

No. 749,326.

PATENTED JAN. 12, 1904.

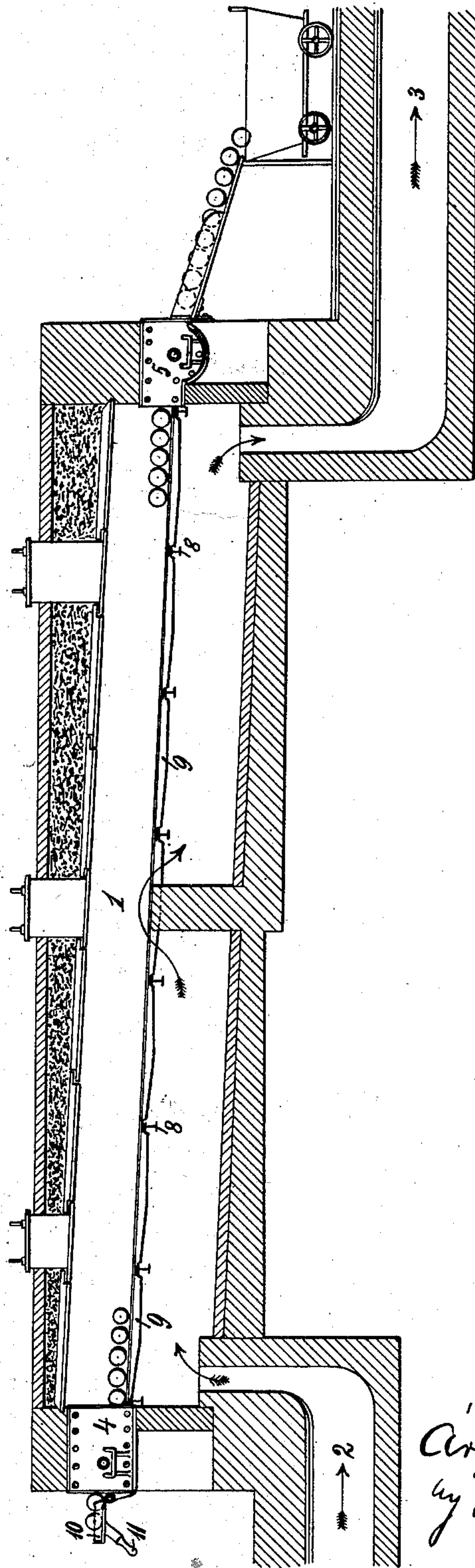
A. RONAY.
DRYING AND ANNEALING STOVE.

APPLICATION FILED FEB. 9, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
L. S. Noble
L. H. Aldman

Inventor
Arpád Ronay
by *B. Singer*
Att'y.

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3 SHEETS—SHEET 2.

Fig. 3.

