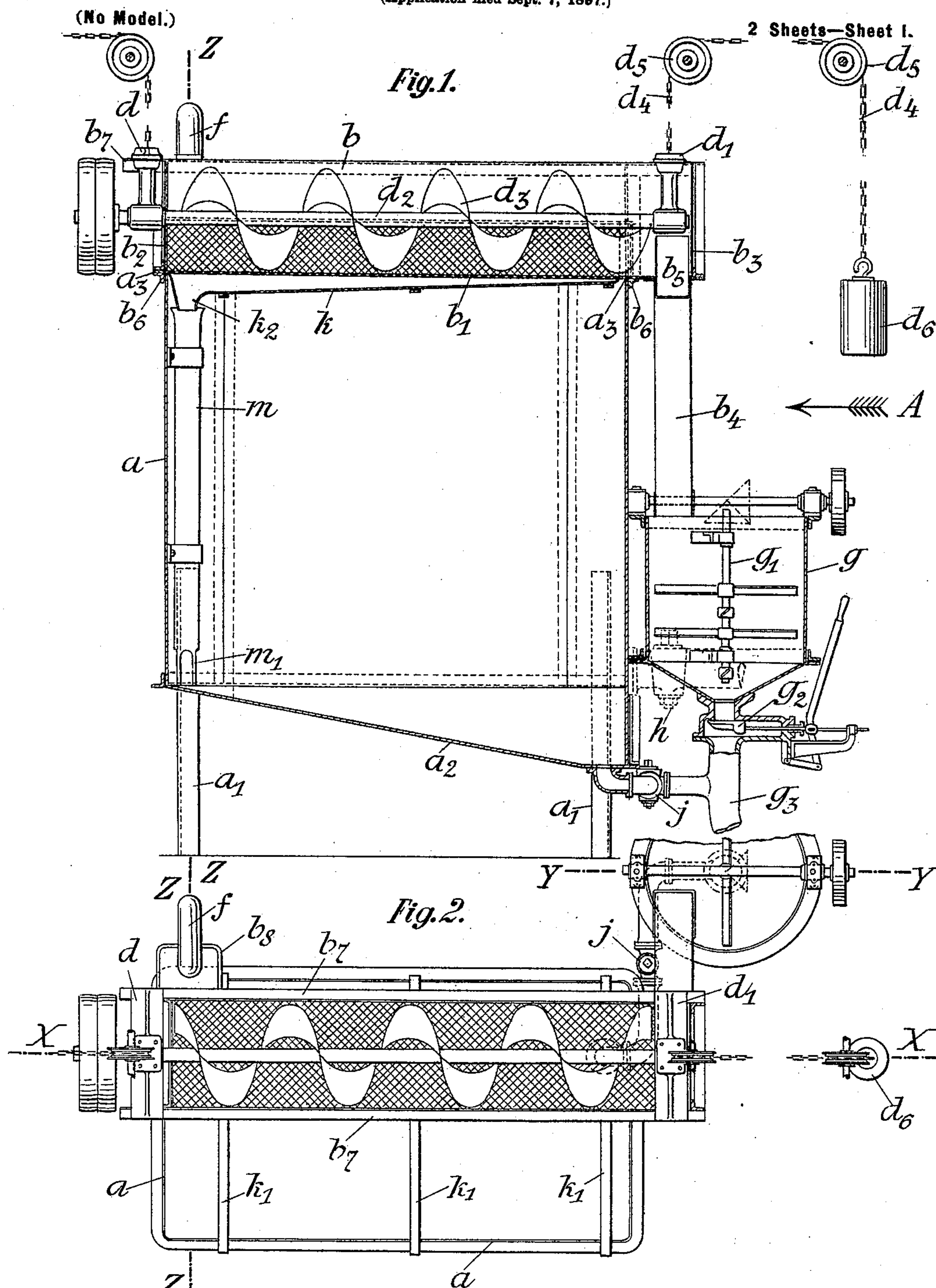


No. 614,498.

Patented Nov. 22, 1898.

L. PROCHAZKA.
CONTINUOUSLY ACTING STRAINING APPARATUS.

(Application filed Sept. 7, 1897.)



