(No Model.)

G. SCHACKE.

HOP STRAINER.

No. 558,572. Patented Apr. 21, 1896.

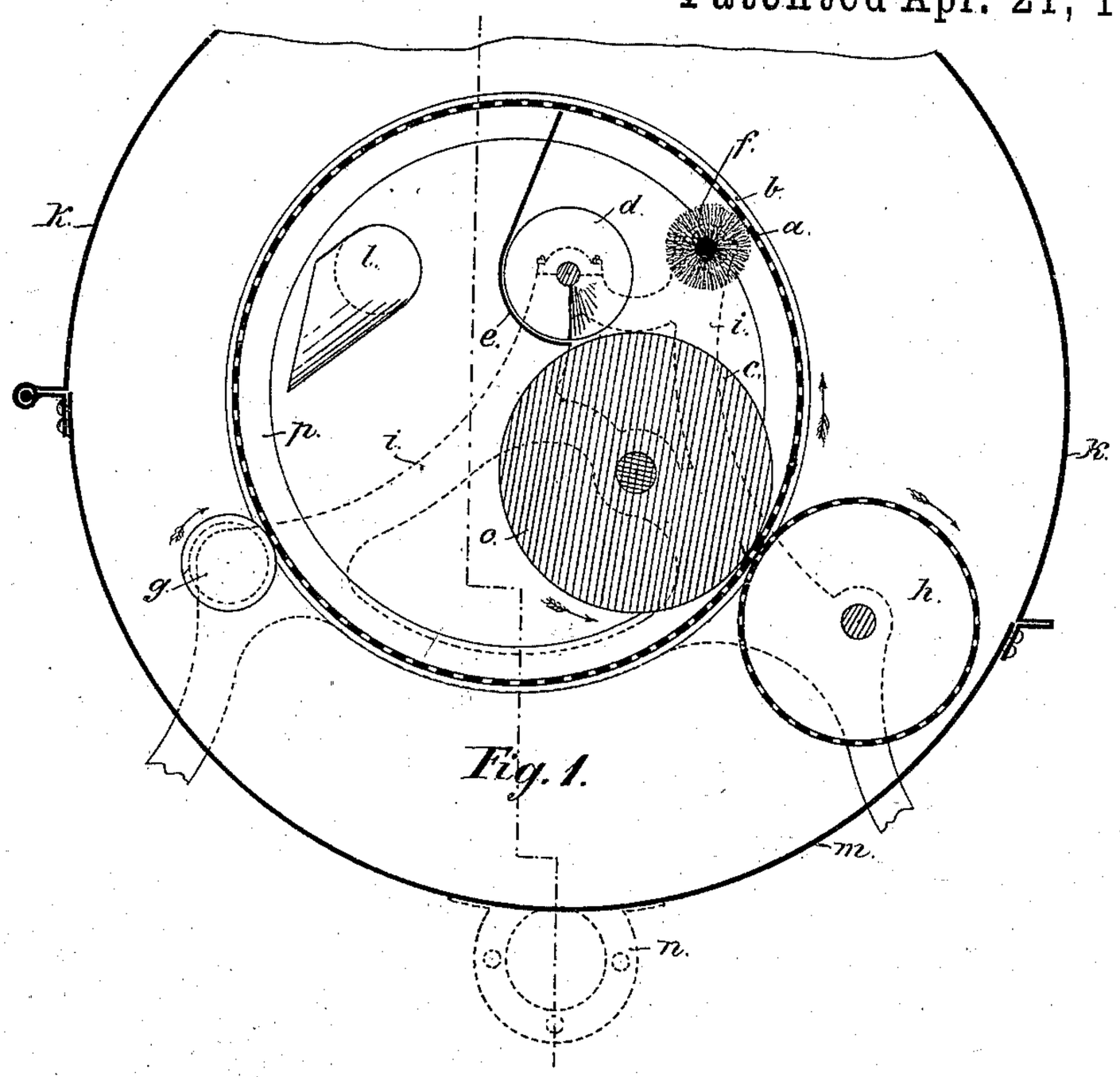

Fig. 1.

