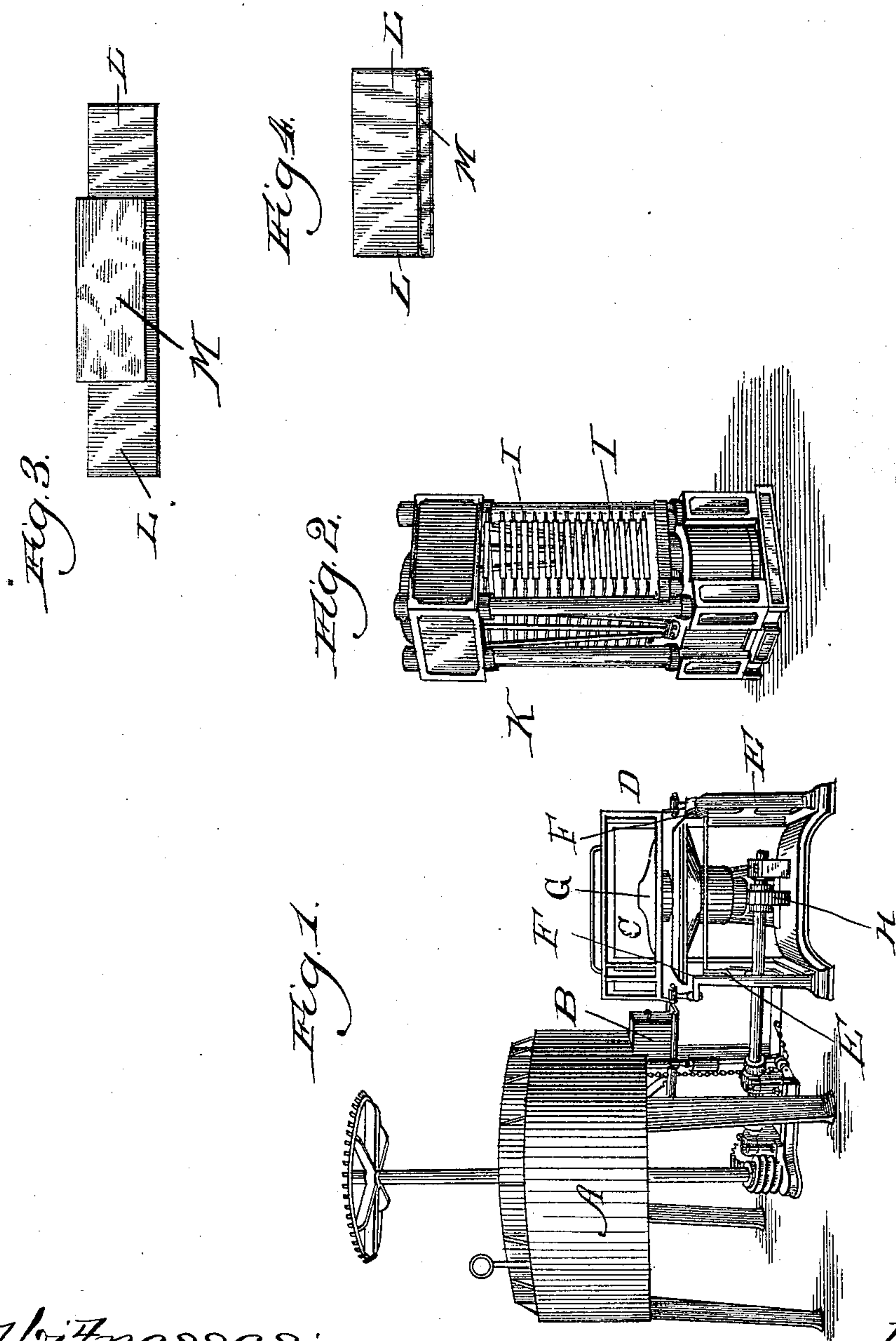


(No Model.)

W. V. KAY.
MANUFACTURE OF OIL CAKE.

No. 338,530.

Patented Mar. 23, 1886.



Witnesses:
Chas. E. Gayford.
Mason Bros.

Inventor:
William V. Kay,
By Dyrenforth & Dyrenforth,
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM V. KAY, OF BELTON, TEXAS.

MANUFACTURE OF OIL-CAKE.

SPECIFICATION forming part of Letters Patent No. 338,530, dated March 23, 1886.

Application filed January 2, 1886. Serial No. 187,504. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM V. KAY, a citizen of the United States, residing at Belton, in the county of Bell and State of Texas, have
5 invented a certain new and useful Improvement in the Manufacture of Oil-Cake; and I hereby declare the following to be a full, clear, and exact description of the same.

My improvement involves but a very slight
10 change in the process ordinarily practiced in the manufacture of oil-cake by compressing it to remove the oil and form the residue into a compact shapely mass; and it consists in providing a paper envelope in which to press the
15 seed, instead of the cloth envelope or bag commonly provided for the purpose, whereby I obtain greatly-improved results in the manufacture, and a new article of manufacture possessing improved qualities, all as hereinafter
20 more fully set forth.

To render my improvement readily apparent, a successful process of making oil-cake, and which, I believe, is quite extensively practiced, is hereinafter set forth, though only so
25 much of the machinery employed therein, which is all old, is shown in connection with this application as is deemed desirable to permit proper illustration of my improvement in the manner of operation, which, as hereinbefore
30 stated, relates to a single step in the process.

