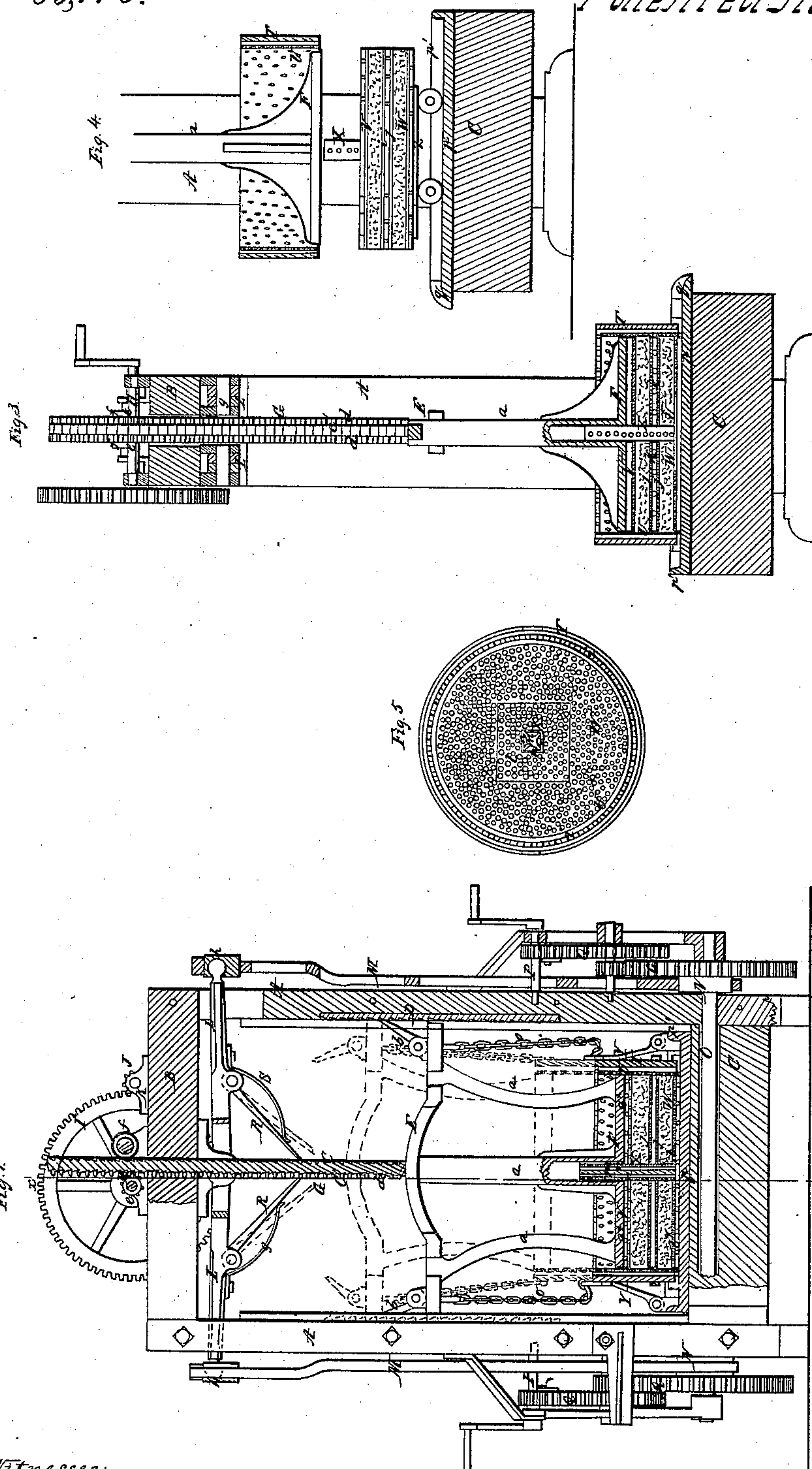


I. S. Schuyler,

Oil Press.

N^o 33,173.

Patented Aug 27, 1861.



Witnesses:
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UNITED STATES PATENT OFFICE.

