No. 835,316. PATENTED NOV. 6, 1906.

J. H. OSBORNE.

COMPUTING CHEESE CUTTER.

APPLICATION FILED DEC. 15, 1904.

2 SHEETS—SHEET 1.

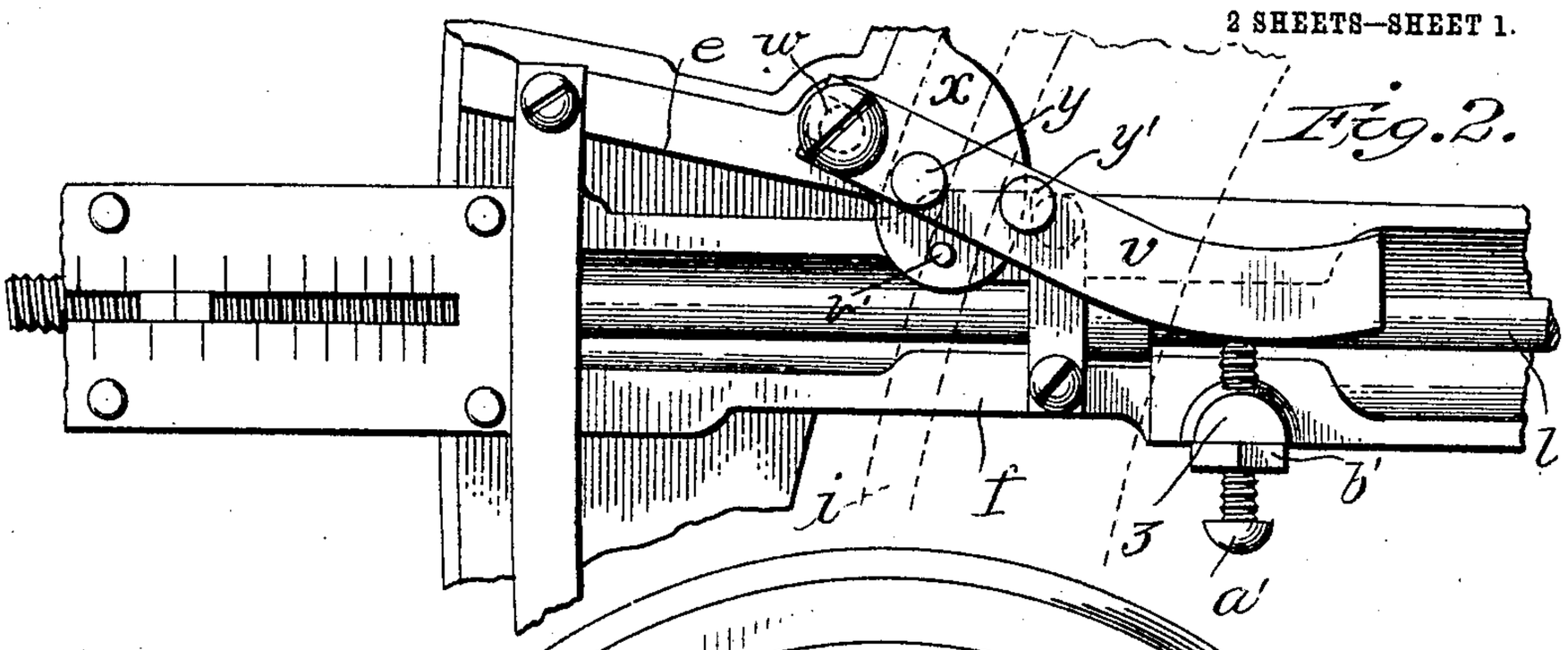

Fig. 2.

