

(No Model.)

3 Sheets—Sheet 1.

F. W. WIESEBROCK.

APPARATUS FOR PACKING DRIED BREWERS' GRAIN, &c.

No. 346,003.

Patented July 20, 1886.

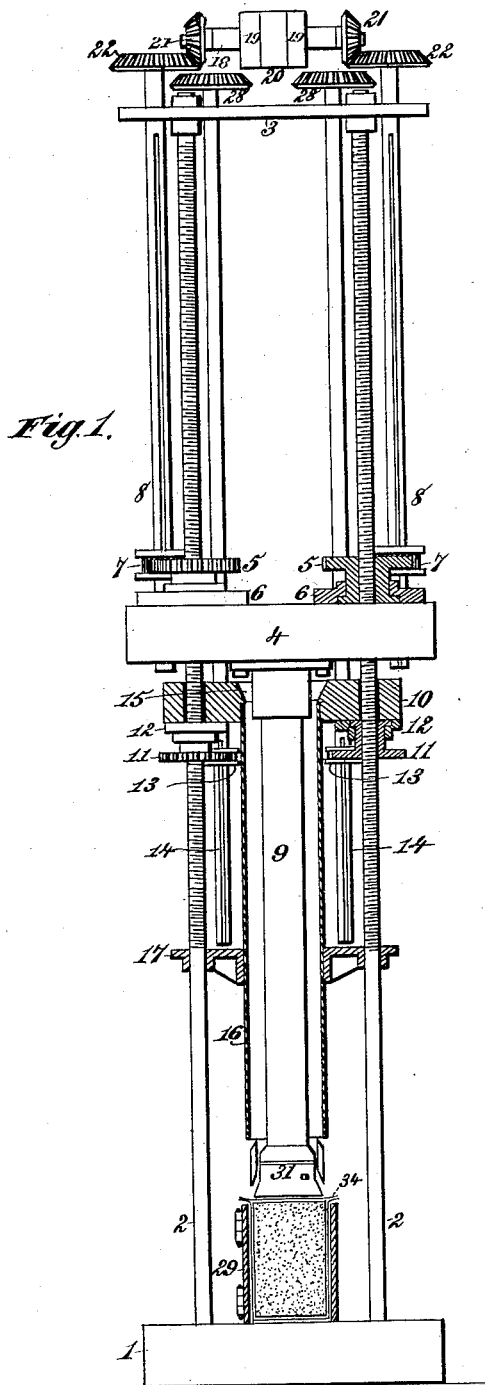


Fig. 1.

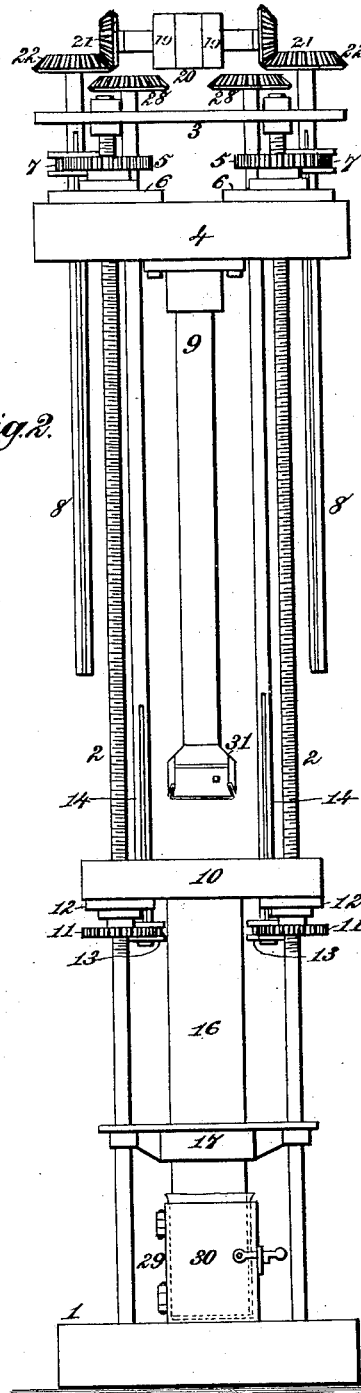


Fig. 2.