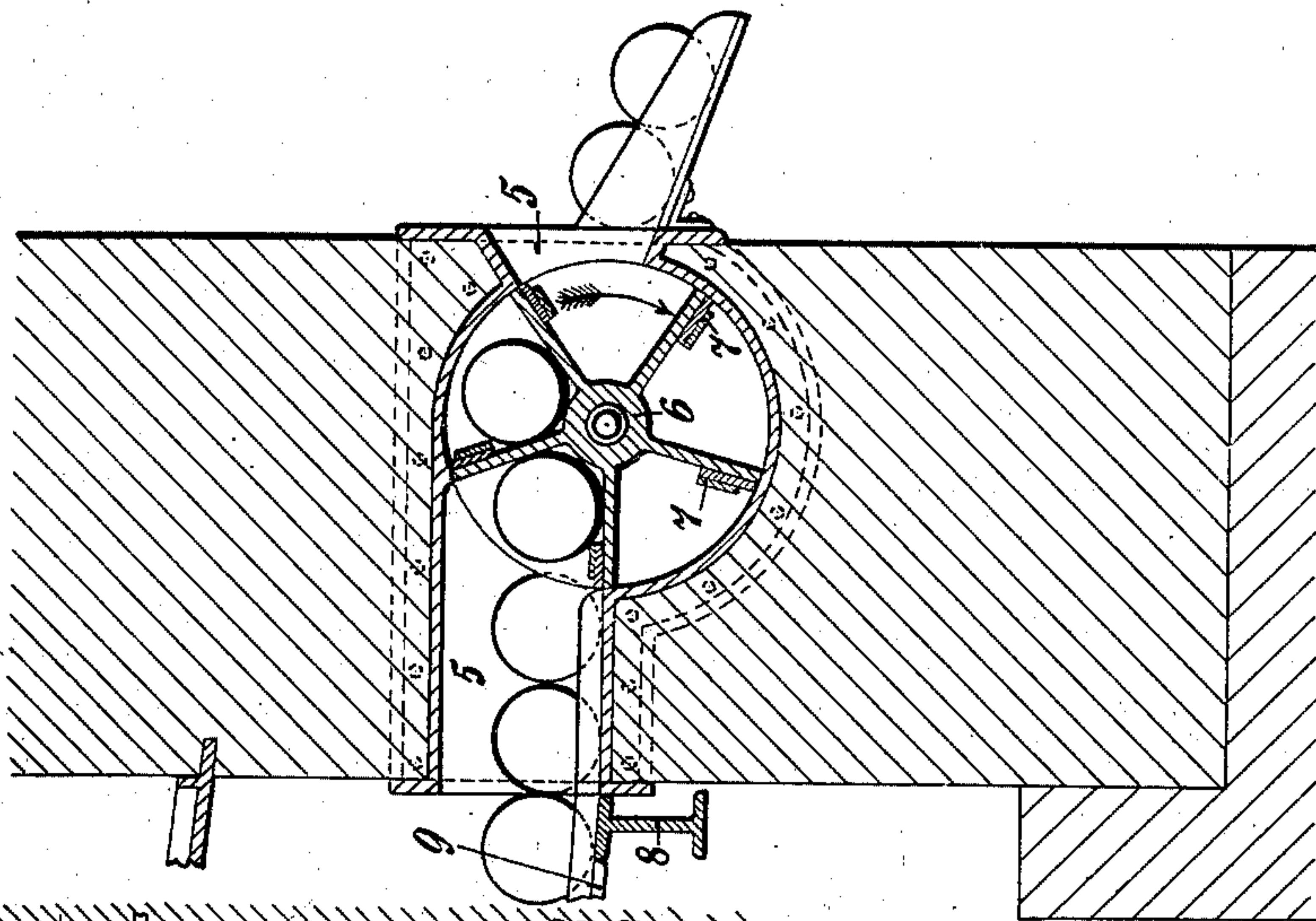


Fig. 4.

