

P. L. KIMBALL.
CENTRIFUGAL LIQUID SEPARATOR.
APPLICATION FILED MAR. 12, 1909.

928,130.

Patented July 13, 1909.

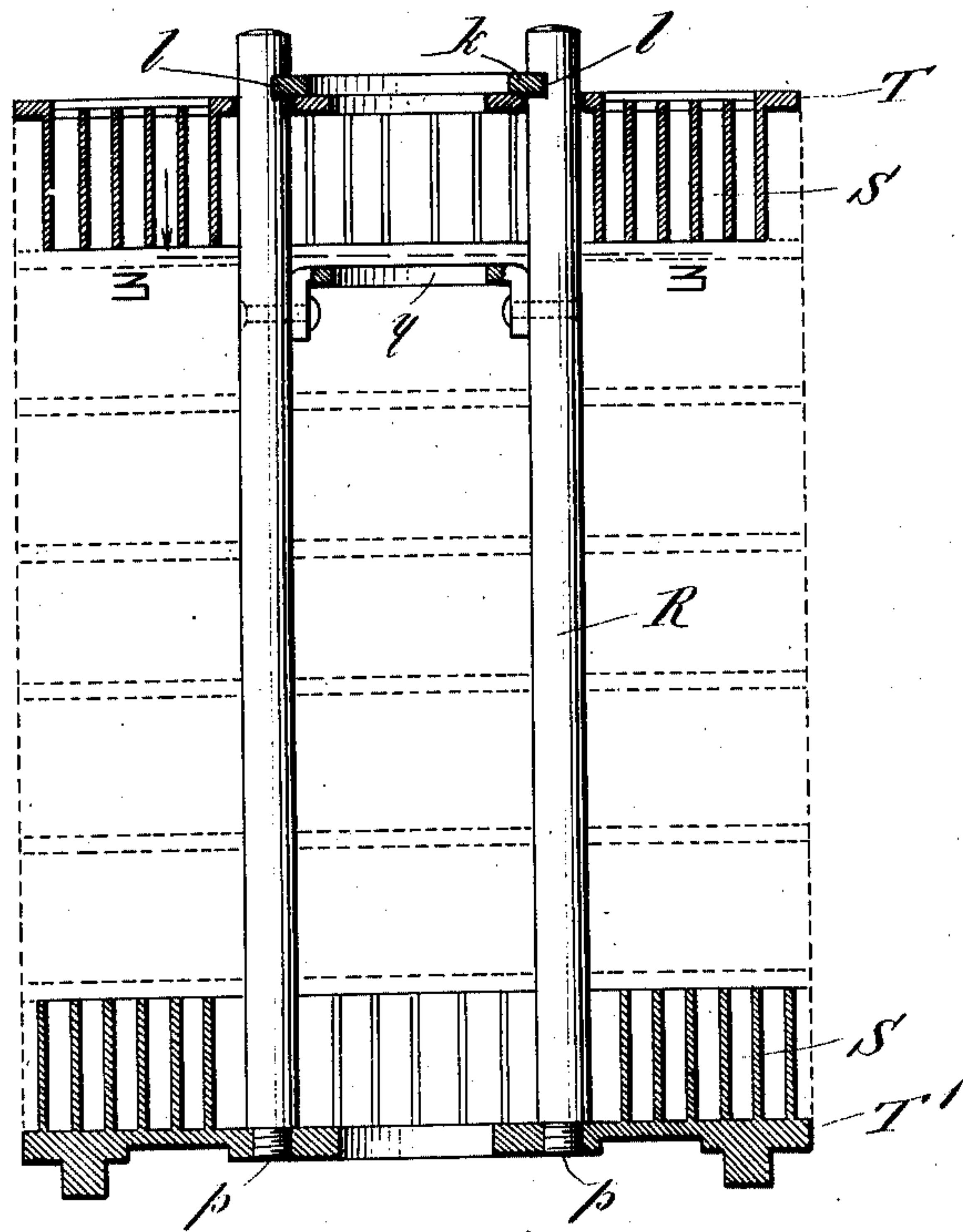


FIG. 1.