In the drawings, Figure 1 represents in perspective an old device used in the manufacture of oil-cake from cotton-seed, linseed, and the like, and comprising a jacketed kettle having
35 connected with it a measuring-box, a hinged mold, side frames, a carrier-frame to support a light steel tray, a die, and a cam device for operating the tray. Fig. 2 is a perspective view of the device in which the pressing of
40 the meal is done to express the oil, for which purpose the trays carrying the meal are placed between the plates and the trays withdrawn, and the device is operated by, preferably, hydraulic pressure. Fig. 3 is a plan view of my
45 improved product in the shape it assumes in the process, and Fig. 4 is a similar view of my finished product as a new article of manufacture.

Following is a general description of a process extensively practiced in expressing the

oil from seed and making oil-cake—say, linseed—the first step being to crush and grind the seed after it has been screened from dust or lumps, the crushing being accomplished by passing the seed between rolls, which burst
5 the outer skins and flatten the mass of oil-cells within, and the grinding being an incident of the crushing operation. The crushed seed is carried from beneath the rolls by suitable elevators, which take it to the creeper-troughs
60 placed on the main girders of the mill, from which it passes into a steam-jacketed kettle, A, Fig. 1, where it is heated to about 160° Fahrenheit and agitated by revolving arms, (not shown,) and at the same time exposed to the
65 action of a jet of steam carried by a pipe, (also not shown,) and which affords the amount of moisture required in pressing the cake. From the bottom of the kettle the meal is withdrawn into a bottomless measuring-box, B, which
70 holds some eighteen pounds, and which is drawn by the workman over the mold below, C, of the molding-machine D. The machine comprises two portions—viz., the molding and the compressing device—which are quite independent of each other. The machine has two
75 side frames, E, upon which slides a skeleton carrier-frame, F. On this a light steel tray the size of a cake is laid, and on the tray is placed a slightly wider strip of cloth, usually
80 sail-duck, which is about twice the length of a cake. The mold C, which is hinged to the side frames, is then closed upon the tray and the bottomless measuring-box B drawn along it, depositing its contents along the cloth and
85 the tray in the shape desired. The mold C is then thrown up on its hinges, the ends of the cloth doubled over the seed and the carriers F pushed, with their load, under the die G. The carrier in moving throws into gear a cam, H,
90 beneath the supporting-table of the device, the cam operating to raise the tray and its load off the carriers F, permitting the latter to be drawn back to permit the procedure of molding another cake. The molded and somewhat compressed cake on the tray is then withdrawn and the tray of meal placed between two of the plates I of the press K, Fig. 2, (the usual hair mats being provided,) in which the
95 oil, after withdrawing the tray, is expressed, 100

and from which it is taken by suitable pumps to tanks for storage. The succeeding steps consist in stripping off the cloth covering and cutting off the loose edges of the cake. Very
5 frequently a tapered woolen bag is used to contain the seed for a cake, and is flattened by the hand of the workman and placed between hairs or mats into the press.

The disadvantages connected with the proceeding as above set forth are the great pressure exerted, besides tearing and splitting the cloth envelope employed, and this, with infrequently repeated use of the same, whereby considerable expense is entailed, packs the
10 fiber, thus forming a solid texture which prevents percolation through it of the oil, whereby the only avenue for the escape of the latter is through the edges of the cake, whereby considerable of the oil remains therein, and in
15 case the meal is wet the pressure leaves a mushy mass which contains so much oil that it requires to be repressed to extract the same.

My improvement occurs at the point in the proceeding above outlined at which the cloth
25 envelope is placed upon the tray to contain the mass while being pressed to extract the oil and form the cake, and comprises the use of a strip of preferably vegetable paper, L, of the desired dimensions, as hereinbefore stated
30 of the cloth. This use of paper affords, as I have discovered, the following very great advantages: The paper being porous permits the passage through it of the oil by pressure of the mass of prepared seed at both sides of the
35 cake M, thus permitting the use of more meal for each cake, making it heavier, and thereby accomplishing more work than when cloth is used, and in the same time. The paper envelope does not require to be stripped from

the cake, thus saving labor, and particularly
40 breakage of the article, which forms a very common occurrence in the operation, whereby a larger quantity of the cake is provided in marketable condition, and the paper covering
45 constitutes an adhering, and therefore permanent, envelope, even if the pressure exerted should, as it sometimes may, split and tear it, but not sufficiently to destroy its function as an envelope, and affords a medium for advertising the manufacturer by printing upon it
50 advertising matter, whereby he may secure a reputation for his product, with all the incidental advantages to the public. There is no necessity even of removing the paper envelope to permit the consumption of the cake,
55 for, particularly when formed of a vegetable substance, it may be ground with the cake and fed to cattle without injury to the latter.

A careful analysis of cake made with a cloth envelope and cake compressed in a paper
60 envelope shows the percentage of oil left in the former to be considerably less than in the latter.

What I claim as new, and desire to secure
65 by Letters Patent, is—

1. The improvement in the manufacture of oil-cake in the process of extracting the oil in forming the same, which consists in providing the seed with a paper envelope in which it is compressed, substantially as and for the purpose set forth.
70

2. As a new article of manufacture, an oil-cake provided with an adhering paper envelope, substantially as described.

WM. V. KAY.

In presence of—

H. C. CASSIDY,
A. J. EMBRUL.