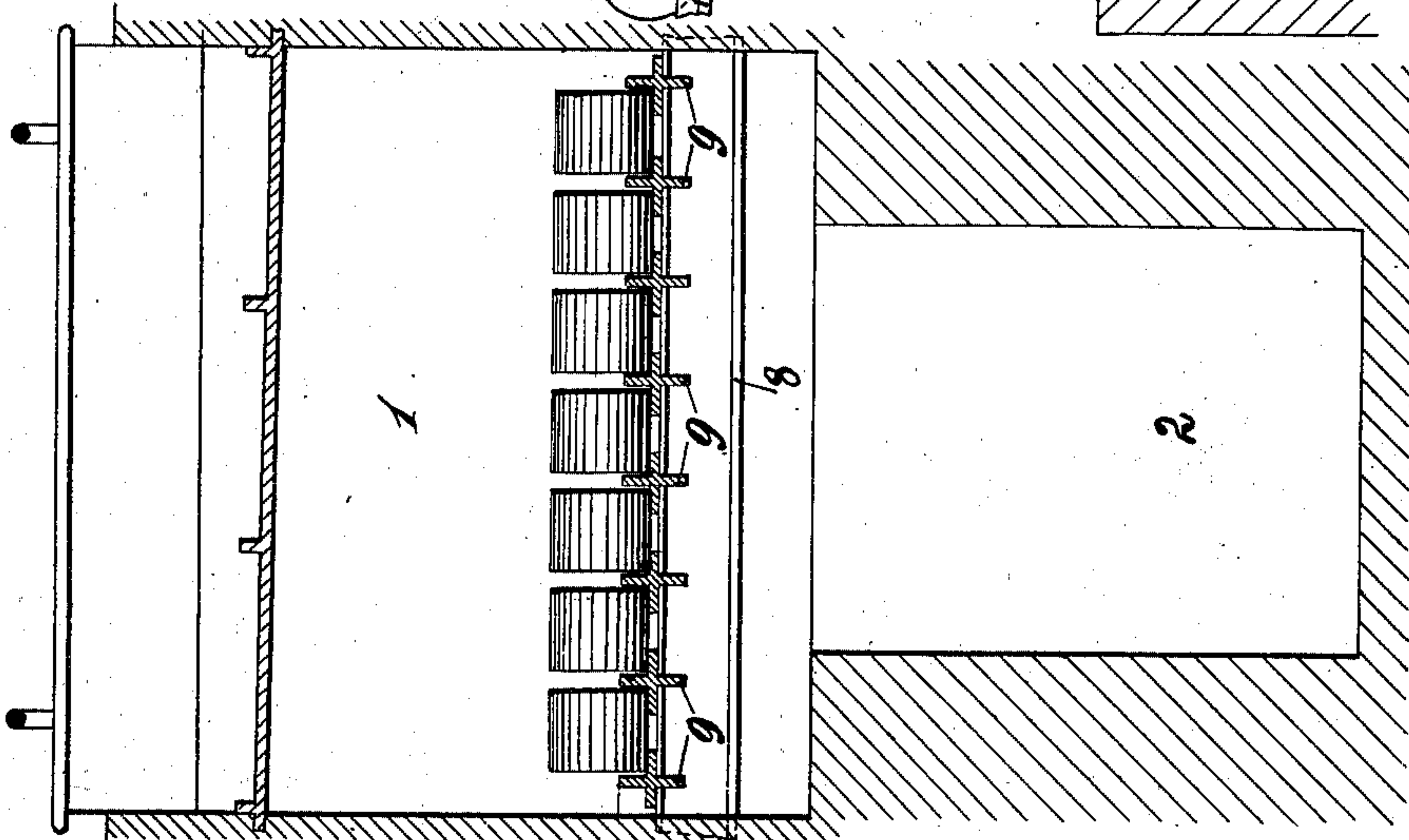
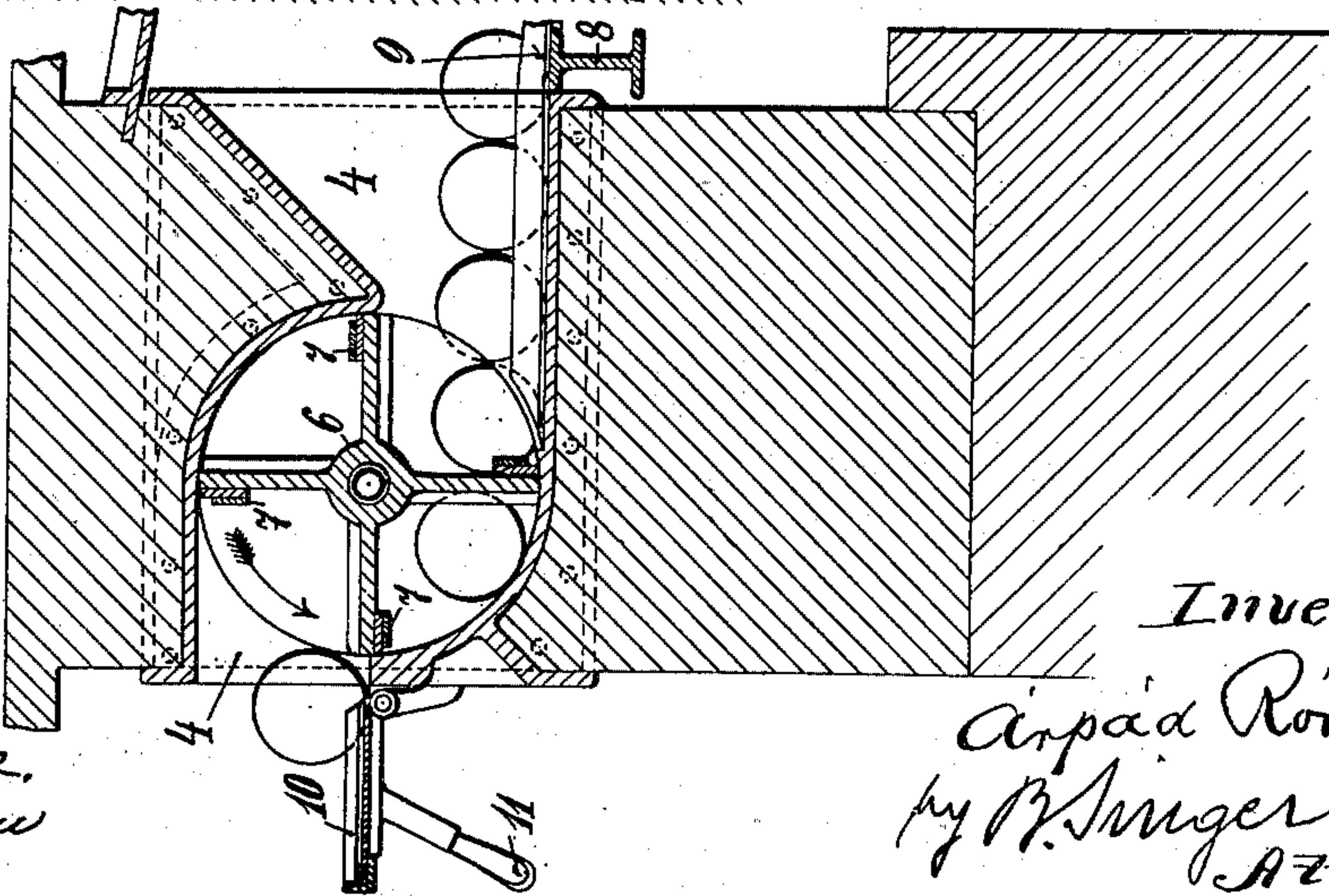