Witnesses.
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Josef Prochaska

Inventor.
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Attorney

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(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

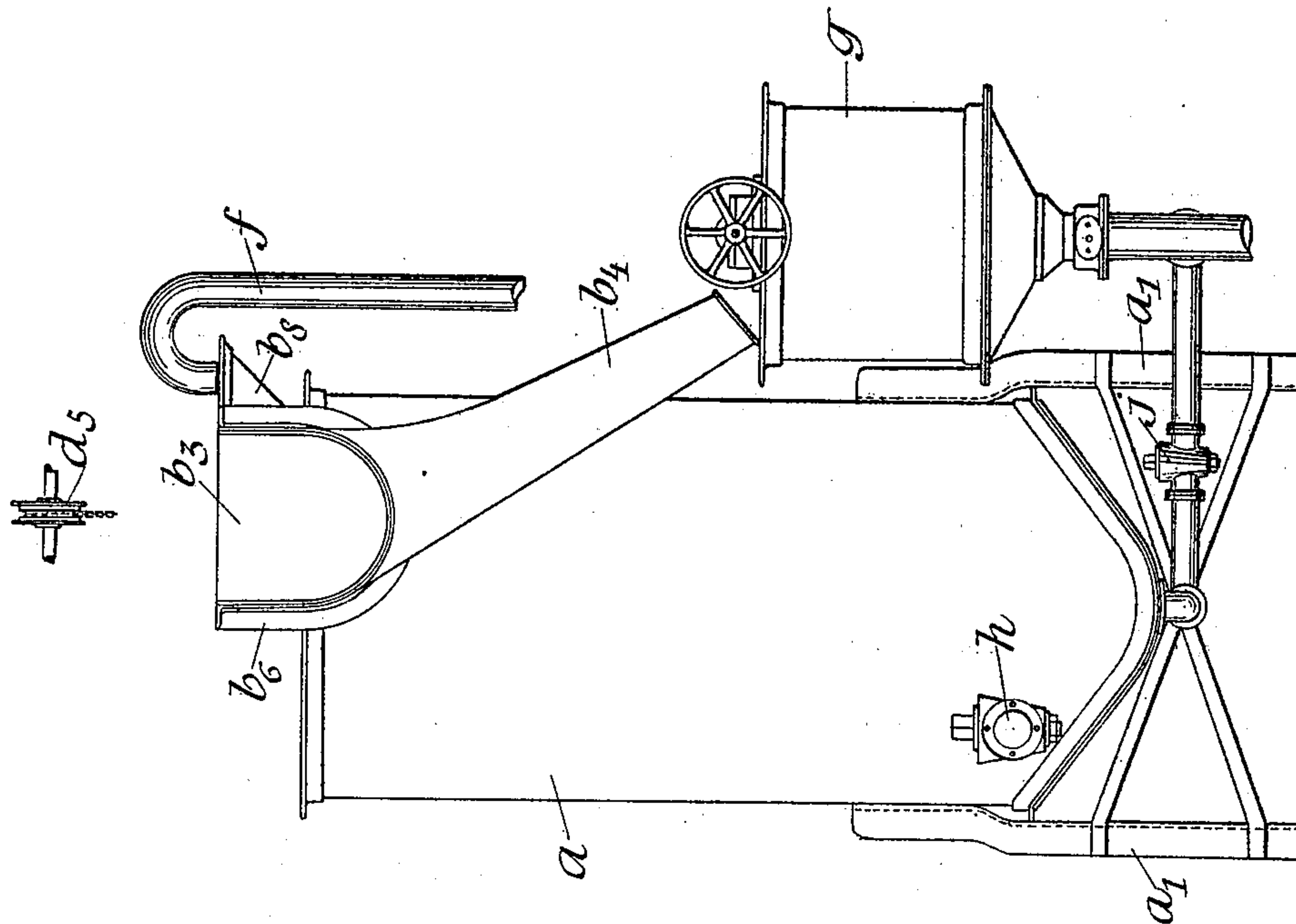
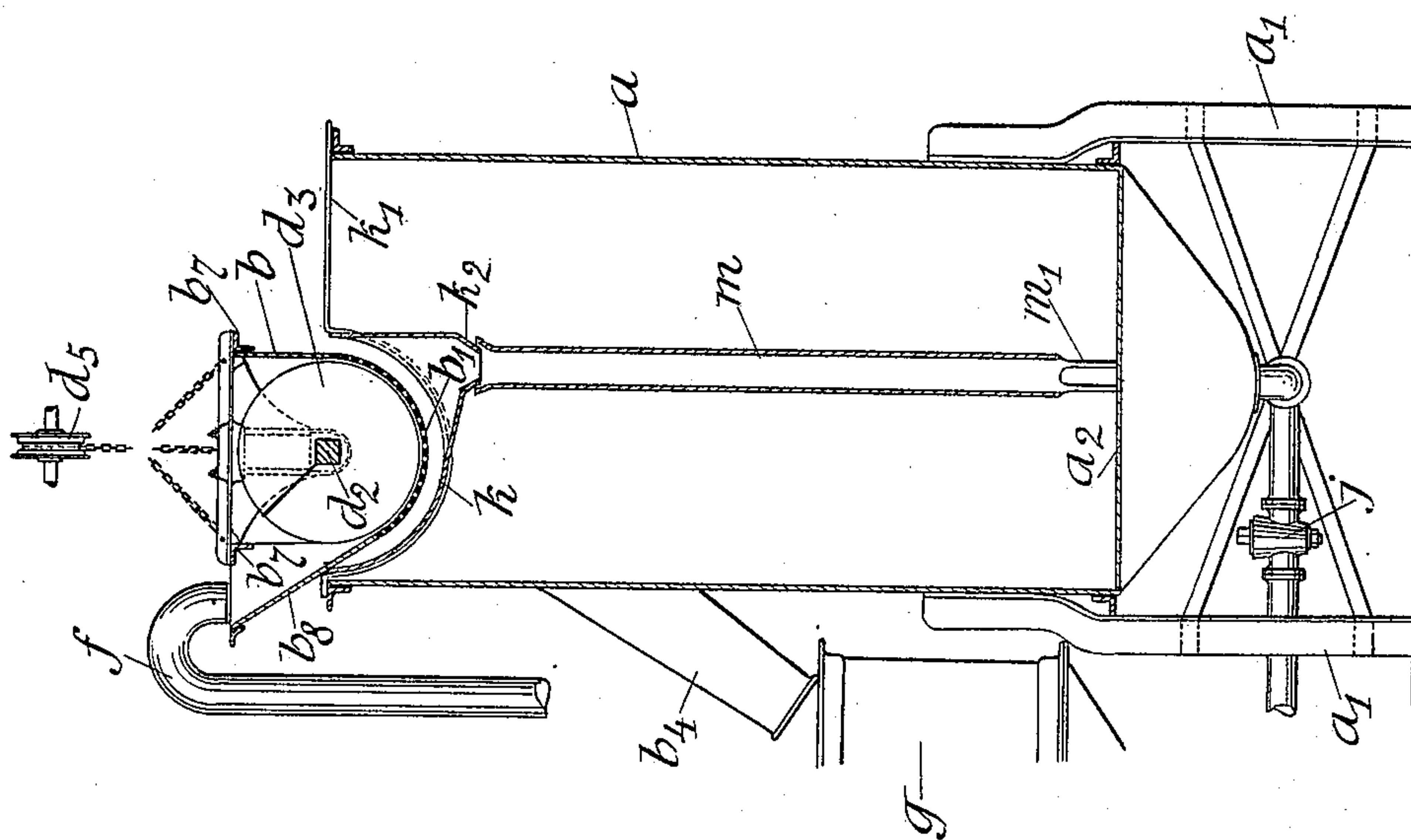


