

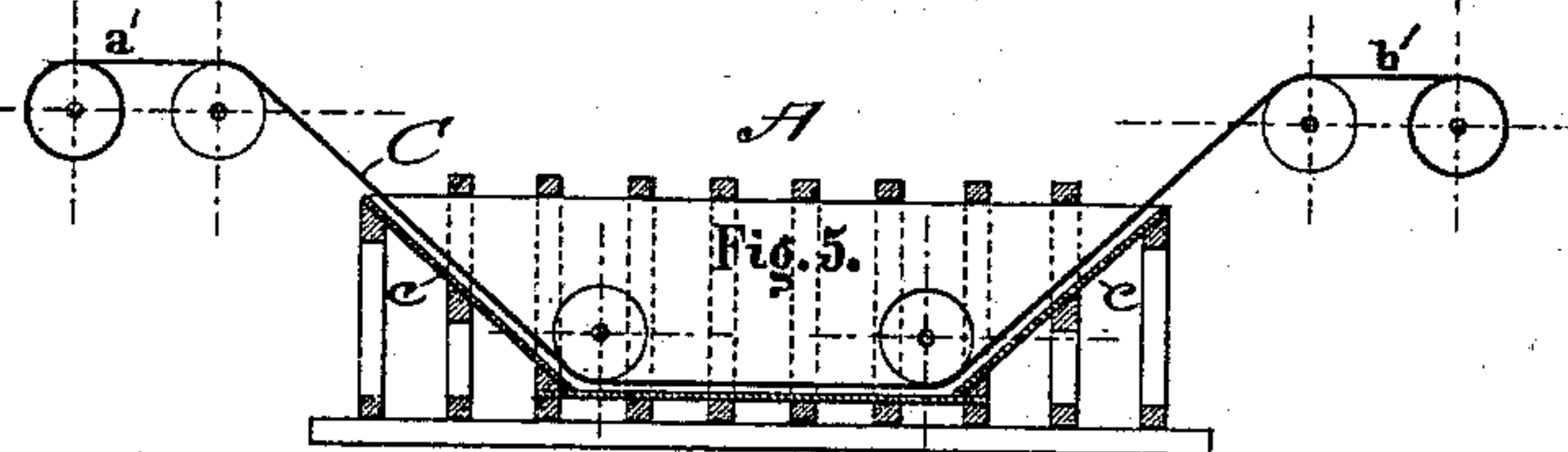