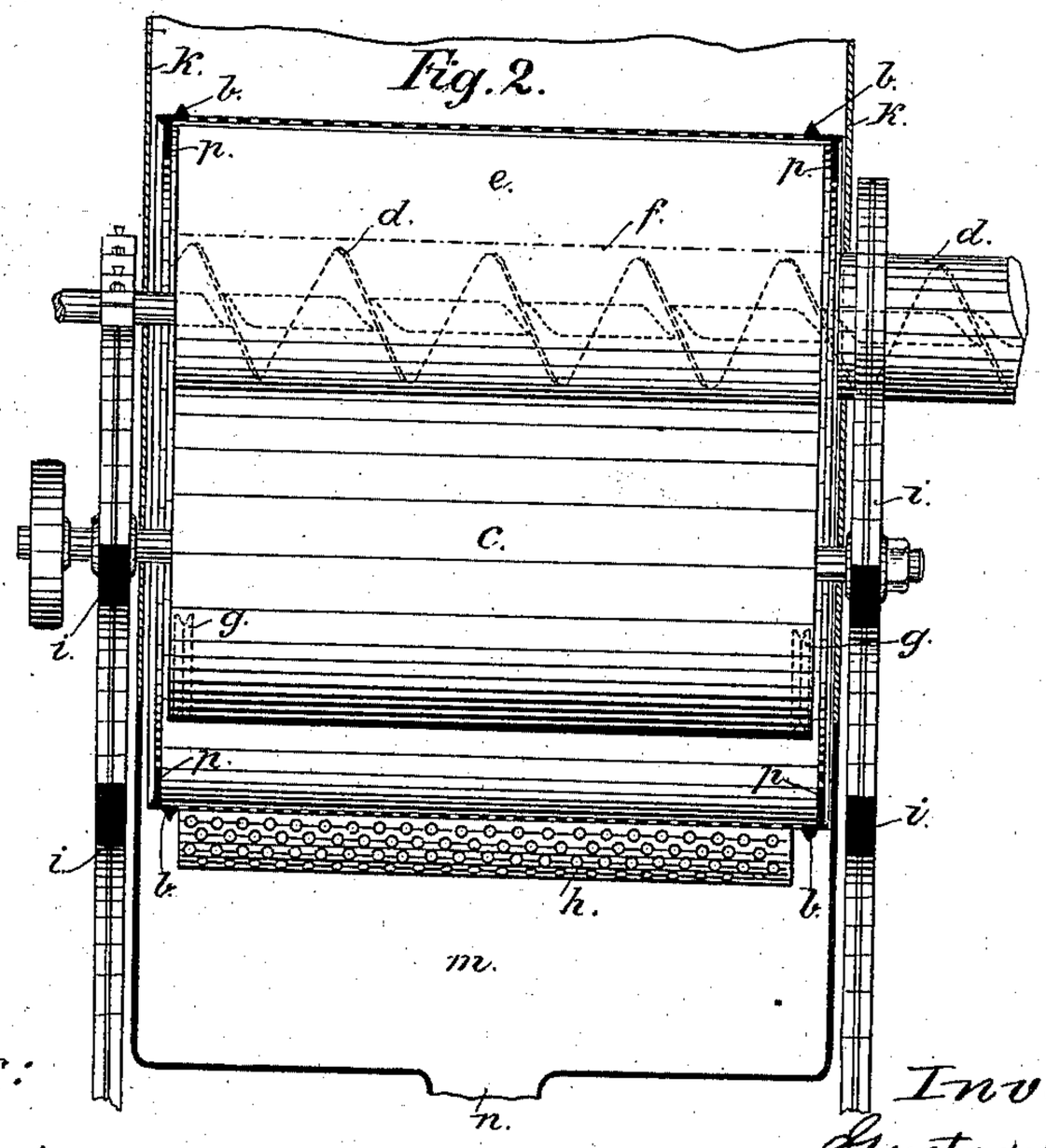

Fig. 2.

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UNITED STATES PATENT OFFICE.

GUSTAV SCHACKE, OF AUGSBURG, GERMANY.

HOP-STRAINER.

SPECIFICATION forming part of Letters Patent No. 558,572, dated April 21, 1896.

Application filed June 22, 1895. Serial No. 553,726. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV SCHACKE, a citizen of the Kingdom of Bavaria, and a resident of Augsburg, Bavaria, Germany, have invented certain new and useful Improvements in Hop-Strainers, of which the following is a specification.

This invention relates to hop-strainers with a compressing device, such as are usually employed in breweries for the separation of the wort from the hops after said wort has become sufficiently strong.