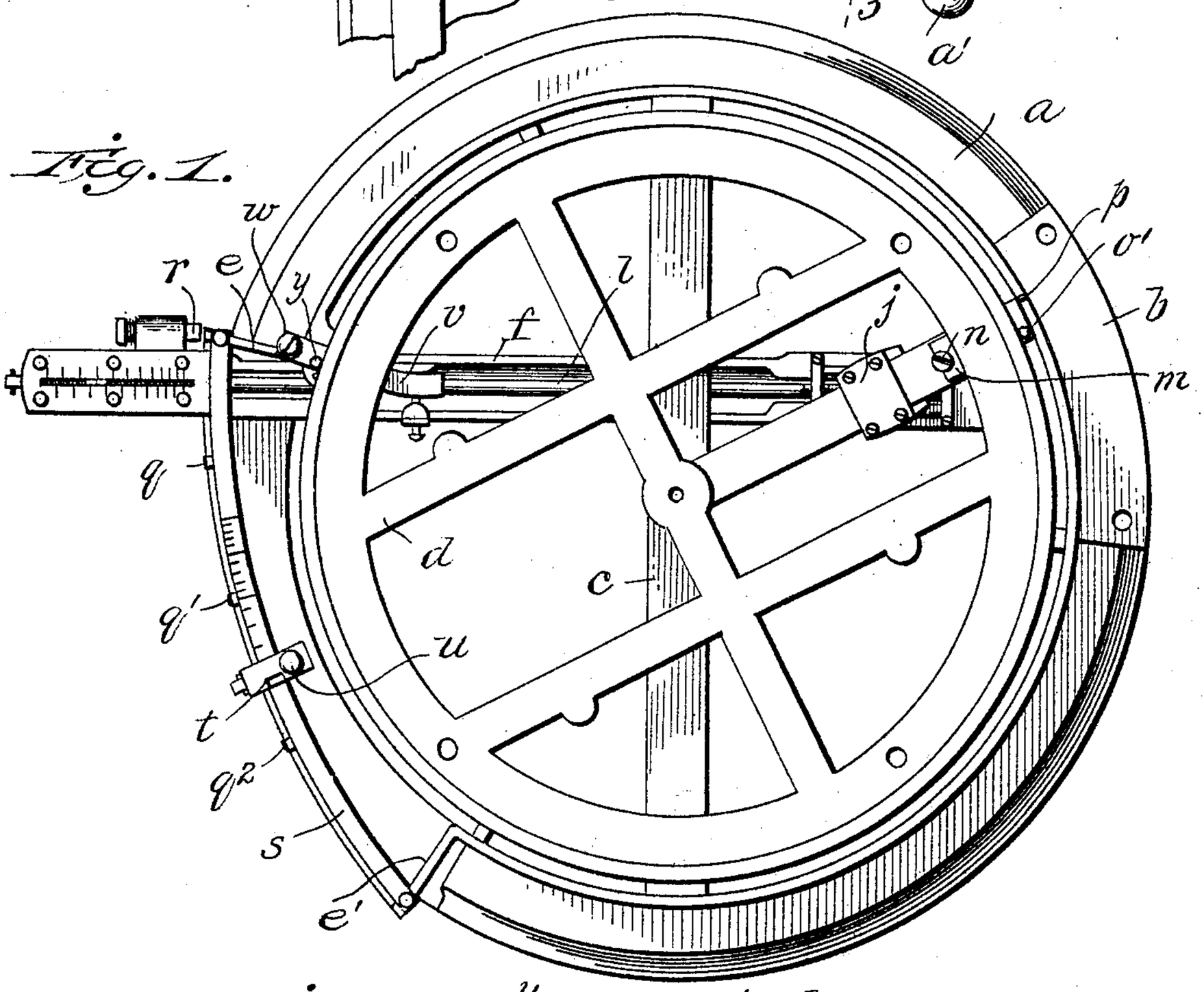

Fig. 1.

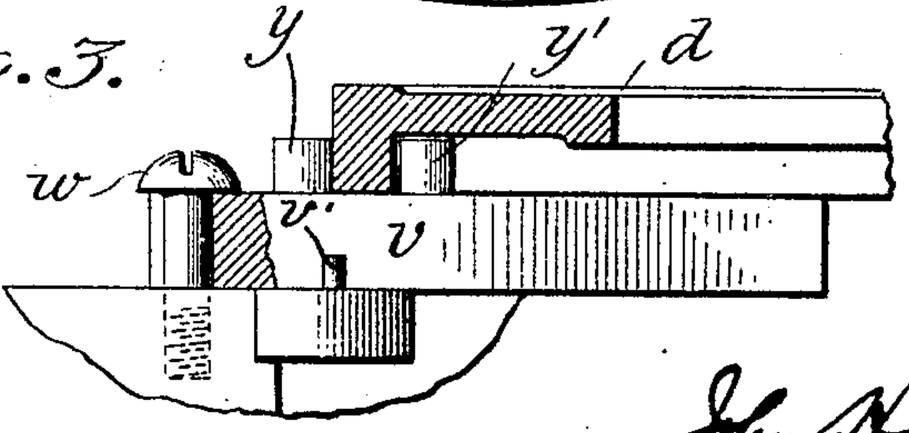

Fig. 3.