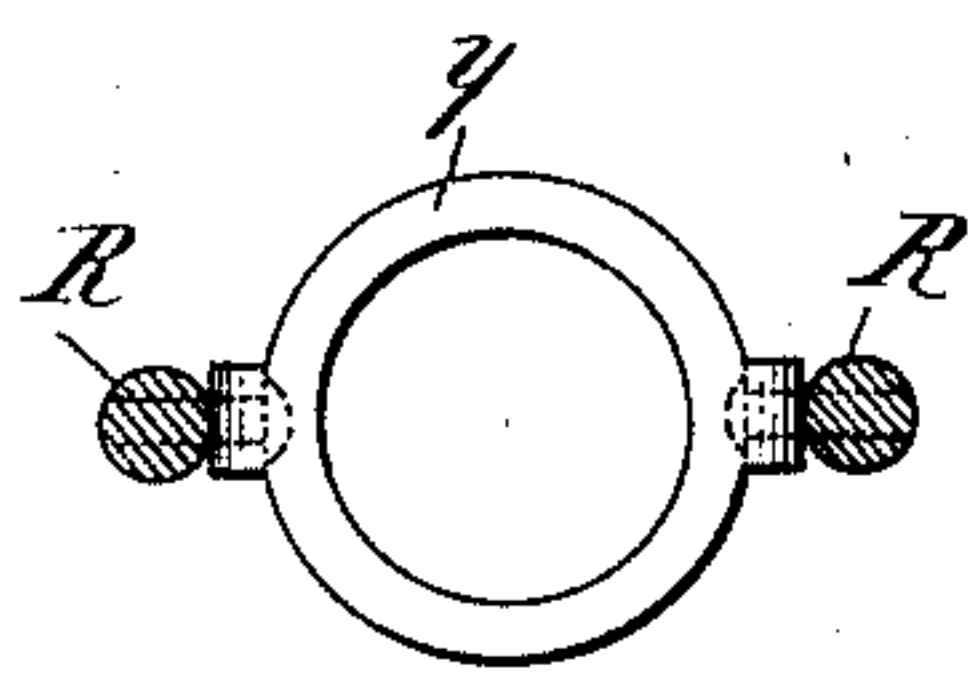


FIG. 3.