Fig. 3.



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UNITED STATES PATENT OFFICE.

LADISLAUS PROCHÁZKA, OF TURNAU, AUSTRIA-HUNGARY.

CONTINUOUSLY-ACTING STRAINING APPARATUS:

SPECIFICATION forming part of Letters Patent No. 614,498, dated November 22, 1898.

Application filed September 7, 1897. Serial No. 650,810. (No model.)

To all whom it may concern:

Be it known that I, LADISLAUS PROCHÁZKA, a subject of the Emperor of Austria-Hungary, residing at Turnau, in the Province of Bohemia, in the Austro-Hungarian Empire, have invented new and useful Improvements in Continuously-Acting Straining Apparatus, of which the following is a specification.

My invention relates to apparatus by means of which the bulk of the liquid contained in pulpy masses, such as beer-mash, can be separated from the rest, and more especially to that class of such apparatus in which the pulp is caused, by means of a suitable conveyer, to move over a sieve. Strainers of this description have been made hitherto with a revolving drum or cylinder made of wire fabric and containing either a screw conveyer turning in the opposite direction or helical ribs secured to the sides of the drum. The objection to this arrangement is that the cleansing of the drum is rather difficult; and my invention has for its object to remedy this defect.

According to my invention the revolving drum is replaced by a fixed gutter or trough provided with a sieve-bottom of semicylindrical shape, made, by preference, of slotted sheet metal. Upon both ends of the said gutter or trough suspension-brackets for the bearings of the shaft of a screw conveyer are removably mounted, and the said brackets are connected with counterweights by means of chains passing over pulleys. With this arrangement after undoing the connection between the brackets and trough the brackets, with the shaft and conveying-screw, can be lifted, and both the trough and screw can be easily cleaned.