Witnesses.

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Fig. 3. Patented July 20, 1886.

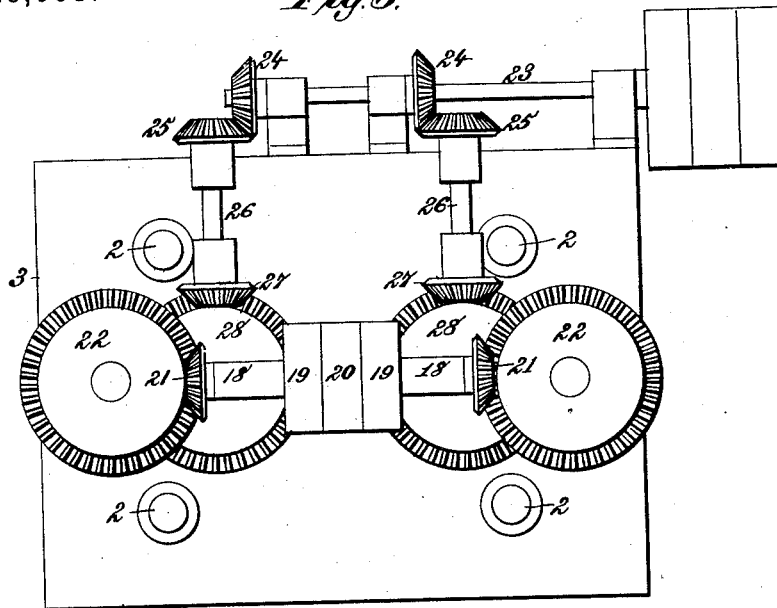
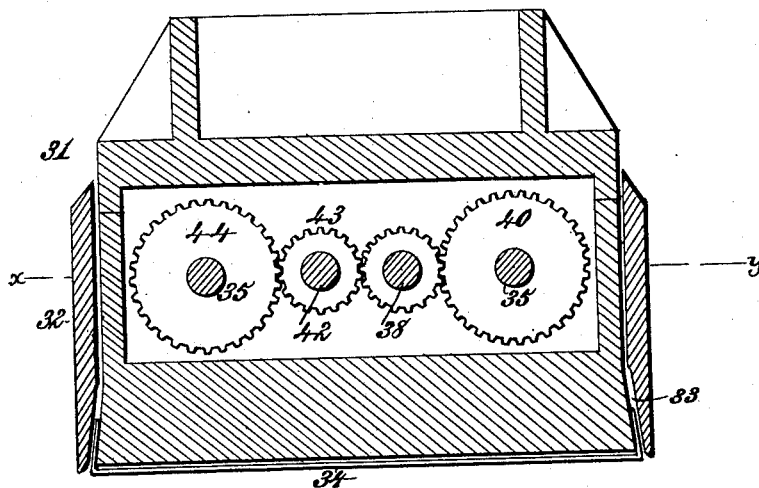


Fig. 4.



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Fig. 2 Patented July 20, 1886.

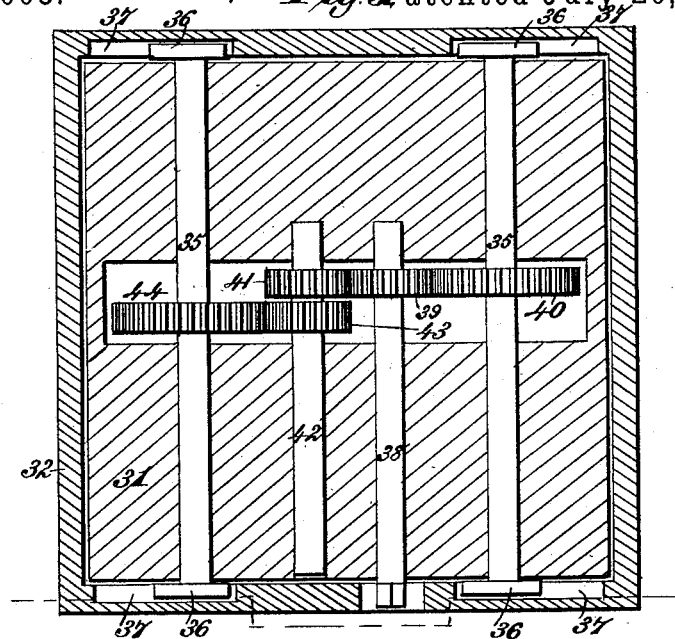


Fig. 6.

