A. H. Emery,

Cheese Press.

No. 24,449. Patented June 21, 1859.

Fig. 3.

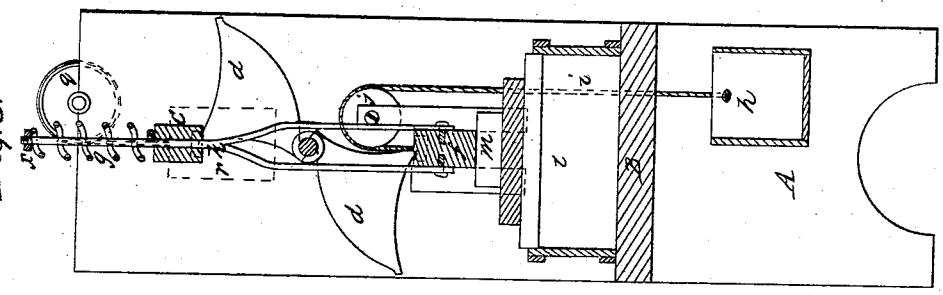


Fig. 2.

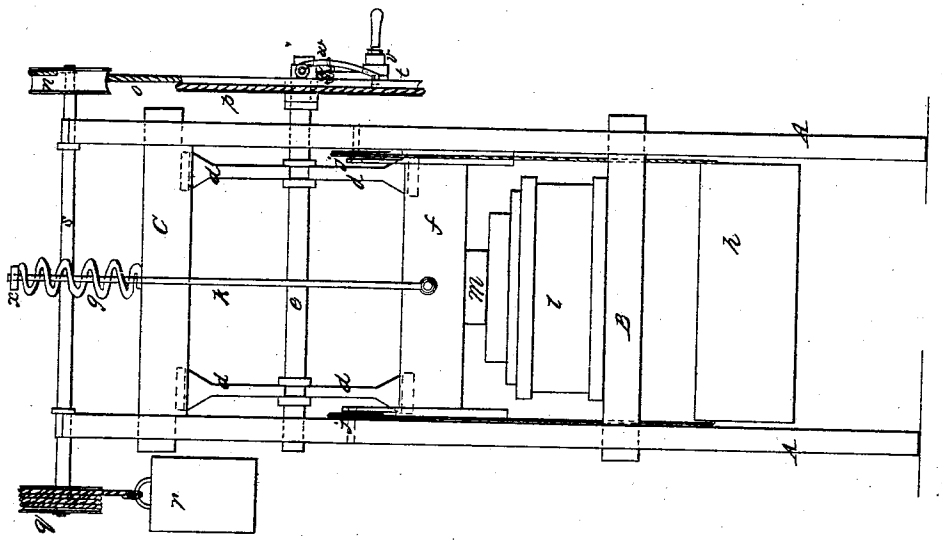
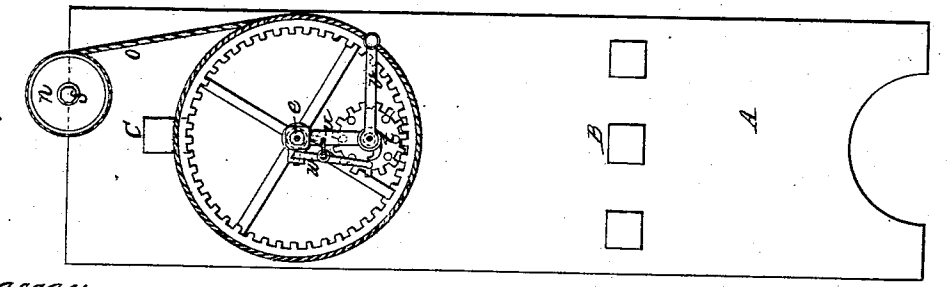


Fig. 1.



Witnesses:
Marcus P. Norton
Harvey E. Davis

Inventor:
A. H. Emery

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

A. H. EMERY, OF MEXICO, NEW YORK.

CHEESE-PRESS.

Specification of Letters Patent No. 24,449, dated June 21, 1859.

To all whom it may concern:

Be it known that I, A. H. EMERY, civil engineer, of Mexico, county of Oswego, and State of New York, have invented a new and Improved Eccentric Cheese-Press; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereupon and making a part of this specification.

Like figures represent like parts.

The nature of my invention consists in constructing a press, for the purpose of pressing cheese made from the milk of cows, and for pressing cotton, tobacco, hay, or for any other purpose where it can or may be advantageously used, in a cheap, strong, and effectual manner by means of an arrangement of cams or eccentrics in combination with a system of wheels and axles hereinafter described, so that by the use of a weight or any other power applied thereto, a continued and downward pressure is had and obtained by means thereof.

I construct my press from wood or iron cast or otherwise as the case may require, or from both wood and iron as the case may be. I usually make the frame of wood of sufficient width and thickness to assure the the required strength and purpose. The bed piece (B,) on which rests the material, to be pressed or compressed, is connected at right angles with the perpendicular parts of the frame (A, A), by means of tenons or bolts, and is then strengthened by bracing underneath if found necessary. At or near the upper part of this frame there is a cross beam (C) which is also connected at right angles to the perpendicular parts of the frame (A, A), by means of tenons or bolts as in the cross beam (B).

The cams or eccentrics are seen at (*d*, *d*, &c.) Figures 2 and 3. Fig. 3 is a vertical division of the machine through the center of the shaft (*e*) between the cams or eccentrics and each side thereof.