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2 SHEETS—SHEET 2.

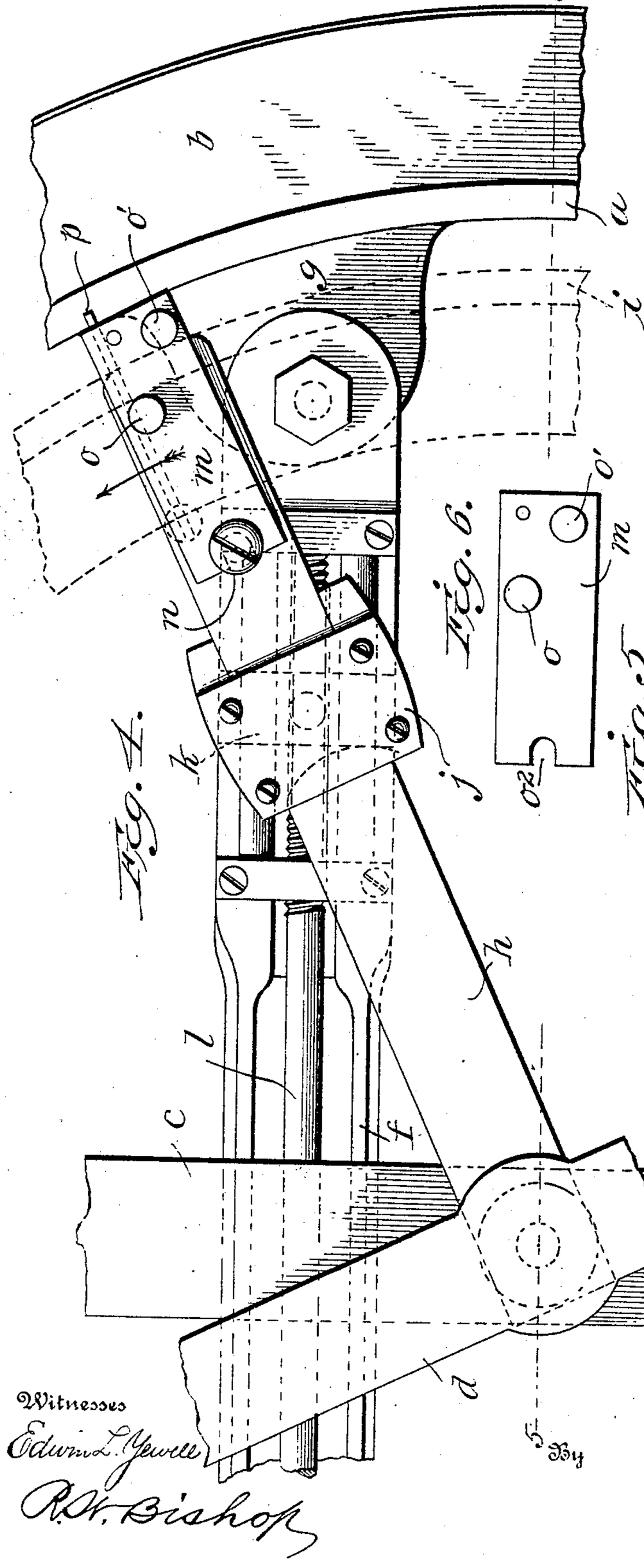

Fig. 4.

Fig. 6.

