simple and cheap in construction and one which is so constructed that the amount of oil extracted will be greatly increased over the present type of boxes.

A further object of the invention is to provide a box which is so constructed that a flat smooth surface is provided so that the life of the cloth used in holding the prepared cotton seed meal in place will be greatly increased.

A still further object of the invention is to provide a compression box which can be readily inserted or removed from the press and one which is provided with an over-hanging mat plate so as to prevent any loose meal from dropping or being projected into the oil ducts thereby overcoming the disadvantages existing in compression boxes of this construction.

A still further object of the invention is to provide a compression box having a base with main and auxiliary drain ducts so that the slits in the mat plate will have a free exit of oil and yet be supported upon a firm foundation so as to withstand the pressure to which the plate is subjected in the pressing operation.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings:

Figure 1 is a perspective view of my improved construction of compression box.

Figure 2 is a longitudinal section through the same.

Figure 3 is a transverse section; and

Figure 4 is a top plan view of a portion of the box, the mat plate being removed.

In the drawing 1 indicates a rectangular box preferably formed of a solid block of metal or any other suitable material having one end of a greater width than the other

for facilitating the inserting and removal of the block. The upper face of the block is provided with a series of longitudinally disposed grooves 2 having rounded inclined bottoms 3 to provide drain ducts allowing the oil entering the same to readily drain out, said grooves extending the entire length of the block so as to provide open ends to facilitate the cleaning. The grooves thus formed in the face of the block form a plurality of parallel arranged ribs 4 which are milled transversely to provide auxiliary ducts 5 which taper as clearly shown in Figure 3 so as to provide drain ducts to carry the oil into the main ducts whereby a clear exit for the oil which is forced through the slits of the mat plate is formed.

By constructing the block in this manner longitudinally disposed inclined drain ducts are formed having transversely arranged auxiliary drain ducts formed in the ribs or partitions between the main ducts in such a manner that a rigid support or foundation is formed for the mat plate to enable the same to withstand the pressure to which it is subjected and at the same time the auxiliary duct provides means for allowing a free exit of oil from the slits of the mat plate without weakening the support in any way.

Arranged over the box thus formed is a mat plate 6 which is provided with staggered arranged slits 7, said slits having their opposite wall beveled to form tapering slits which terminate at the face of the plate so as to form substantially inverted V-shaped passages for the oil which prevents the oil from accumulating within the slits and allows a free exit of the oil into the drain grooves, which prevents a vacuum from being formed therein and I have found in practice that by forming a mat plate with a smooth upper surface that the same will have all the advantages of a distorted surface mat plate as the oil cake dries at the point of contact with the mat plate and prevents the same from slipping. By cutting the slits in this particular manner and staggeredly arranging the same the mat plate is not weakened in any way for the purpose intended.

The mat plate is secured in position upon the box by screws 8 and is formed of a greater length than the box so as to have an over-hanging end 9 which is beveled or

rounded as shown at 10 so as to prevent any loose meal hanging onto the cake from dropping or being projected into the drain duct and by forming the same with a beveled
5 face the oil cakes can be placed in position and removed therefrom.

From the foregoing description it will be seen that I have provided a compression
10 box formed with a series of longitudinally disposed drain ducts separated by supporting ribs which are provided with transversely arranged ducts so as to allow free exit of oil from the staggeredly arranged
15 slits which extend over the partitions thereby preventing sediment from lodging on the partition under the slits of the mat plate. It will also be seen that the mat

plate is formed with a perfectly smooth surface having staggeredly arranged slits which are substantially inverted V-shaped in cross
20 section, the apex of the V's terminating in the face of the plate which prevents the cloth containing the prepared meal from being injured to any extent.

What I claim is:—

25 A compression box comprising a body portion having a series of longitudinally disposed drain ducts, a mat plate arranged over said ducts, said mat plate having an
30 extension at one end thereof.

In testimony whereof I have hereunto affixed my signature.

SAMUEL J. ELLIS.