No. 785,876. PATENTED MAR. 28, 1905.

G. GROPP.

SCREW PRESS.

APPLICATION FILED SEPT. 18, 1903.

Fig. 1.

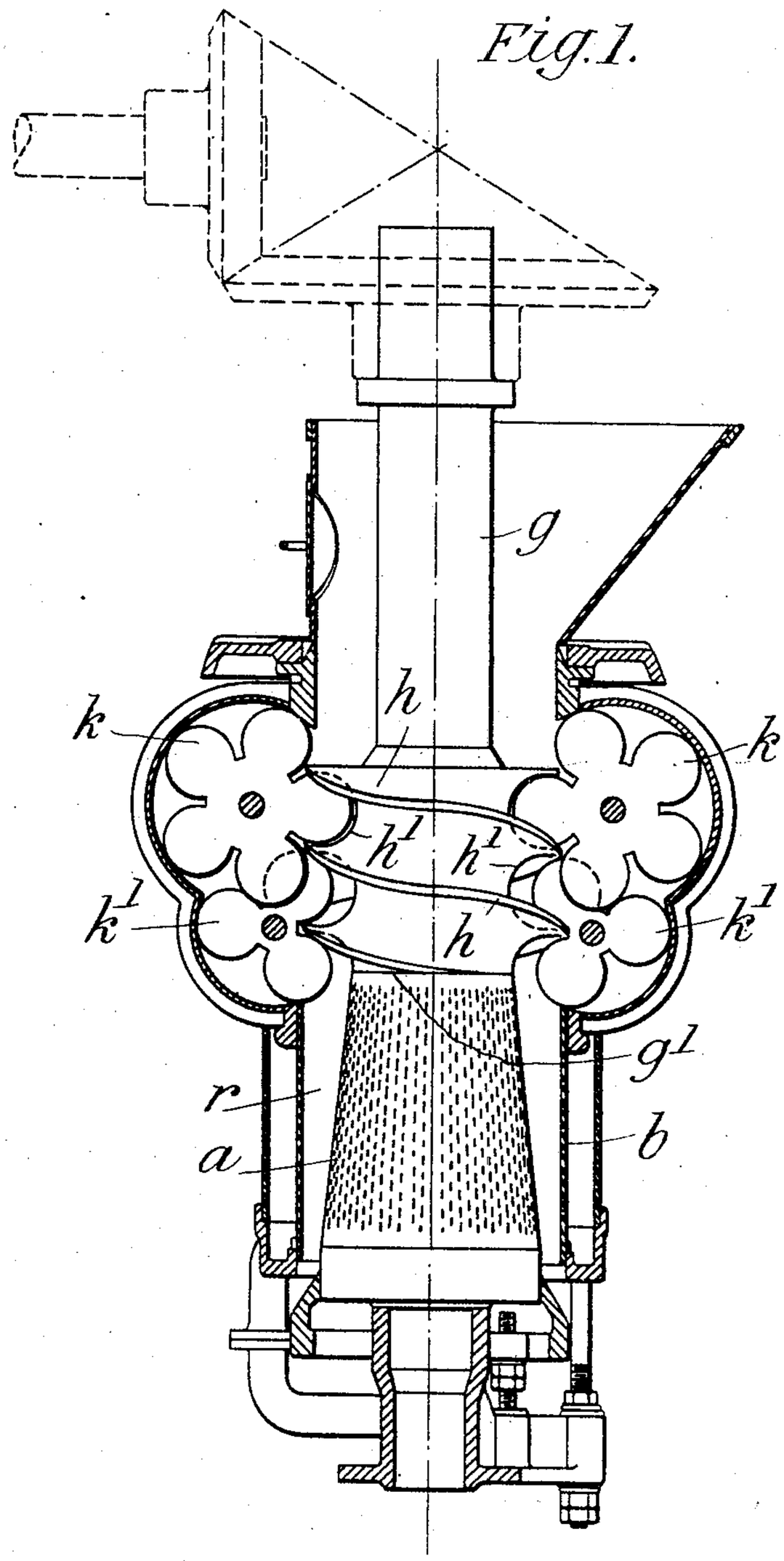
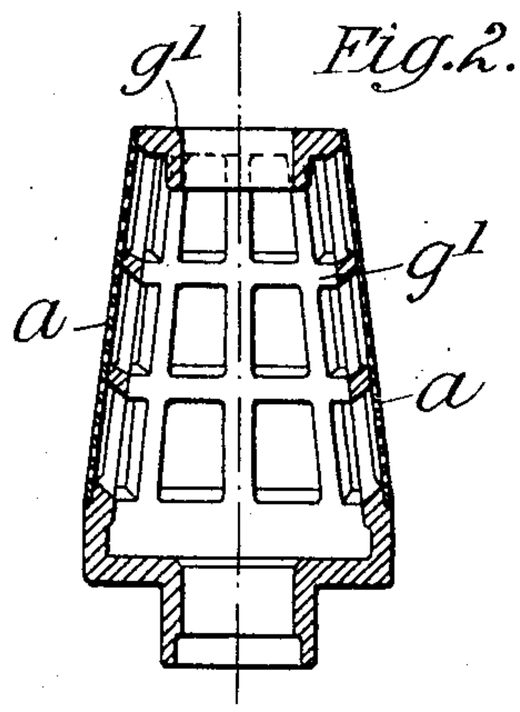


