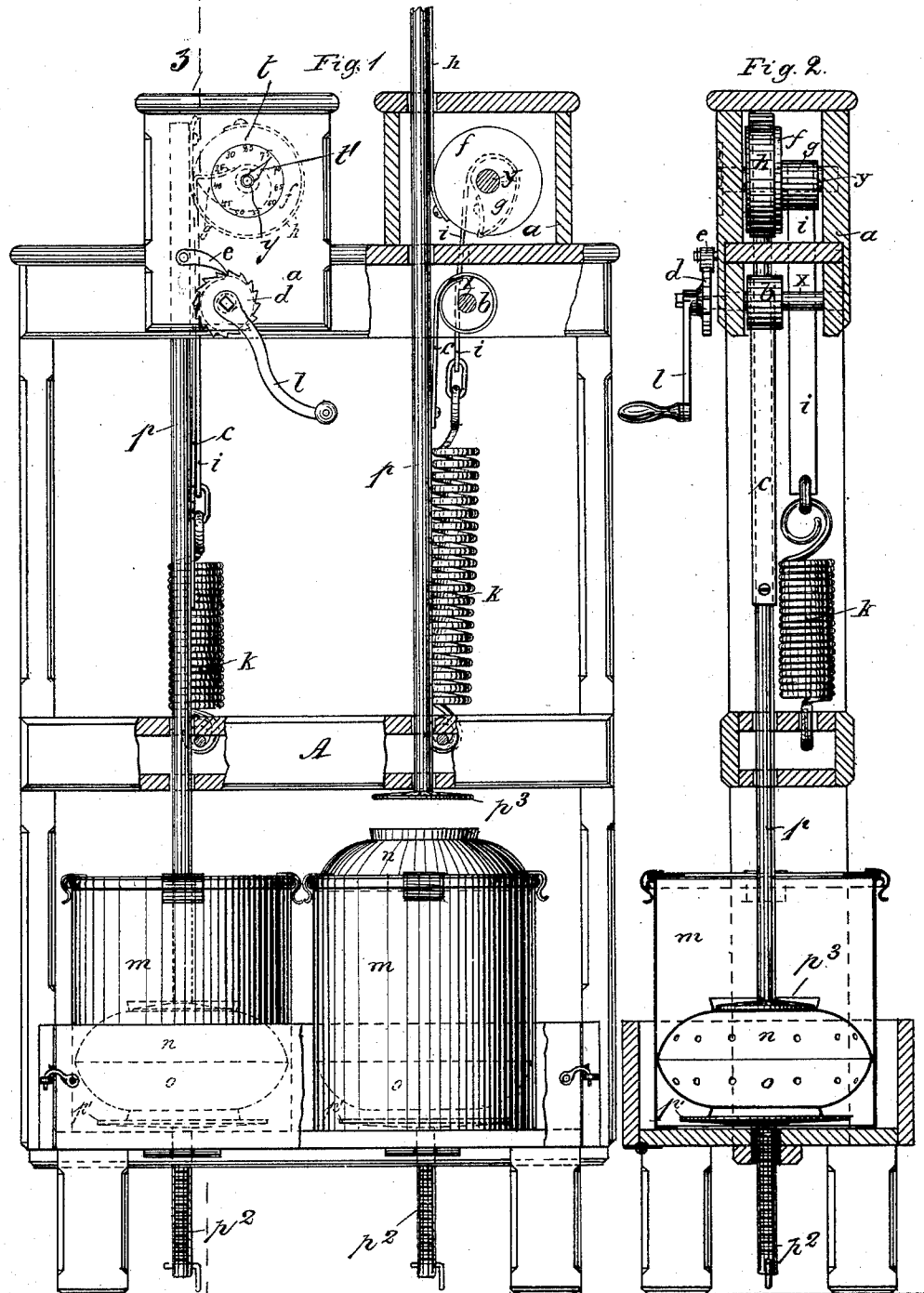


(No Model.)

H. KEMPENS.
PRESS FOR PRESSING CHEESE, &c.

No. 489,151.

Patented Jan. 3, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

HEINRICH KEMPKENS, OF GREFRATH, NEAR CREFELD, GERMANY.

PRESS FOR PRESSING CHEESE, &c.

SPECIFICATION forming part of Letters Patent No. 489,151, dated January 3, 1893.

Application filed March 10, 1892. Serial No. 424,472. (No model.)