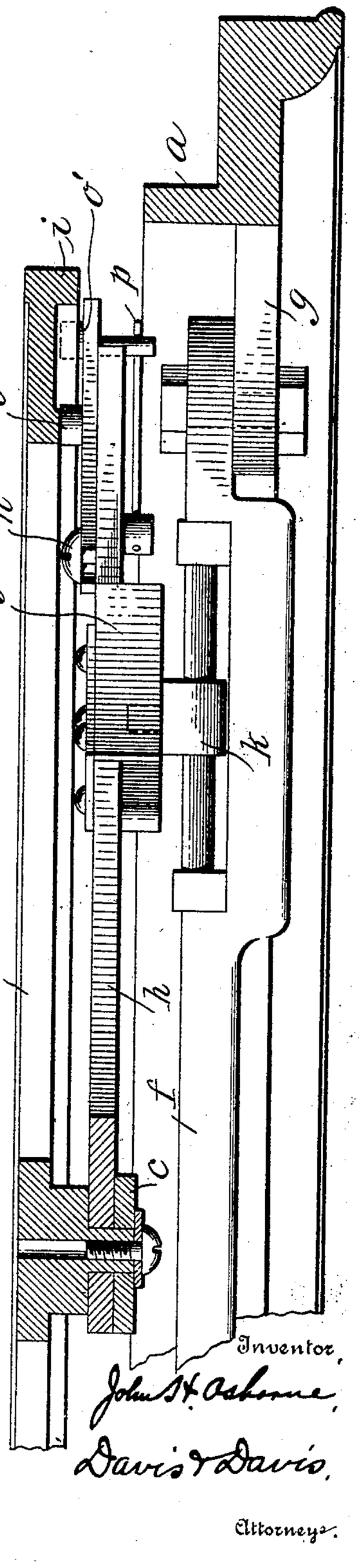

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN H. OSBORNE, OF ANDERSON, INDIANA.

COMPUTING CHEESE-CUTTER.

No. 835,316. Specification of Letters Patent. Patented Nov. 6, 1906.

Application filed December 15, 1904. Serial No. 236,979.

To all whom it may concern:

Be it known that I, JOHN H. OSBORNE, a citizen of the United States of America, residing at Anderson, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Computing Cheese-Cutters, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a cheese computing or measuring machine, with the cheese-board removed from the table to better show the relation of the parts. Fig. 2 is a plan view, enlarged, showing in detail the locking device for arresting the momentum of the table. Fig. 3 is a detail section showing the same. Fig. 4 is a detail plan view, enlarged, showing more particularly the clutch carried by the radial actuating-arm. Fig. 5 is a detail section showing the same and taken on the line 5 5 of Fig. 4, and Fig. 6 is a detail plan of the clutch-plate. Fig. 7 is a detail transverse section showing more particularly the vertically-adjustable pin for use as a stop on the price-unit bar.

These improvements have special relation to the invention covered by my former applications, and particularly application serially numbered 224,576, filed September 15, 1904, and patented August 22, 1905, No. 797,599; and the special object of the present improvements is to insure accuracy of measurement, whether the amount measured off be a full pound or a fraction thereof, as more fully hereinafter set forth. To the accomplishment of this object and such others as may hereinafter appear the invention consists of the parts and combination of parts hereinafter fully described, and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming part of this specification.

Referring to the drawings by reference characters, *a* designates the base-ring of the machine, which is adapted at *b* to receive the standard supporting the knife. (Not shown.) A bar *c* extends across the base-ring to afford a support for the central pivot of the rotary cheese-table frame *d*. Opposite the knife-receiving part *b* the base-ring is provided with a segmental depression or recess, between whose shoulders *e e'* the actuating-lever *f* is adapted to vibrate in rotating the table. The lever *f* is pivoted to a lug *g* on the base-ring adjacent to the knife-receiving part *b*. The lever actuates the table through the medium of a radial arm *h*, carrying a clutch at its outer end which engages a depending flange *i*, carried by the table and a suitable connection between this arm and the lever, this connection being adjustable in order to vary the throw of the radial arm, and thereby vary the amount of cheese measured off by the rotation of the table.

The adjustable connection consists of a sliding box *j*, mounted on the arm and having a pivotal connection to a sliding nut *k*, mounted on the lever below, so that when the nut *k* is slid inward or outward on the lever the box will be similarly adjusted on the arm. The nut *k* is adjusted along the lever by means of a screw-rod *l* lying in a channel formed in the lever and extending outward slightly beyond the lever in order that a suitable wrench or key may be applied for turning it. A suitable cheese-total indicator or scale is arranged on the projecting end of the lever, as in my former application hereinbefore mentioned.

The clutch device carried by the arm *h* consists of a plate *m*, which is secured to the upper face of the arm by the conjoint action of a pivot-screw *n* and the table *d*. The screw or headed pin *n* engages loosely a slot or notch o^2, formed in the inner end of the plate, and rising from the plate near its outer end is a pair of gripping pins or lugs *o o'*, arranged upon opposite sides of and adapted to grip the annular flange *i* of the table. The inner lug or pin *o* is arranged in advance of the lug *o'*—that is, out of radial alinement with the same—and the two lugs are so spaced with reference to each other that when the arm *h* is moved in the direction of the arrow shown in Fig. 4 they will grip the flange, and thereby cause the table to move with the arm, and when the arm is moved in the opposite direction the plate carrying the lugs will be swung sufficiently on its pivot to permit the grip-lugs to slide freely on the flange without rotating the table.