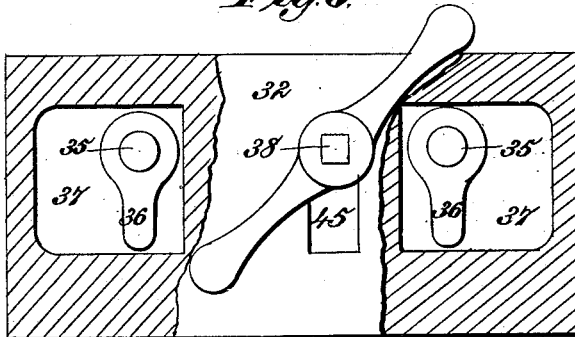
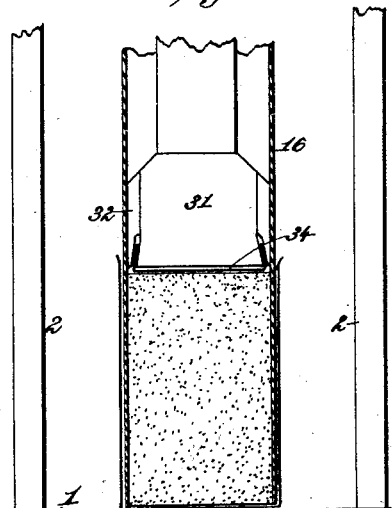


Fig. 7.



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UNITED STATES PATENT OFFICE.

FRIEDERICK W. WIESEBROCK, OF NEW YORK, N. Y.

APPARATUS FOR PACKING DRIED BREWERS' GRAIN, &c.

SPECIFICATION forming part of Letters Patent No. 346,003, dated July 20, 1886.

Application filed December 28, 1885. Serial No. 186,928. (No model.)

To all whom it may concern:

Be it known that I, FRIEDERICK W. WIESEBROCK, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Presses for Pressing Dried Brewers' Grain and other Material, of which the following is a specification.

Bran, and particularly dried brewers' grains, being of very short fiber and therefore not interlapping its particles sufficiently to cohere in a mass after compression, it is impossible to remove the solidly-pressed mass from the press-box and incase it in or surround it by suitable bagging, and an attempt to bale such substances in this manner will result in a collapse of the formed mass and scattering of the loose particles as soon as it is removed from the press-box. The elasticity of the material is, moreover, so great that when it is compressed and the support of the surrounding press-box removed, the shape of the formed body is at once destroyed and the mass falls asunder from this cause almost instantaneously. Pressing the substance in a box previously lined with the bagging material which is to surround it is impracticable, because such bagging becomes injured or destroyed during the process of compression.

It is the purpose of my invention to provide a way for avoiding these difficulties whereby the material may be compressed to the required density and incased within a suitable covering without losing the shape of the formed bale or permitting the disintegration of the mass.

By my invention I purpose, also, providing a suitable space in the bagging for the swelling of the material, and to provide means for baling the material named expeditiously and cheaply.

My invention consists in the several novel features of construction and combinations of parts hereinafter fully described, and definitely pointed out in the claims annexed to this specification.

Referring to the accompanying drawings, Figure 1 is a vertical section of the pressing mechanism, the parts being in the position they assume after the bale is formed and the bagging ready for stitching. Fig. 2 is a view

in elevation showing the position of the parts just previous to the operation of the press. Fig. 3 is a plan view of the press-top, showing the actuating mechanism. Fig. 4 is a vertical section of the ram-head with its parts. Fig. 5 is a horizontal section of the same on the line *x y*, Fig. 4. Fig. 6 is a vertical section of one side of the ram-head ring. Fig. 7 is a vertical section of the lower part of compression-box, showing the bag in position, the bale compressed, and the compressor-box ready to be raised out of the bag.