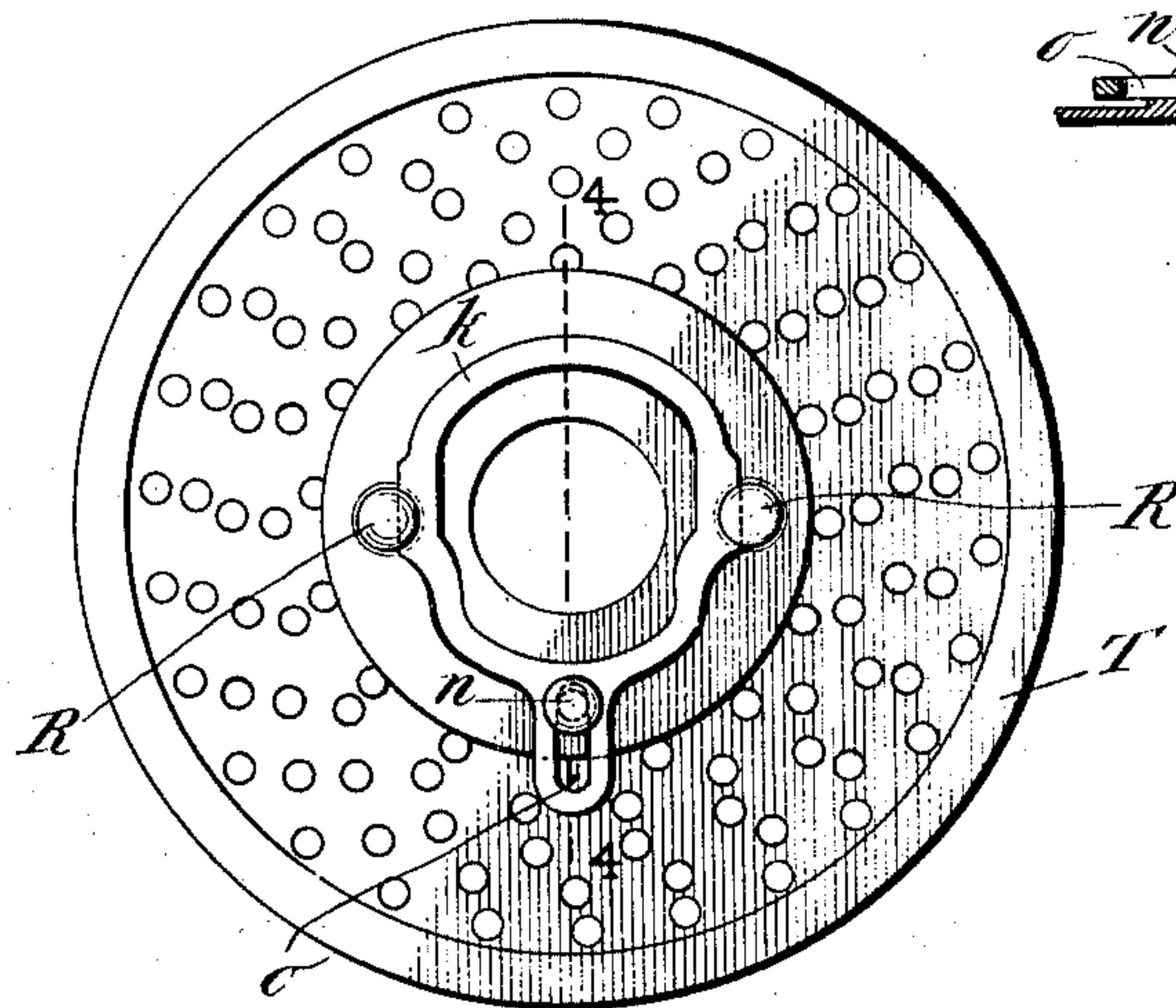


FIG. 2.

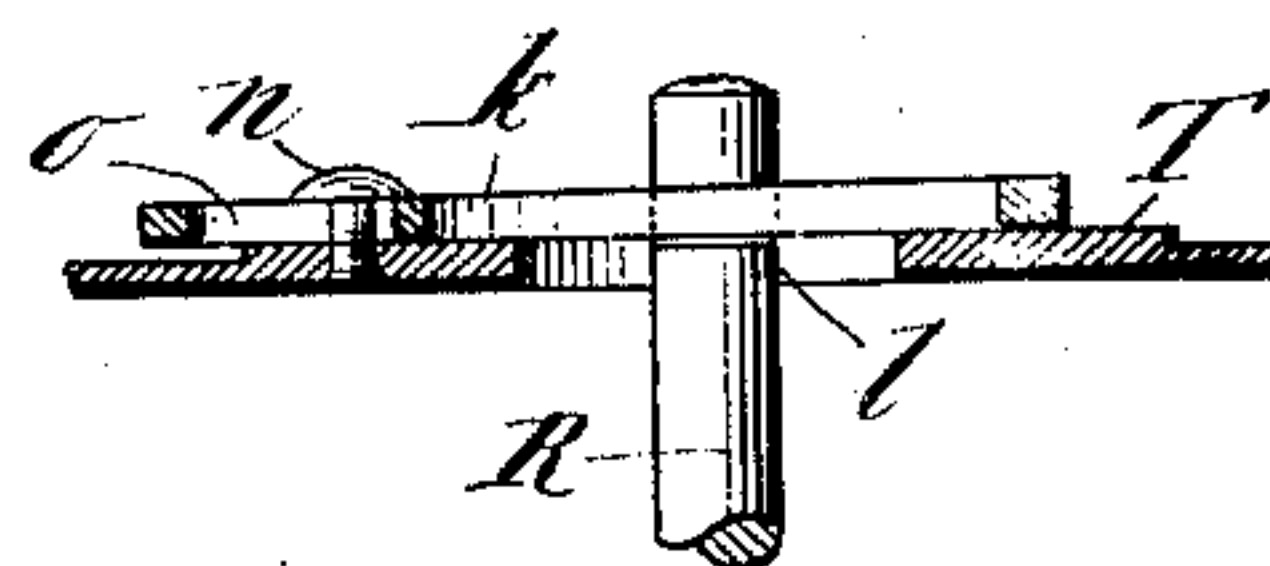


FIG. 4.

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UNITED STATES PATENT OFFICE.

PERLEY L. KIMBALL, OF BELLOWS FALLS, VERMONT, ASSIGNOR TO VERMONT FARM MACHINE COMPANY, OF BELLOWS FALLS, VERMONT, A CORPORATION OF VERMONT.

CENTRIFUGAL LIQUID-SEPARATOR.

No. 928,130.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed March 12, 1909. Serial No. 482,983.