Fig. 2.



Witnesses:
Les Noble,
W. Kaldman

Inventor;
Arpad Ronay
by B. Singer
Att'y

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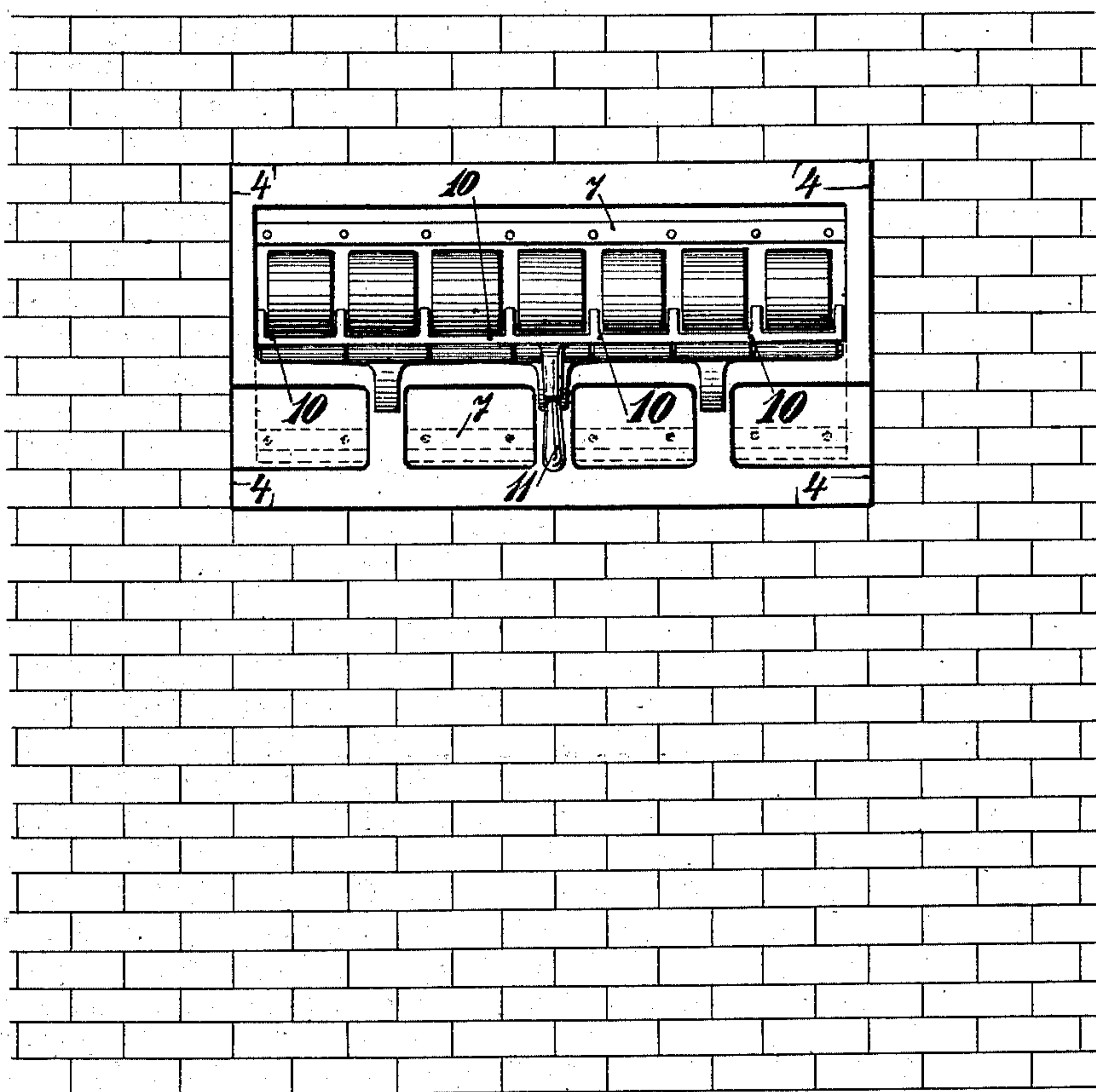
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DRYING AND ANNEALING STOVE.