In order to make my invention fully understood, I shall hereinafter describe the same in detail with reference to the accompanying drawings, in which—

Figure 1 is a sectional side elevation of my continuously-acting strainer on lines X X and Y Y, Fig. 2. Fig. 2 is a top view of the apparatus; Fig. 3, a vertical section on line Z Z, Figs. 1 and 2; and Fig. 4, an end elevation looking in the direction of the arrow A in Fig. 1.

Referring to the drawings, a is a sheet-iron tank supported by angle-iron legs a' and having an inclined bottom a^2 . The iron sheets

of which the sides of the tank a are made do not overlap each other at their edges, but have their butt-joints covered by flat bars riveted to both sheets, as indicated by dotted lines in Fig. 1. Both end walls of the said rectangular sheet-iron tank a have semicircular recesses a^3 formed in their top portion in order to admit of the insertion of a correspondingly-shaped trough b , having a sieve-bottom b' , made of slotted sheet metal. As the said semicircular recesses a^3 of the end walls of the tank a are formed near one lateral wall, (see Fig. 3,) the trough b covers but one-half of the open top of the tank, and free access to the inside of the latter is kept up for cleaning purposes.

Both ends of the trough b are closed by sheet-metal walls b^2 and b^3 , respectively, while the end of the trough above the higher edge of the inclined bottom a^2 is flush with the end wall of the tank a the other end of the trough, located over the lower edge of the inclined bottom a^2 , protrudes beyond the end wall of the tank, in which it is embedded, and has a drain or chute b^4 , riveted under an aperture b^5 , formed in the bottom of its protruding portion. Angle-irons b^6 , riveted to the ends of the tank a and to the bottom of the trough b , serve for connecting both parts.

The lateral edges of the sieve-bottomed trough b are stiffened by angle-irons b^7 , Fig. 3, projecting beyond the end of the trough flush with the end wall of the tank a . Upon the ends of the said angle-irons b^7 rest suspension-brackets d and d' , respectively, for the shaft d^2 of a screw conveyer d^3 . The said brackets are removably connected with the angle-irons b^7 by means of bolts and nuts or in any other well-known way. Chains d^4 run from the bearings d and d' upward over suitably-arranged pulleys d^5 and carry weights d^6 . By this means possibility is afforded for lifting the brackets d and d' , with the shaft d^2 and screw conveyer d^3 , out from the trough b when it is desired to clean the trough and conveyer.

At b^8 the trough b is widened to form a kind of inlet-funnel, over which a pipe f is shown, through which the pulpy mass arrives, 2 and 4.

It will be readily understood that the pulp flowing in through the funnel b^8 and being

carried along by the screw conveyer d^3 parts with the bulk of its liquid constituents, which pass through the sieve-bottom b into the tank a , while the wet solid remains are delivered through the chute b^4 .

The drawings show below the chute b^4 a vat g , provided with a stirrer g' and closed at its bottom by a sliding valve g^2 . This vat g and stirrer g' , which are used in cases when it is required again to dilute the strained pulp, form no part of the invention.

It is obvious that the liquid having passed through the sieve-bottom of the trough b and accumulated in the tank a yet contains small solid bodies, and it is often required to eliminate these solid matters by sedimentation and decantation. In order to admit of this, the tank a is provided with an inclined bottom a^2 , as already described, and there are two outlet-cocks—viz., a cock h , Fig. 4, arranged at a certain height above the lowest point of the bottom, for drawing off the clear liquid, and a cock j , located below the bottom, for drawing off the sediment. The pipe into which this latter cock j is interposed empties for obvious reasons into the discharge-pipe g^3 of the vat g .

For preventing the liquid which trickles down through the sieve-bottom b' of the trough b from stirring up the liquid in the

tank a , and thus retarding sedimentation, a gutter k , Fig. 1, supported by braces k' , so as to be slightly inclined toward the higher end of the bottom a^2 , is arranged below the trough b and has its lower end made up into a snout k^2 , below which a vertical pipe m extends to the bottom a^2 . The slots m' in the bottom end of the pipe m allow the liquid to flow out freely.

What I claim, and desire to secure by Letters Patent of the United States, is—

In a continuously-acting straining apparatus, the combination with a sieve-surface and a conveyer adapted to move the mass to be strained over the sieve-surface of a tank arranged below the sieve-surface and having an inclined bottom and two outlets at different levels, a gutter so arranged below the said sieve-surface as to be inclined toward the higher end of the bottom and a pipe extending from the lower end of the gutter to the bottom, substantially as and for the purpose described.

In witness whereof I have signed this specification in presence of two witnesses.

LADISLAUS PROCHÁZKA.

Witnesses:

VICTOR KERPL,
HARRY BELMONT.