To all whom it may concern:

Be it known that I, PERLEY L. KIMBALL, a citizen of the United States of America, residing at Bellows Falls, in the county of Windham and State of Vermont, have invented certain Improvements in Centrifugal Liquid-Separators, of which the following is a specification.

This invention relates to centrifugal liquid separators and consists in improvements in the construction of the means by which the series of separable superposed liquid subdividers within the bowl are assembled, adjusted and retained in concentricity, described and shown in my prior application Serial No. 470,818. In the construction therein set forth it has been found that when the subdivider adjusting and retaining rods are separated from the other parts of the apparatus there is liability of their being sprung or bent out of parallelism, and as a consequence when this occurs there is difficulty in entering the unsupported ends of such rods into the socket therefor in the plate at the top or bottom of the series of subdividers when assembling the parts, and these improvements consist in a tie-yoke secured to the rods near their ends which are unsupported when the subdividers are removed, to hold said rods firmly in their normal parallel position, both in relation to one another and in relation to the axis of the bowl, and also in providing modified means for readily securing the rods to and releasing them from the plates at top or bottom of the series of subdividers, and under some conditions it may be found convenient to apply the readily releasing means to both upper and the lower ends of the rods instead of to one end only.

In the drawings forming a part of this specification, Figure 1 is an elevation of the retaining rods, with the tie-yoke, the subdividers and their securing means in section; Fig. 2 is a plan view of the upper plate of the subdivider series and of the modified form of securing device therefor; Fig. 3 is a plan view of a circular tie-yoke with the retaining rods in section on line 3—3, Fig. 1; Fig. 4 is a sectional elevation on line 4—4, Fig. 2.

Referring to the drawings by letters to designate the several parts, S are the subdividers, R, R, the adjusting and retaining rods therefor, T is the top plate and T' the

bottom plate for the series of subdividers to which the rods R are secured by riveting or screwing one end, as *p*, into one of the plates, and attaching the other end of each to the other plate by readily released means, such as the wedge-shaped sliding key *k* which is arranged to engage a notch in each rod R, and when the key *k* is pushed into the notches *l* the inclined surface of the key will cause it to press the top plate T down upon the subdividers and hold them securely together. The key *k* is limited in its sliding movement by a pin *n* which passes through a slot *o* in the key and is secured in the plate T.

As illustrated in Fig. 1 the lower ends of the rods R are screwed into the lower plate T', which holds those ends securely in position under all conditions, and in order to hold these rods in parallelism at all times, a tie-yoke *y* is placed between them near their upper ends and secured to each by rivets or otherwise, by means of which the rods are rigidly held in their normal parallel position when all of the subdividers have been separated therefrom. This tie-yoke is illustrated as a ring, which form is used for the purpose of accommodating a central rod which is used to clamp the cover to the bowl; one half of a circle would be sufficient for such tie-yoke, for instance, as illustrated by the sectional view in Fig. 1, and when the cover is secured to the bowl by other means than the central rod, and no feed tube passes down through the center of the bowl, a straight bar may be used as such tie-yoke.

I claim:

1. In a centrifugal liquid separator, provided with a series of superposed annular subdividers within the bowl, a plurality of adjusting and retaining rods for such subdividers, which rods extend within the annular space therein from a plate above the series to a plate below the series and are adapted to be attached to said plates, and a tie-yoke secured to said rods near the ends thereof which will otherwise be left unsupported when the subdividers are separated from the rods, which yoke is constructed so as to hold the rods firmly in their normal position in relation to each other and to the axis of the bowl and to leave an unobstructed space for an axially located clamping rod for the cover when the parts of the separator are assembled.

2. In a centrifugal liquid separator, provided with a series of superposed annular subdividers within the bowl, a plurality of adjusting and retaining rods for such subdividers which rods extend through the annular space therein from a plate below the series to a plate above the series and are securely attached to one of said plates, readily released means for attaching said rods to the other plate and a tie-yoke secured to said rods near the ends to which the readily released means are applied, to hold the rods in their normal position in relation to each other when such means are removed.

3. In a centrifugal liquid separator, pro-

vided with a series of superposed annular subdividers within the bowl, a plurality of adjusting and retaining rods for such subdividers, which rods extend within the annular space of the subdividers from a plate beneath the series to a plate above the series, and a key adapted to engage one of said plates and the ends of the rods adjacent thereto to readily secure said rods to the plate and to release them therefrom.

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Witnesses:

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