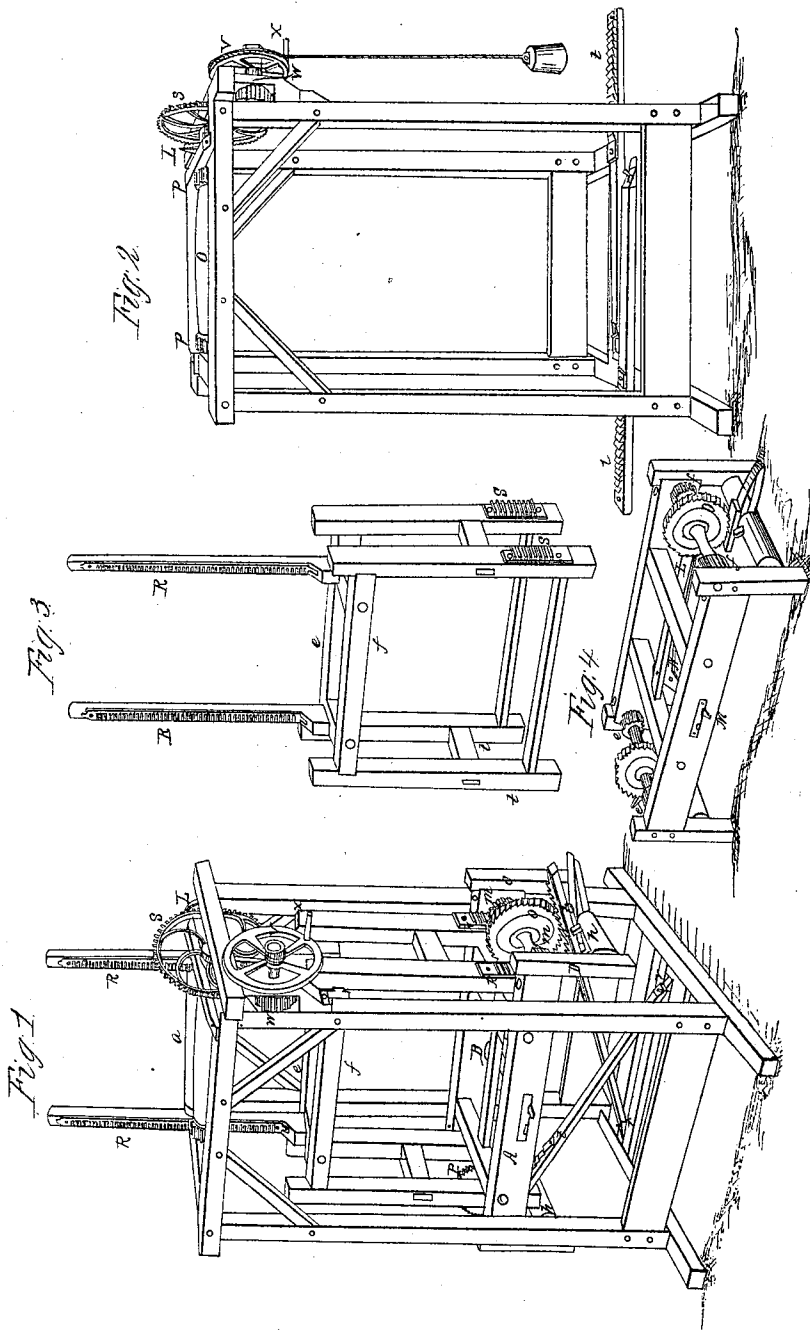


C. B. & J. Kingsbury,
Cheese Press.

N^o 5397.

Patented Dec 18, 1847.



UNITED STATES PATENT OFFICE.

C. B. KINGSBURY AND J. KINGSBURY, OF UTICA, NEW YORK.

SELF-ACTING CHEESE-PRESS.

Specification of Letters Patent No. 5,397, dated December 18, 1847.

To all whom it may concern:

Be it known that we, CHARLES B. KINGSBURY and JOHN KINGSBURY, of the city of Utica and county of Oneida and State of New York, have invented a new and Improved Cheese-Press; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view of the entire machine. Fig. 2 is the frame or stationary part shown separately, with such parts of the gearing as are attached to the same and are hereafter particularly described. Figs. 3 and 4 represent movable parts of the press and when in use are locked together by the pinions *e, e*, and *f, f*, Fig. 4, and the racks *S, S*, and *t, t*, (Fig. 3). These parts are movable in a vertical direction within the frame Fig. 2, being raised at pleasure by the working of the pinions *P, P*, Fig. 2, in the racks *R, R*, (Fig. 3). All these three parts (Figs. 2, 3 and 4,) put together as when in use are seen in the perspective view of the entire machine exhibited in Fig. 1. Fig. 4 is the base or platform on which the cheese rests while being pressed. This is seen in the entire machine at *A, B, C, D*, (Fig. 1). The horizontal bars *e, f*, (Fig. 3) are the part of the machinery which presses immediately upon the top of the cheese. These are seen at *e, f*, (Fig. 1).