It will be observed that the gripping action is caused by the tendency of the plate *m* to turn on its pivot *n*, this tendency to turn on its pivot being caused by the friction of the lugs against the flange.

In order that the lugs shall always grip the flange except when the arm is moving back to its starting position, I provide a spring *p*, whose tendency is to swing the plate backward on its pivot, thereby keeping the lugs in close contact with the flange. This causing

the lugs to normally grip the flange insures accuracy in the movement of the table, as is obvious.

In Figs. 1 and 2 the actuating-lever is shown in its starting position. When the cheese is weighed and placed upon the table and the proper adjustment of the connection *j k* is made through the medium of the screw-rod *l*, (this adjustment being indicated by the cheese-total scale on the projecting end of the lever,) the cheese is measured off by vibrating the lever, as is usual in this class of devices. Movement of the lever between the stops *e e'* after the cheese-total scale is adjusted will measure off exactly one pound of cheese, and fractions of a pound are measured off by a shorter throw of the lever. The forward movement of the lever does not rotate the table, but simply moves the clutch to its starting-point. Then the reverse or backward throw of the lever causes the table to be turned the desired distance whether it be for a full pound or a fraction thereof. It will thus be seen that the actuating-lever is brought back to the same starting-point after each measuring operation—that is to say, the feeding or actuating stroke itself of the lever brings it back to the starting-point, irrespective of the amount of cheese measured off.

Any suitable devices may be employed for measuring off fractions of a pound. I have shown a series of lugs *q q' q²* on the base for measuring off, respectively, a quarter, a half, or three-quarters of a pound, these lugs being adapted for use in connection with the spring-retracted stop-pin *r*, carried by the lever. Secured to the base and arranged over the lever is a curved bar *s*, graduated for use as a price-unit scale, this bar *s* carrying an adjustable slide *t*, provided with a vertically-adjustable stop-pin *u*, as in my former application.

It will be observed that another advantage in actuating the table on the reverse stroke is that the blow of the initial stroke, which is of course the lighter of the two strokes, will be taken up by the stop-pin, while the blow or impact of the actuating stroke will be received by the permanent stop or table-arrester, whereby the stop device will be less liable to injury and disarrangement than if it were arranged so as to take the impact of the working stroke.

For the purpose of arresting the momentum of the table at the end of each working stroke of the lever I provide a simple device which will be caused to grip the depending flange of the table and positively lock the table against further movement when the lever reaches the end of its actuating stroke. Any suitable devices may be employed for this purpose without departing from my invention. I have shown and I prefer using a finger or arm *v*, pivotally mounted by means of a headed screw *w* on the base adjacent to the stop-shoulder *e* and extending inwardly under the table. This arm *v* rests upon an inward-extending lug carried by the base, and it is provided with a pair of upwardly-extending grip-lugs or pins *y y'*, similar in construction and operation to the grip-lugs *o o'*, carried by the clutch. Rising from the lever *f* in the path of the inner end of the finger *v* is a lug *z*, which carries an adjustable set-screw *a'*, adapted to contact with the adjacent rounded face of the finger when the lever returns to its starting-point, this screw being held in its adjusted position by means of a binding-nut *b'*. By means of this screw the device may be adjusted to accurately lock the table at the proper point.

It will be observed that the headed pin or screw *w* engages loosely a notch in the outer end of the arm *v*, so that said arm shall have a pivotal action on said pin or screw sufficient to permit the grip-lugs to bite the flange *i* when the arm is actuated by contact with the adjusting-screw. The grip-lugs *y y'* are arranged out of radial alinement and the outer lug *y* is arranged a little forward of the lug *y'*, so that the table will be free to revolve without hindrance from said lugs until the arm *v* is turned backward on its pivot, as is obvious. The forward movement of arm *v* is limited by stop-pin *v'*.

The advantage in mounting the clutch-plate *m* so that it may have a slight radial movement on the arm in addition to its pivotal movement is that it is thereby free to adjust itself to the clutch rim or flange more accurately—that is, so that both pins may clutch the rim with equal force even after the pins become worn.