ISAAC S. SCHUYLER, OF NEW YORK, N. Y., ASSIGNOR TO JOHN J. ECKEL,
OF SAME PLACE.

IMPROVED OIL-PRESS.

Specification forming part of Letters Patent No. 33,173, dated August 27, 1861.

To all whom it may concern:

Be it known that I, ISAAC S. SCHUYLER, of the city, county, and State of New York, have invented a new and Improved Oil-Press; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a sectional elevation of my invention; Fig. 2, a plan or top view of the same; Fig. 3, a vertical section of the same, taken in the line *x x*, Fig. 1; Fig. 4, a section of the same, taken in the same line *x x*, showing the follower in a raised state; Fig. 5, a horizontal section of the curb pertaining to the same.

Similar letters of reference indicate corresponding parts in the several figures.

To enable those skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A A are two uprights, the upper ends of which are connected by a cross-piece B, and C is a circular bed-piece, which is secured between the lower parts of the uprights A A. In the inner sides of the uprights A A there are made vertical grooves, one in each upright, and in each groove a rack D is fitted. (see Fig. 1.)

E is a cross-head, the ends of which are allowed to work freely up and down in the grooves in the uprights. This cross-head E has a plunger or follower F, attached to it by rods *a a a*. At each end of the cross-head E there is a pawl *b*, connected by a joint or hinge, and these pawls, when necessary, engage with the racks D D.

G is a vertical bar, which is attached centrally to the cross-head E and passes up through the cross-piece B. This bar G has a sunken rack *c* at one side of it and three racks *c' d d* at the opposite side, all of the latter being shown in Fig. 3. The racks *c c'* correspond with each other, and are at the centers of the sides of the bar G, the racks *d d* being at each side of the rack *c'*.

On the cross-piece B there is placed a shaft H, having two pinions *e e* on it, which gear into the racks *d d*, the smooth parts of the bar G, at each side of rack *c* at the opposite side of the bar, bearing against friction-roll-

ers *f f*. The shaft H has a spur-wheel I on it, into which a pinion J gears, the latter being on the driving-shaft K, which is also on the cross-piece B. This arrangement of the pinions *e e*, racks *d d*, and friction-rollers *f f* prevent any lateral play of the bar G as it is raised.

L L are two levers, the inner ends of which are forked and fitted on a common fulcrum *g*, the bar G passing up through the cross-piece B in line with said fulcrum. The levers L L pass through the uprights A A, and are connected by universal joints *h h* to bars M M, the lower ends of which are fitted on eccentrics N N at the ends of a shaft O, which passes horizontally through the bed-piece C and lower parts of the uprights A A.

P P represent crank-shafts, one at the outer side of each upright. These crank-shafts are connected with the shaft O by gearing Q (shown in Fig. 1) so proportioned as to greatly decrease the movement from the shafts P P to O, and consequently increase the power. To the under side of each lever L there is attached by a joint or pivot a pawl R, and a spring S is also attached to each lever L. The springs S are attached to the levers by pivots, so as to admit of the former being turned off from the pawls R when desired.

T is a curb or hollow cylinder constructed of metal and having vertical ribs *i* at its inner side. Within this curb or hollow cylinder T there is fitted a perforated cylinder U, the latter being in contact with the ribs *i*, and *j j* are two circular perforated plates, which have parallel bars *k* placed between them at a suitable distance apart, the plates *j j* being secured to the bars *k*.

V is a single perforated plate and so is W, the latter having a rectangular aperture at its center to receive the base *l* of an upright tube X, which tube is perforated and has a fluted column *m* within it. The base *l* is perforated and exactly fits the aperture in the bottom plate W, the base *l* when in its place forming a continuation of said plate; but the base-plate is removable at will. The material to be pressed when placed in the machine rests upon the base *l* and serves to keep it and the tube X and column *m* exactly in place, no other adjustment of tube X being required.

The attachment of the tube X and the column *m* to the perforated base-plate *l* forms a very important feature of my improvement.