To all whom it may concern:

Be it known that I, HEINRICH KEMPKENS, a subject of the Emperor of Germany, residing at 82 Rosen strasse, Grefrath, near Crefeld, in Germany, have invented a certain new and useful Improvement in Presses, of which the following is a specification.

This invention relates principally to presses used for pressing cheese but it is applicable to presses for other matters. One of the suitably shaped forms or plates between which the cheese or matter is to be pressed is vertically adjustable on a screw threaded spindle and the other of these forms or plates is attached to a longitudinally movable spindle by which the pressing is performed by spring pressure. The spindle is lifted by a strap wound upon a drum by the rotation of the shaft of the drum by hand or otherwise. This action unwinds a second strap attached at one end to the spindle, from a second drum, and consequently revolves this second drum with its shaft. The latter shaft carries a cam or irregularly shaped disk or drum, on the periphery of which a third strap is fastened the other end of this strap being connected to a spiral spring of suitable power. By the revolution of the cam, due to the lifting of the spindle, the spring is brought into tension and reacts to press down the spindle when a ratchet wheel on one of the shafts is released from a pawl so as to allow the parts to return to their first position. The shape of the cam causes the spring to act more forcibly, that is to say, to press the forms or plates more forcibly together as they approach the one to the other. An indication of the power of the press may be had by arranging on the shaft of the cam an indicating finger and on the casing a suitable scale previously marked according to the pressure to which the various positions of the indicator correspond. It is obvious that ropes, cords, or chains may be used instead of straps.

The accompanying drawings illustrate a pair of such cheese presses on one frame. Figure 1 being a front elevation partly in section and Fig. 2 a vertical section on line $z z$ Fig. 1.

The lower form o rests in the plate p' at the head of the screw-threaded spindle p^2 . The upper form n is subjected to the downward pressure of the rod p which terminates below in a plate p^3 . A cylindrical case m surrounds

the forms o, n . The strap c fastened at its lower end to the rod p is wound upon the drum b on the shaft x of which is the crank handle l for winding up the strap by hand and the ratchet wheel d which in conjunction with the pawl e prevents the strap from unwinding. The strap h which is fastened at its upper end to the rod p is wound upon the drum f on the shaft y which carries also the irregularly shaped disk g . On this disk g is wound the strap i the other end of which is connected to the one end of the spring k , the other end of this spring being suitably secured to the frame-work A of the press. The direction of winding of the several straps c, h, i is such that the raising of the rod p brings the spring k into tension.

The invention more particularly relates to the disk g . This disk is of such a shape that the radial distance of the strap i at the point where it leaves tangentially the contour of the disk increases as the rod p is the more depressed, this radial distance is therefore least when the rod p is in its highest position as on the right of Fig. 1 and greatest when the same is in its lowest position as on the left of Fig. 1. This may be effected by making the periphery of the disk g for the greater part of its length in a curve, such as a volute.

It is intended that the increase in leverage obtained by the increasing radial distance aforesaid shall more than compensate for the diminution in pressure of the spring k as it approaches its normal position, so that the effective pressure between the disks n, o may increase as they approach the one to the other.

The indicator t' on the shaft y shows the position of the shaft y and in connection with the dial t suitably numbered indicates the pressure proportional for that position. The pressures may be found by experiment.

I claim

1. In a press the combination of a pressure rod p a drum f connected to said rod, and adapted to move the same when rotated, an irregular shaped disk g on the shaft of said drum f a spring k and a strap i wound upon the periphery of the disk g and attached to said spring whereby the spring operates said rod p with a pressure increasing in proportion to the radius of the disk g for the purpose set forth.

2. In a press, the combination of the rod *p* | *h* connected thereto, drums *b* and *f* on which
the drum *f*, the strap *h* connected to said rod | said straps are respectively wound, irregular
and wound upon drum *f* a drum *b*, a second | disk *g*, strap *i* and spring *k*, an indicator *t'* on 15
strap *c* wound on said drum *b* and connected | the shaft of disk *g* and dial *t*, the whole sub-
5 to said rod, a crank handle *l* and ratchet wheel | stantially as and for the purpose set forth.
d on the shaft of said drum *b*, an irregular |
disk *g* on the shaft of drum *f* a spring *k* and |
a strap *i* connected thereto and wound on said |
disk *g* substantially as and for the purpose |
10 set forth.
3. The combination in a press of an adjust- |
able platen *p'* a pressure rod *p*, straps *c* and |

In witness whereof I have signed this speci-
fication in presence of two witnesses.

HEINRICH KEMPKENS.

Witnesses:

YORKUB SCHETTER,
GOTTFRIED POSCH.