Fig. 2.



WITNESSES

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No. 785,876. Patented March 28, 1905.

UNITED STATES PATENT OFFICE.

GUSTAV GROPP, OF NIEZYCHOWO, NEAR WEISSENHÖHE, GERMANY.

SCREW-PRESS.

SPECIFICATION forming part of Letters Patent No. 785,876, dated March 28, 1905.

Application filed September 18, 1903. Serial No. 173,682.

To all whom it may concern:

Be it known that I, GUSTAV GROPP, a subject of the German Emperor, residing at Zuckerfabrik Niezychowo, near Weissenhöhe an der Ostbahn, Posen, Germany, have invented certain new and useful Improvements in Screw-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a vertical screw-press for pressing the moisture out of sliced beet-roots and similar material in which the conveying elements are so arranged within the body of the press that most effective pressing is insured and at the same time the material most carefully dealt with, so that the loss of material and the soiling of the expressed water caused thereby are reduced to the minimum.

If the material is to be pressed out until the greatest possible degree of dryness is attained without at the same time being damaged—that is to say, crushed or ground—it is necessary not only that the pressing-chamber should become smaller in the same degree as the volume of the material becomes less accordingly as the elimination of water increases, but the conveying element which produces the pressure must be so contrived as to prevent any forcing back of the material when the pressure inside the press increases and not to injure the material. One of the stated requirements is met by existing presses; but in these presses the screw-spindle is furnished from above downward with vanes which are arranged obliquely to the conveying elements and continuously chop the firmly-compressed material, whereby the material is ground at the same time that the pressing-out action is effected.

In the accompanying drawings, Figure 1 is a sectional elevation of a screw-press constructed according to this invention, and Fig. 2 is a vertical section of the inner sieve and its support on which the screw-spindle rests.

The screw-spindle is furnished with only a single conveying element in the form of a solid feeding-screw *h* with several screw-threads, in the spaces *h'* of which shutting-off parts *k k'* engage in the known manner and prevent any forcing back of the material. The actual pressing-chamber *r*, which is formed by the sieve or perforated cylinder *b* and the conical open-work support or bearing *g'* of the screw-spindle furnished with a smooth sieve wall or plate *a*, is without any conveying elements or other projecting parts by means of which damage to the material might be caused. Thereby the material is simply pushed downward by the feeding-screw *h*, arranged above the pressing-chamber, and more and more freed from water in consequence of the gradual diminution of the pressing-chamber. In order to reduce the frictional resistance, and thereby the expenditure of power, the support *g'* of the screw-spindle may be fixed.

Instead of the separate sieves hitherto used and fixed above suitable recesses in the screw-spindle, in the present invention a single sieve-casing *a* is fixed around the support *g'* of the spindle, which part may of course consist of several rings. The employment of a single undivided sieve-casing is, however, preferable, as hereby projecting edges against which the material might be damaged, are avoided.

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

1. A press for sliced beet-roots and the like, comprising a feed-chamber, a solid feeding-screw mounted to rotate in the chamber, rotary shutting-off parts or stops engaging in the spaces between the threads of the screw, a conical open-work support or bearing for the screw, an inner sieve or perforated plate carried on the open-work support, and an outer sieve-casing surrounding the inner sieve, the two sieves being arranged to form a pressing-chamber separate from the feed-chamber and which diminishes downwardly, substantially as described.

2. In a screw-press for pressing sliced beet-roots or the like in which the beet-roots are fed into a pressing-chamber, a pressing device consisting of a rotary screw-spindle and a fixed conical bearing for the screw arranged to form

the inner wall of the pressing-chamber, substantially as described.

3. In a screw-press for pressing sliced beet-roots or the like, a pressing device consisting of a rotary screw-spindle, and a fixed conical open-work support in which the screw-spindle is guided, and an undivided or smooth sieve-casing arranged on the open-work support, and forming the inner wall of the pressing-chamber, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

GUSTAV GROPP.

Witnesses:

HENRY HASPER,

WOLDEMAR HAUPT.