In carrying out my invention, I propose to use any known means for obtaining compressing force, such as hydraulic or knee-joint-lever presses. For convenience, however, I prefer to employ the mechanism illustrated in the accompanying drawings, in which the reference-numeral 1 designates the press-bed, in which are stepped four vertical shafts, each designated by the numeral 2. These shafts have bearing at their upper ends in a top frame, 3, and are threaded from a point just below said plate for about two-thirds of their length. Upon these shafts travels a platen, 4, having gears 5, mounted in cup-bearings 6, and provided with axial female threads engaging with the threads of the shafts. With the gears 5 are meshed pinions 7, carried by shafts 8, which depend from the top frame, 3. The shafts last named are slotted and the pinions 7 are splined thereto to permit them to travel up and down with the platen. Centrally attached to and depending from the latter is the ram 9.

Beneath the plate 4 is arranged a frame, 10, supported upon the shafts 2 by gears 11, having each a female thread engaging with the male thread of the shafts in a manner similar to that already described. These gears are mounted in cup-bearings 12 upon the frame 10, and are driven by pinions 13, splined to and carried by slotted shafts 14, which depend from the top frame, 3. Centrally mounted upon the frame 10, and depending from an opening, 15, therein, is a compressor-box, 16, open at both ends and guided and supported by a guide-frame, 17, movably mounted upon any suitable support.

Upon the top frame, 3, is mounted in any suitable manner a shaft, 18, having two tight

pulleys, 19, and a central loose pulley, 20, whereby the shaft may be driven by a straight and a cross-belt in opposite directions. Upon the extremities of said shaft are mounted
5 miter-gears 21, meshing with similar gears, 22, upon the shaft 8, whereby movement is given to the platen 4 and the ram carried by it.

The shafts 14 are separately driven by a shaft, 23, mounted on one side of the top frame and carrying miter-gears 24, meshing with similar gears, 25, upon short parallel shafts 26, carrying miter-gears 27, which in turn mesh with gears 28 upon the ends of the shafts 14. By the rotation of the latter the compressor-box 16
15 may be raised and lowered independently.

Upon the press-bed 1 is arranged a receiving-box, 29, placed directly beneath the compressor-box 16, and of such size as to freely permit the latter to enter it and still leave a
20 slight intermediate space sufficient to accommodate the bagging which is to be between the receiving-box and the compressor-box. The former is provided with a hinged door, 30, constructed and fastened in any suitable manner.

Upon the lower end of the ram 9 is carried the ram-head 31, upon which is placed a surrounding ring or frame, 32, closely fitting said head save at and within its lower edges, where a space, 33, is left sufficient to receive the
30 edges of the top piece, 34, of the bagging.

Within the ram-head 31 are mounted two parallel shafts, 35, and upon the extremities of these shafts are formed or mounted crank-fingers 36, which lie adjacent to the faces of the ram-head on opposite sides thereof. These
35 crank-fingers turn within recesses 37, formed in the inner opposite faces of the ring or frame 32. It will be seen that by turning the crank-fingers in opposite directions the ring may be raised upon the ram-head and lowered, being
40 locked in the latter position by turning the fingers 36 straight down, as shown in Fig. 6.

The fingers are operated by the following mechanism: Within the ram-head is mounted
45 a shaft, 38, carrying a pinion, 39, meshing with a gear, 40, upon one of the shafts 35, and with a similar pinion, 41, on a counter-shaft, 42, the latter carrying a duplicate pinion, 43, meshing with a gear, 44, on the other shaft,
50 35, whereby any rotation of the shaft 38 will cause the crank-fingers 36 to turn in opposite directions. The end of the shaft 38 is squared and projects through a slot, 45, in the ring 32, whereby a key may be applied to rotate the
55 shafts, as seen in Fig. 6.