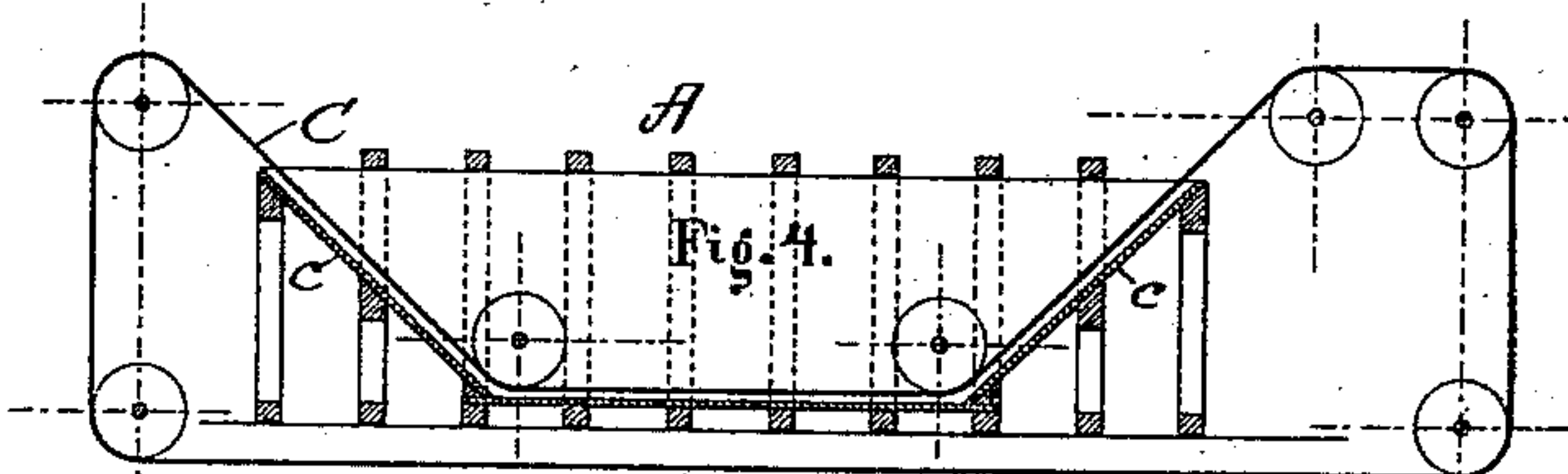
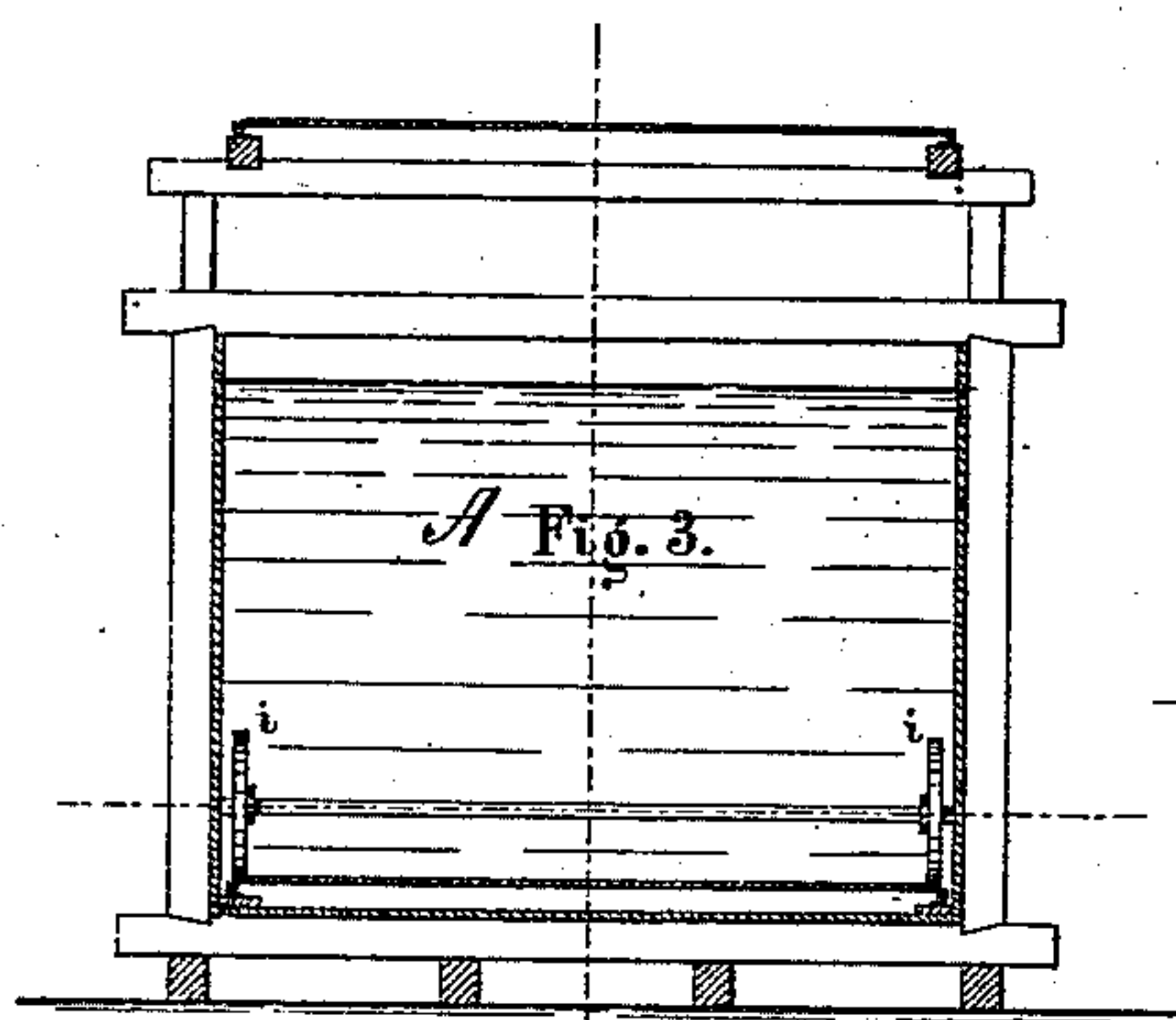