The object of my invention, and what distinguishes the same from the strainers hitherto used, is principally to cause the compression of the hops during the outflow of the hops from the wort-containing pan or its inflow into the strainer. With this object in view a wort-strainer made under my invention is constructed in the manner hereinafter described.

In the drawings accompanying this specification, Figure one is a transverse section, and Fig. 2 a longitudinal section, of a hop-strainer embodying my invention.

As shown, the same consists of a foraminated drum or cylinder *a*, serving as a strainer, open at both ends and provided with treads or guide-rails *b*, of prismatic form, the said cylinder being adapted to be revolved when the apparatus is started. This cylinder derives its motion from the roller *c*, which is journaled in standards *i i*. The wort is admitted to the interior of the strainer through pipe *l*, while the expression of the hops is effected by the roller *c*, preferably of wood, the latter serving to grasp the hops introduced together with the impure wort and to press the same against the cylinder at the point of contact between the wall of the latter and the roller. The residue or expressed hops, after having passed the point of compression, is removed from the straining cylinder or drum by a screw or spiral conveyer *d*. A scraper, which, at the same time, serves as the conveyer-casing, is represented at *e*. The same bears snugly against the roller *c*, and thereby prevents a return of the expressed hops into the fresh wort admitted at *l*. The wort which has thus been separated from the hops flows through the perforations of the drum *a*, into the collecting-trough *m*, whence it escapes through the outlet *n* into the cooler or any other suitable receptacle.

For the purpose of constantly keeping the inner surface of the drum *a* clean a rotary brush *f* is preferably arranged within the same, the length of the same being equal to the length of the drum. Like the roller *c* and spiral conveyer *d*, this rotary brush is journaled in the standards *i i*. A cylinder *h*, which may be perforated, as shown, and which is also journaled in the standards *i i*, serves to receive the pressure of the roller *c* against the wall of the drum *a*. The axle of this cylinder *h* is adjustably journaled in the standards and provided with a pressing device comprising springs or the like, (omitted from the drawings,) which serve to force the cylinder *h* tightly against the drum *a*. These means also serve to increase or diminish the pressure of this cylinder against the drum *a*, according to pleasure.

The pressure-cylinder *h* is caused to revolve in the direction of the arrow by the drum *a*, which, in turn, is caused to revolve by frictional contact with roller *c*. The drum or cylinder *a* is preferably provided with a rim or flange *p* at both ends to prevent the escape or spilling of hops at these points.

Two supporting rollers or idlers *g*, having a V-shaped cross-section and adapted to receive the treads or guide-rails *b* on the drum *a*, are arranged opposite the cylinder *h* to assist in supporting the said drum *a*. Instead of these supporting-rollers *g*, ball-bearings might be advantageously employed. Such ball-bearings might also be employed for the cylinder *h*.

To prevent the escape of vapors, a lid or cover *k* may be provided, which lid may be hinged to the collecting-trough, so that it may readily be thrown open.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a perforated drum, and a pair of tread-rails surrounding the drum, of a compressing-roller within said drum and bearing against its inner surface, a pair of supporting-rollers over which said tread-rails move, and a perforated pressure-cylinder bearing against the drum between the rails and opposite the supporting-rollers

and means for rotating the compressing-roller, substantially as set forth.

2. The combination, with a revoluble perforated drum, open at each end and having an inwardly-extending flange at each end, of a compressing-roller bearing against the inner surface of the drum between the flanges, and means for supporting the cylinder, substantially as set forth.

3. The combination, with a perforated drum, a compressing-roller within the drum and bearing against the inner surface of the drum and means for rotating the compressing-roller, of a spiral conveyer above the said roller, a casing for the conveyer extending toward the roller to form a scraper, and a cleaning device bearing against the inner surface of the drum between the casing and roller, substantially as set forth.

4. The combination, with a perforated drum, a pair of tread-rails surrounding said drum, and a frame at each end of the drum, of a pair of supporting-rollers mounted in said frames and engaging the tread-rails, a compression-roller bearing against the inner surface of the drum and journaled in the frames, a perforated pressure-cylinder journaled in the frames and bearing against the outside of the drum, a conveyer and a rotary brush above the compressing-roller and journaled in the frames, a casing partly surrounding the conveyer and carried by said frames, and means for rotating the compression-roller and conveyer, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

GUSTAV SCHACKE.

Witnesses:
ALBERT WEICKMAN,
CARL MAYER.