It will be observed that an important advantage is derived by pivoting the operating-lever at a point considerably beyond the center of the table from the side at which the handle end of the lever projects. This arrangement gives an augmented throw of the handle portion or that portion which works along the scale-plate—that is, for a given movement of the table the projecting portion of the lever will move farther and faster than the periphery of the table. This enables me to use a scale having larger graduations—*i. e.*, graduations set farther apart than would be the case were the lever pivoted at or near the center of the table so as to rotate in unison with it. Where the lever is pivoted at or near the center, it necessarily travels the same distance as the table to measure off a given quantity of cheese, so that particularly when a heavy cheese is being measured off and a fraction of a pound only is desired the movement of the table will be necessarily comparatively slight, as the slice must be cut comparatively thin. This, as is obvious, will require to attain the necessary accuracy that a very fine scale be

used and that all lost motion will be eliminated and that the clutch shall operate with a great degree of accuracy; but by giving the lever or that part of it which works in conjunction with the scale an augmented throw a much greater degree of accuracy is obtainable with a given degree of skill and care in the construction of the table-operating devices.

It will be apparent to those skilled in the art that various mechanical embodiments of the invention are possible, and I therefore do not wish to be limited to the exact arrangement and construction shown.

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

1. The combination with a base and a rotatable table mounted thereon, of actuating means for the table, and a momentum-arrester for the table automatically actuated by said actuating means.

2. The combination with a base and a rotatable table mounted thereon, of actuating devices for the table embodying a vibrating lever, and a table-arrester automatically actuated by said lever.

3. The combination with a base and a rotatable table mounted thereon, of table-actuating devices embodying a vibrating lever and means for rotating the table by the reverse or back stroke of the lever, whereby the lever is brought back to the same starting-point irrespective of the length of throw or amount measured off, and an automatic table arrester or lock actuated by the return of the lever to its starting-point.

4. In combination with a base and a rotatable cheese-table thereon, means for rotating the table embodying a vibrating lever and means whereby the table is rotated upon the reverse stroke of the lever, and a table arrester or lock adjacent to the starting-point of the lever and arranged in the path of the lever for the purpose set forth.

5. In combination with a base and a rotatable table thereon provided with a depending annular flange, means for rotating the table measured distances, and a table-arrester actuated by said means and adapted to grip said depending flange for the purpose set forth.

6. In combination with a base and a rotatable table mounted thereon, a vibrating lever and means operated thereby for engaging the table to move it measured distances, and a table-arrester adapted to be actuated by the lever and consisting of an inward-extending arm mounted on the base and carrying grip devices, and having its inner end in the path of a contacting part carried by the lever.

7. In combination with a base and a rotatable table mounted thereon having a depending annular flange, of a vibrating lever and means for connecting it to the flange of the table to rotate the same, and a table-arrester consisting of an arm pivotally mounted on the base and extending inwardly under the said annular flange into the path of said lever and provided with a pair of upward-extending grip-lugs arranged on opposite sides of said annular flange, for the purpose set forth.

8. In a cheese-cutter, the combination of a rotary cheese-plate, means for imparting a partial rotation thereto, and means for automatically locking said plate from movement in either direction.

9. In a cheese-cutter, the combination of a rotary cheese-plate, a reciprocating lever for imparting a partial rotation thereto, and means for locking said plate from movement in either direction, said means being operable by the lever.

10. In combination with a base and a rotatable table mounted thereon, of a vibrating lever and means for engaging it with the table to rotate the same, a set-screw carried by the lever, and a movable arm arranged in the path of the set-screw so as to be actuated by the movement of the lever, said movable arm carrying means for engaging the table and arresting its momentum after each actuating stroke.

11. In combination with a base and a rotatable table mounted thereon and having an annular depending flange; of means for rotating the table measured distances embodying a vibrating lever and a table-arrester adapted to be automatically actuated by the lever and consisting of an arm pivoted outside of the table and extending in under the table and carrying a pair of upstanding lugs engaging the flange one in advance of the other, for the purposes set forth.

12. In a cheese-cutter, the combination of a base-frame and a rotary table mounted thereon, means for actuating the table, and an independently-mounted automatic arrester actuated by said means.

13. In a cheese-cutter, the combination of a base-frame and a rotary table mounted thereon, a vibrating lever for actuating the table, and an independently-mounted automatic arrester actuated by said vibrating lever.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 10th day of December, 1904.

JOHN H. OSBORNE.

Witnesses:
GLAD. S. KING,
MARY E. MARKEY.