The operation of the mechanism is as follows: The shafts 14 being set in motion the compressor-box 16 is lowered into the receiving-box 29, in which the bag has previously
60 been placed, the open end of the compressor-box being dropped until it rests upon the bottom of the receiving-box. In this position it is filled with the loose dried material through the opening 15 in the frame 10, and after a
65 proper quantity is supplied the shafts 8 are set in motion, actuating the platen 4, and fore-

ing the ram-head down within the compressor-box 16, until the entire bulk of material is brought to the requisite dimensions, when the downward movement of the ram is arrested. 7c
The shafts 14 are now set in motion in the opposite direction, drawing the compressor-box 16 out of the receiving-box 29, as shown in Fig. 1, wherein the compressed bale remains with the ram-head resting upon it. After the
75 compressor-box has risen high enough to afford access to the ram-head, the operator applies a key to the shaft 38, and raises the ring or frame, thereby releasing the edges of the top piece, 34, of the bagging, which is attached
80 to the ram-head before the press is operated. The edges of the bagging are now exposed in convenient position for stitching or fastening in any suitable manner, and when this is completed the bale is removed from the receiving-
85 box in the usual way.

In order to prevent the bursting by the expansion of very elastic material, after pressing, the lap of the projecting edges of the bagging, both of the top and the sides, may be
90 lengthened sufficiently to allow some expansion of the bale in the direction of the axis of compression, so that the strain can be safely borne by the bagging material.

It is evident that instead of raising the compressor-box out of the receiving-box and bagging, I may provide the receiving-box with a movable bottom, and raise the same upward within the compressor-box, press the bale, and then drop the latter while held between the
100 ram-head and movable bottom, back into the receiving-box, where the bagging will be fastened, as already set forth.

It will be seen that by attaching the bag-top to the ram-head, not only are the parts most
105 conveniently brought into proper relative position for stitching or fastening, but the bag-top is fully protected and retained in its proper place during the action of the press.

In Fig. 7 the press is shown with the bag
110 surrounding the compressor-box and top bag in position with bale compressed to the requisite size. There is in this case no receiving-box, which is wholly dispensed with. The material should be compressed to such a density that the same would cohere sufficiently to withdraw the compression-box from the forward bale and out of the bag, in which case the bag would cover the bale as fast as the
115 compressor-box is removed.

Having thus described my invention, what I claim is—

1. The combination of a compressor-box and shafts and gearing for advancing the box into bagging, with a ram for carrying a bag-head, and gearing for imparting movement to the
125 ram independent of the box, substantially as described.

2. In a baling-press, the combination, with a receiving-box containing the bag, of a compressor-box open at both ends and surrounded
130 by said bag, a ram carrying the bag-top, and

means for giving movement independently to said compressor-box and ram, substantially as described.

3. In a baling-press, the combination, with a receiving-box containing the bag, of a compressor-box open at both ends and surrounded by the bag, a ram having a ram-head carrying the bag-top, a ring or frame movable upon the ram-head and confining the edges of the bag-top, and means for giving independent movement to the ram and the compressor-box, substantially as described.

4. In a baling-press, the combination, with the ram-head, of a surrounding ring or frame, crank-fingers carried by shafts mounted in the ram-head and engaging with recesses in said ring or frame, and means for rotating said shafts, substantially as described.

5. In a baling-press, the combination, with a rigid receiving-box having a removable side or wall, of a compressor-box open at both ends and adapted to enter the receiving-box, a ram moving in the compressor-box, a frame or ring surrounding the ram-head and having a recess or space at and within its lower edges to receive the edges of the bag-top, and devices intermediate the ram-head and frame for raising, lowering, and locking the same in position thereon, substantially as described.

6. In a baling-press, the combination, with a rigid receiving-box, of a compressor-box open at both ends and movable within the compressor-box, a ram-head carrying a surrounding frame or ring movable thereon, a platen movable on threaded shafts and carrying the ram, a frame having a central opening within which the compressor-box is attached, internally-threaded gears moving on the threaded shafts and carrying said frame, and mechanism for operating said gears and moving the compressor-box independently of the platen and ram, substantially as described.

7. The combination, with the ram, of a surrounding frame or ring having a space at and within its edges, crank-fingers lying in recesses formed in said frame, shafts mounted in the ram-head and carrying said fingers, a shaft intermediate of said shafts and having a head projecting through a slot in the frame, and gearing whereby movement is communicated to the shafts carrying the crank-fingers in opposite directions, substantially as described.

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

FRIEDERICK W. WIESEBROCK.

Witnesses:

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R. W. MAVES.