It is between the bars *e, f*, and the platform *A, B*, (Fig. 1) that the cheese is pressed. These are both movable and are raised by the hand through the handle *X*, on the wheel *V*. They rise and fall together, but the frame represented in Fig. 3, and seen in Fig. 1, at *e, f, R, R*, moves the fastest, in both directions, and this occasions an alternate expansion and contraction of the space between *A, B*, and *e, f*. This difference in movement is caused by the gearing at each end of the frame *A, B*, seen at *O* and *P*, this gearing being connected with the oblique levers *t, t*. The feet of these levers bracing against iron steps fixed in the base of the machine as seen at *r* and *r* are elevated at the end *t* as seen in the figure, lying under the wheels, one of which is plainly seen at *o*, and the other faintly at *P*. The arrangement of this gearing is the same at each end of the frame. The lever *t* is pressed gently

to the periphery of the wheel *O* by a spring, seen at *t*, fixed in the cross bar *h*, of the stirrup *C, h, D*. The periphery of the wheel *O* is cut into ratchet teeth, and a rack lying on the upper side of the lever beneath it has teeth to correspond. These are plainly seen in the drawing, and that they match together. As the upper ends of these levers lie on the cross bars of the stirrups, (as that at *h*, seen in the stirrup *C, h, D*,) they rise and fall with it, and as the lower ends of these levers are stationary, the upper ends, as they rise and fall, describe an arc of a circle. Therefore as the motion of the wheels *O*, and *P* is vertical, the end of the lever *t* is extended farther and farther beyond the wheel *O* as it descends until it acquires a horizontal position, and the same is the case at the wheel *P* at the other end of the frame. This extension of the lever *t*, turns the wheel *O*. On the same shaft which holds the wheel *O*, and on each side of the wheel, are the small pinions *m* and *m*, which match with the racks seen at *k* and *k* fixed to the upright timbers of the frame *e f*. The extension of the lever *t* in its descent, turning the wheel *O*, brings down the frame *e, f*, in proportion as the wheel is turned; and as the frames *A, B*, and *e f* descend alike independent of this effect of the wheel *O*, the contraction of the space between *A B* and *e f* in descending will be exactly equal to that effect. The intensity of that pressure will be proportioned to the weight of the cheese, superadded to that of both the frames *A B* and *e f*. This weight operating moreover through the advantage of a leverage due to the proportion of the wheel *O* over the pinions *m* and *m*; and the intensity of pressure will be increased as the frames descend, and the oblique levers *t* and *t* approach a horizontal position.

The several parts of the press are more plainly seen, and their connection and operation better understood by an inspection of the Figs. 2, 3 and 4. The wheels *O* and *P* (Fig. 1,) are plainer seen with the small pinions *e e* and *f f* on the same shaft in Fig. 4, and the racks *k* and *k*, (Fig. 1) are better seen at *S* and *S*, (Fig. 3). The oblique levers *t* and *t* (Fig. 1) are also seen fallen down to a horizontal position at *t t* (Fig. 2). The wheels *S* and *V*, the pinion *W*, and the handle *X* (Fig. 1), are all better seen at *S, W, V* and *X* (Fig. 2).

The press is worked by the handle *X*

(Fig. 2) affixed to the rim of the wheel V. On the shaft of this wheel is the small pinion W, about $2\frac{1}{2}$ inches in diameter. This pinion matches with and turns the wheel S, which is about twelve inches in diameter. This latter wheel is affixed to the wooden shaft O (Fig. 2), on which are the two pinions P P (Fig. 2). These work in the racks R, R of the movable frame (Fig. 3,) and raise it whenever the cheese is to be loosened. The dog L catching in the teeth of the wheel S, holds it until it is desired that the press shall operate. All this arrangement is also seen on the entire machine in Fig. 1. In the rear of the upright shafts R and R (Fig. 1,) is a wooden roller α , which turns as these shafts rise and fall, keeping the racks pressed to the pinions, by which they are operated. The press is constructed of wood except the wheels and other parts shown in iron color in the drawings, and these are of cast iron.

It is not limited to any particular dimensions but the ordinary size of the machine is about five feet in height, and the outside frame (Fig. 2) is about thirty two inches in the width, by nineteen inches in depth from front to rear. The wheels O and P, (Fig. 1) are about nine inches in diameter; and the pinions m and m on the same shaft $2\frac{3}{4}$ inches. The levers t and t are each about $3\frac{1}{2}$ feet long. The springs under these levers as at t are of steel, and bent in the form of a loop; but a spiral wire spring would answer equally well. This press may be used, not only for pressing cheese, but also for pressing clothes, and other elastic articles. The teeth of the wheel O, for the purposes of a cheese press, as well as those on the rack beneath it, might be the ordinary straight teeth of a spur wheel; but for the purpose of pressing more elastic substances, the ratchet teeth are preferable; with these

when the pressure is exhausted by the oblique levers falling to a horizontal position, a dog, or latch M, N, L, Fig. 4, being so fixed to the frame as to catch in the teeth of the wheel O and prevent its turning.

The two movable frames A B and $e f$ (Fig. 1) separately represented in Figs. 3 and 4, may be raised in the ordinary way by means of the handle X (Fig. 1) without relieving the pressure already acquired, by any expansion of the space between A B and $e f$ (Fig. 1); as in that case the wheel O being locked, the oblique ratchet teeth shown in the figure on its periphery, will allow the like teeth on the rack of the lever below to slide over them, and take new hold of the wheel O; so that when the desired elevation is obtained, the press is again suffered to fall and renewed pressure is made, when all the while the extent of pressure first attained has not been relieved. If greater intensity of pressure is desired, it may easily be attained by hanging a weight at the end of a cord wound around the wheel V, the rim of which is grooved for that purpose as seen in the drawing (Fig. 2) or weights may be laid on the frame A B (Fig. 1) by the side of the cheese or other article to be pressed. In ordinary use this weight will not be necessary.

What we claim as our invention, and desire to secure by Letters Patent is—

1. The making the press self-acting by means of the racks and pinions of different sizes operating upon the separate frames.
2. Secondly, we claim the oblique rack and levers in combination with the lower frame and wheel O.

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Witnesses:

WILLIAM BAKER,
NANCY JACOT,