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NO MODEL.

3 SHEETS—SHEET 3.

Fig. 5.



WITNESSES:

Frank Jones
H. Kaldman

INVENTOR:

Árpád Rónay
BY *B. Singer* ATTORNEY

UNITED STATES PATENT OFFICE.

ÁRPÁD RÓNAY, OF BUDAPEST, AUSTRIA-HUNGARY.

DRYING AND ANNEALING STOVE.

SPECIFICATION forming part of Letters Patent No. 749,326, dated January 12, 1904.

Application filed February 9, 1903. Serial No. 142,505. (No model.)

To all whom it may concern:

Be it known that I, ÁRPÁD RÓNAY, director, of 95 Váci út, Budapest, in the Empire of Austria-Hungary, have invented new and useful improvements in or relating to drying and annealing stoves or chambers for all kinds of minerals or briquets, bricks, and other mineral products of regular shape, of which the following is a specification.

10 This invention relates to a stove or chamber which is suitable for the drying, annealing, or chemical treatment of minerals, ores, mineral coal, &c., briquets, bricks, and other mineral products of regular shape by means
15 of hot air, gas, or steam, the charging of such chamber with the materials to be treated and the emptying thereof being effected by means of drums rotating or oscillating around their own longitudinal axes and furnished with suitable compartments for receiving the materials of regular or irregular shape, which drums, owing to their internal construction, constantly close the feed and discharging hoppers. The feed and discharge
20 hoppers are connected in the interior of the chamber by means of a construction which is suitable for continuous or intermittent conveyance of the material and which may consist merely of a suitable inclined plane on which
30 the material slides or rolls under the action of gravity, and thus automatically reaches the discharging device.

In the accompanying drawings a drying or annealing chamber for cylindrical briquets is illustrated by way of example.

Figure 1 is a longitudinal vertical section with side elevation of the feed and discharging device. Figs. 2 and 3 are detailed transverse vertical sections of the above-mentioned
40 feed and discharging device on a larger scale. Fig. 4 is a transverse vertical section of the stove through the inlet-passage, likewise on an enlarged scale. Fig. 5 is an end view showing the feeding apparatus.