(*f*) is a movable bar, which is carried downward upon the matter to be pressed by means of the cams or eccentrics operating directly upon it. It is guided in its downward motion by guides on the frame each side thereof. When the cams or eccentrics are brought back to their lesser diameters, by the means hereafter described, this movable bar is carried upward from the material pressed. Then the entire press is rightly arranged for use in receiving the matter to be pressed. This operation is had and performed by the means of the coiled springs (*g*) and weight (*h*). At each end of this weight is attached a cord (*i*,) which passes over a pulley (*j*) upon each side of the frame (A), thence downward and attached at the respective end of the movable bar (*f*). This adjustment can or may be accomplished by means of the coiled spring (*g*) around the rod (*k*) which rod extends downward and through the cross beam (C), and is attached to the movable bar (*f*) by means of bolts.

(*l*) represents the hoop in which the cheese is pressed.

(*m*) is a block of wood between the cheese (*b*) and the movable bar (*f*).

(*n*) Figs. 1, and 2 is a pulley around which passes the cord (*o*) which also passes around the wheel (*p*) same figures.

(*q*) Figs. 2 and 3, is a pulley around which passes a cord attached to the weight (*r*). This pulley is made fast at one end of the shaft (*s*), while at the other end of the said shaft is fastened the aforesaid pulley (*n*). This shaft has points of bearing upon the parts (A, A) of the frame aforesaid.

The wheel (*p*) has teeth or cogs inside and below the periphery thereof. These cogs are made to extend from the outside surface to the center of the thickness of the aforesaid wheel (*p*) while the remaining thickness of said wheel is reserved for the purpose of receiving the arms extending from the shaft (*e*) to the periphery thereof. Upon the inside, and in the aforesaid cogs of the said wheel is a small cog wheel (*t*) which has a point of bearing in the end of the arm (*u*) which has the opposite end thereof securely fastened to the shaft (*e*). Upon the end of the shaft passing through this small cog wheel is securely fastened the crank (*v*), which is for the purpose of operating the entire machine. In this small cog wheel are several holes for the purpose of securing the said wheel in its proper place by means of a pin at the end of the arm (*w*) which is securely fastened, while allowed to swing out, at the end of the arm (*u*) fastened upon and to the shaft (*e*).

When the matter to be pressed is properly placed upon the bed piece (B), then by moving the crank from the operator the small cog wheel (*t*) will pass around in the cogs of the wheel (*p*) until the movable

bar (*f*) is brought down upon the block (*m*), when it will then remain in a fixed position whereupon the weight (*r*) will rise until it reaches the pulley (*q*), which when done is then fixed for action in the downward pressure, by means of the arm (*w*) combined with the small cog wheel (*t*) as aforesaid. This weight then operates the machine in its downward pressure by means of the system of cog wheels, pulleys, and cams, which cams are constructed in form and shape as seen at Fig. 3, and are made of cast iron. The shaft (*e*) operates between the said cams or eccentrics as seen at Fig. 3, by means of the friction between the same, which moves the said cams or eccentrics from a lesser to a greater diameter, consequently moving downward with great and heavy pressure the movable bar (*f*) upon the material desired to be pressed. These cams or eccentrics have each and every of them a point of bearing. The upper ones upon the under side of the fixed bar or beam (*c*). The lower ones upon the top of the movable bar (*f*). These points of bearing are made of cast iron and shown by dotted lines at Fig. 2. The point of each cam or eccentric form a "pivot turning point" for the same. By the use of the coiled spring, or the use of the weight aforesaid a greater or lesser friction may be had between the said eccentrics and said shaft. If by the use of said spring, the friction may be governed by means of the nut and screw (*x*) Fig. 2. If by the aforesaid weight, the friction may be regulated by the addition or the removal of a part of the same. These arrangements govern the friction, and also adjust the machine ready for use as aforesaid. If either or both of the same should not give friction enough to operate the machine well, then the operation may be had and performed as relates to the said cams or eccentrics, and the said shaft, by means of cogs upon the circular portion of each thereof. By either it will be seen, that the full power of the cams or eccentrics will be had. In the former, the greater the downward pressure upon the material to be pressed, the greater the friction between the cams or eccentrics and the shaft as aforesaid. In the latter, the cogs operate of course so therefore in either case the required amount of pressure is had upon the matter to be pressed and any tendency of a sliding or slipping between the aforesaid cams and shaft, is avoided, and the whole machinery move in harmony together. The shaft (*e*) moves downward in a slot mortise at each bearing thereof, and in the end part of the frame (A). These slot mortises are the same width of the diameter of each bearing of the shaft (*e*) which move up and down therein as the case may require. This press may be constructed of sufficient size, strength and material so as to press hay, cotton, tobacco, cider, paper or any substance desired to be pressed or compressed.

Fig. 1, is an end view showing the cog wheels (*p* and *t*), pulley (*n*), rope (*o*), crank (*v*), arms (*w* and *w*) hereinbefore described. Fig. 2, is a side view showing each and every member or part of the whole machine. Fig. 3, shows the opposite end shown at Fig. 1, also, a vertical section at right angles with Fig. 2.

I do not claim that operating mechanical combinations or arrangements by the weight (*r*) for the purpose of moving the follower (*f*) downward as new or of my invention. Neither do I claim the use of eccentrics for pressing as new or of my invention; but

What I do claim and desire to secure by Letters Patent is—

1. The method of moving the follower (*f*) upward by means of the weight (*h*) the cords (*i i*) and the pulleys (*j j*) the whole arranged and operated as and for the purposes herein described and set forth.

2. I also claim the arrangement of the arm (*u*), the ratchet (*w*), the pinion (*t*), the crank arm (*v*) together with the wheel (*p*) with the cogs either on the inside or outside, the whole being arranged and operated as and for the purposes herein described and set forth.

In testimony whereof I have on this 11th day of April 1859, hereunto set my hand.

A. H. EMERY.

Witnesses:

MARCUS P. NORTON,

HARRY T. DAVIS.