In other machines the perforated tube is simply set upon the bottom plate; and when the material to be pressed is thrown into the curb it is liable to push the tube over into a position more or less inclined, so that the plunger when it comes down is likely to strike the end of the tube and cause serious damage to the machine. To prevent such accidents, it is customary to place a block of wood in the upper end of the perforated tube and guide it by hand into the aperture of the plunger, and thus adjust the tube so as to bring it in proper line with the plunger. This mode of adjustment and the subsequent removal of the block are attended with much trouble and loss of time. My improvement overcomes these objections, as the tube is rendered self-adjusting, for it stands plumb when its base-plate *l* has once been set into its receiving-aperture in plate W, and the weight of the material when thrown into the curb gives additional stability to the tube and base-plate. The column *m* is for the purpose of stiffening the tube X, and it is fluted to form passages *n* for the escape of the grease or oil. The plate V has parallel bars *a*^x on its upper side, and the plate W similar bars *b*^x on its under side. The base *l* of the tube X retains the latter in a vertical central position, so that the hollow rod *a* may pass on or over it without holding said tube, as has hitherto been the case, until the hollow rod reaches it.

At each side of the bed-piece C there is attached by a hinge or joint a pawl Y, the use of which will be presently shown, and to the curb T at two opposite points there are attached two chains *o o*. The top of the bed-piece C has a metal plate *p* attached to it, with a flange *p'* around it, the flange having a spout *q*. The plate and flange form a cup, which receives the grease or oil and discharges it at a certain point, the plate *p* being slightly inclined.

The operation is as follows: The curb T is placed on small projections *a'* on the plate *p*, and the plate W, with the upright tube X, is placed on said plate within the curb. The substance to be compressed is placed within the curb until the latter is about two-thirds full. The double plates *j j* are then fitted within the curb, the tube X passing through the centers of plates *j j*. The curb T is then filled with the substance to be compressed and the plate V placed thereon. The follower F is then forced down by turning shaft K, the pinions *e e* of shaft H forcing down bar G in consequence of gearing into the racks *d d*. The pawls *b* of the cross-head E are turned outward, so as to engage with the racks D D and perform the usual function of retaining-pawls. When the plunger is forced

down into the curb T as far as convenient with this means, the power is applied to the follower through the medium of the gearing Q, eccentrics N N, bars M M, levers L L, and pawls R R, the latter engaging with the racks *c c'* of the bar G and exerting an equal pressure at two opposite sides of it. The springs S keep the pawls in contact with the racks *c c'* and the pawls are moved up and down by the action of the levers L L, which are operated by the eccentrics N and bars M. As the follower descends, the tube X passes up within the central follower-rod *a*, which is made hollow to receive it. (See Fig. 3.) As the substance is compressed the grease or oil escapes through the perforations of the plates *j j* V W and cylinder U, and passes through between the plates *j j* and down the spaces between the ribs *i* of the curb T and also down the passages *n* in the tube X, and thence into the cup or basin at the top of the bed-piece, from whence it is discharged from spout *q* into any proper receptacle. When the substance is fully compressed, the chains *o o* of the curb T are connected to the cross-head E, the pawls *b b* thrown back, and the follower and curb, with its contents, both elevated until the pawls Y Y on the bed-piece can be thrown under a flange *c*^x at the lower end of the curb to support the same. A small carriage Z is then placed underneath the curb, and the plunger or follower F are again forced down and the contents of the curb or "cheese," as it is technically termed, are forced out from the curb on the carriage, and the latter, with its load, shoved out from underneath the curb. By this arrangement the compressed substance is very readily discharged from the press.

I do not claim the perforated cylinder U, nor the plates V W *j j*, nor a hollow perforated tube X, for they have been previously used; but

I do claim as new and desire to secure by Letters Patent—

1. The arrangement, in combination, of the hollow follower-rod, cross-head E, follower F, arms *a*, pawls *b*, and side rods D, with the double rack-bar G, pawls R, levers L, and connected gearing N O Q, as herein shown and described.

2. The construction of the perforated tube X with an attached perforated base-plate *l*, as herein shown and described.

3. The combination of the movable self-adjusting base-plate *l* and tube X with the bottom plate W, as herein shown and described.

4. The combination of the fluted column *m* with the perforated tube X and base-plate *l*, as herein shown and described.

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Witnesses:

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