45 The stove is formed by means of a chamber suitably bricked, around which the gases employed for drying or annealing enter through the passage 2, passing out again through the passage 3 in the direction indicated by the arrows.
50

The cast-iron feed-hopper 4 and discharge-hopper 5 are built in the brickwork in the two ends of the chamber. The forms of these hoppers are seen in Figs. 2 and 3. In the cylindrical parts of these hoppers is a drum 6, 55 which rotates around its own horizontal longitudinal axis and is furnished with compartments the ends of the radial wings of which are furnished with a suitable asbestos packing device 7. The number of these radial arms
60 or wings is such that during the rotation of the drums in the direction of the arrows (see Figs. 2 and 3) the closing of the passage through the hopper is insured by at least one arm.
65

Between the above-described feed and discharging devices, each formed of a hopper 4 and 5 and of the drum 6, belonging thereto, is an inclined plane running lengthwise of the chamber and furnished with guide-grooves 70 corresponding to grooved compartments in the hoppers. As seen from Fig. 4, the inclined plane consists of fire-bars 9, supported by iron bearers 8, which thus form together
75 a system of grooves. The chamber illustrated by way of example is intended for drying and annealing cylindrically-shaped briquets, and in this case the briquets are conveyed by means of the above-described firm and inclined plane
80 provided with feed-grooves.

The arms of the drum 6 and the inclined plane are divided in the present instance into seven guide-grooves. Consequently the feed-table 10, attached to the feed-hopper 6 by means of hinges and furnished with a tip-
85 ping-lever 11 for the purpose of being more easily handled, as well as the outlet and inlet passages of the hoppers, have each seven grooves. In this manner the seven briquets which roll into the slowly-rotating drums
90 through the periodical tilting of the table 10 first enter the corresponding grooves of the feed-hopper 4, whence they are gently pushed into the passages of the inclined plane by the following arms of the drum, and now, assum-
95 ing that the chamber is constantly filled and in action, roll along slowly to the discharge-hopper 5, which constantly conveys seven briquets through the passages, likewise arranged here, into a compartment of the discharging-
100

drum. These compartments of the discharging-drum are only made for the reception of seven briquets each at a time and discharge the briquets through a groove onto the inclined plane, from which they roll into the truck placed beneath.

The length of the chamber and the rotary speed of the drums must be in suitable proportions in order that all the briquets may be exposed for the necessary time to the gases or annealing action, in connection wherewith the chamber must remain constantly filled, so as to insure complete continuous working. The number of revolutions of the feed-drum must be at least the same as or greater than that of the discharging-drum. The latter arrangement is preferable, as in feeding it is not necessary that all the grooves should be constantly filled, and, on the other hand, it is good to be able to fill the chamber quickly when the work is started.

As seen herefrom, it is advisable to make the rotary speed of the discharge-drum adjustable or terminable by means of suitable driving mechanism during the working, so that the chamber may be always kept filled, as requisite for a continuous uniform working.

The working is begun by first entirely filling the chamber while the discharge-drum is stationary and then after the briquets introduced last have been exposed for a sufficient time to the drying or annealing process or other necessary chemical actions setting the discharging-drum and the feed-drum in motion simultaneously.

The chamber may of course be swept by hot air, smoke-gases, or burning gases and with steam or other gases, the action of which on the briquets is desirable. Thus the material for and the external and internal construction of the chamber, as well as the material most suitable for the working parts most liable to damage, will be selected according to the nature of the medium employed.

Moreover, the feed and discharge device may be made in the most varied forms suitable to the particular purpose. The principal point is that the inlet-opening must be closed as soon as the outlet-opening begins to open out of the apparatus into the chamber, and the discharging device must also be constructed in accordance with this principle.

The openings in the top of the chamber are intended to enable the chamber to be freed from time to time from particles of dust, &c.

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

1. In an apparatus of the nature set forth, the combination of a chamber, passage-ways in said chamber, cylindrical inlet and discharge apertures for said chamber, shafts rotatably mounted in said apertures, radial plates secured to said shafts and adapted to close said apertures at all times, and packing-strips on said plates adapted to engage the walls of said apertures.

2. In an apparatus of the kind set forth, the combination of a chamber, inlet and outlet orifices in said chamber for gases or the like, an inclined plane in said chamber, grooves formed in said plane, cylindrical inlet and outlet apertures at the ends of said plane, feeding and discharge devices in said apertures comprising radial plates and shafts to which said plates are secured, said shafts being rotatably mounted in said apertures, compartments formed in said plates, corresponding with the grooves in said inclined plane, and a hinged feed-table adjacent to said feed device and adapted to discharge into the same, substantially as described.

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

ÁRPÁD RÓNAY.

Witnesses:

JOSEPH WIEKMANN,
LOUIS VÁNDORY.