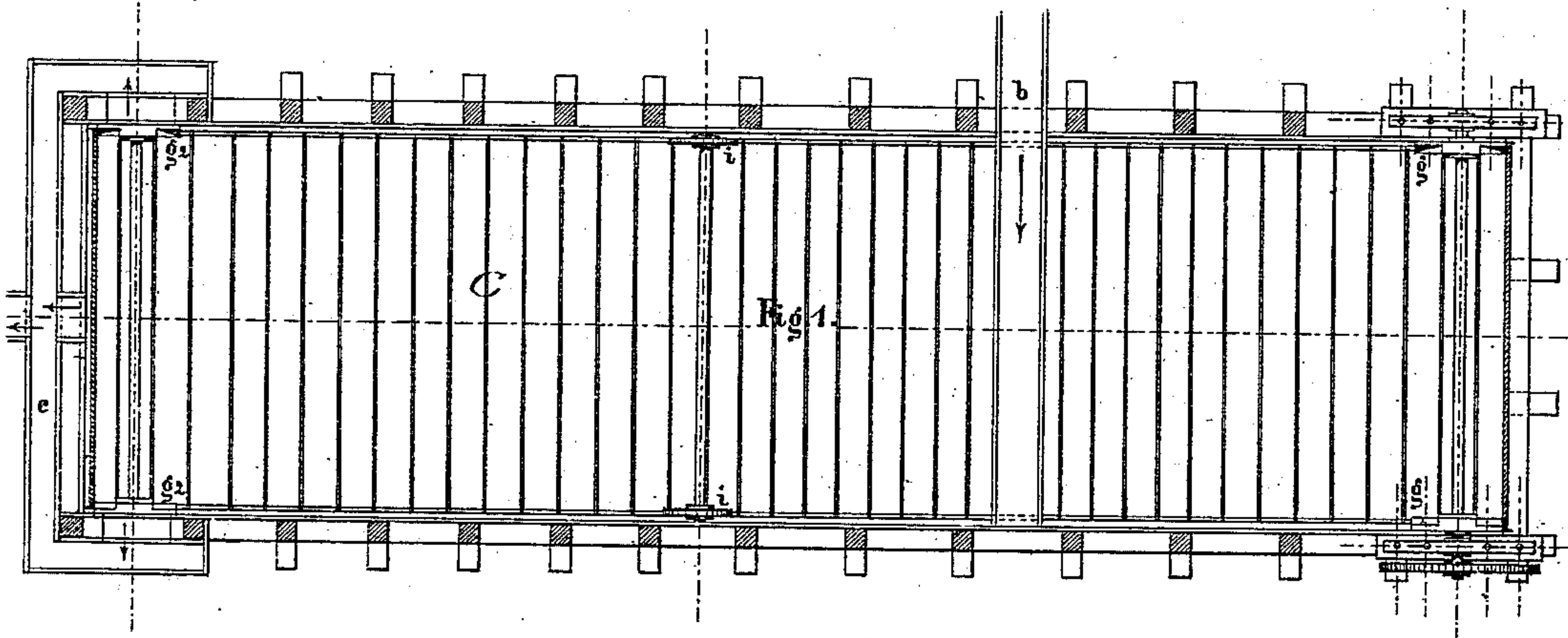
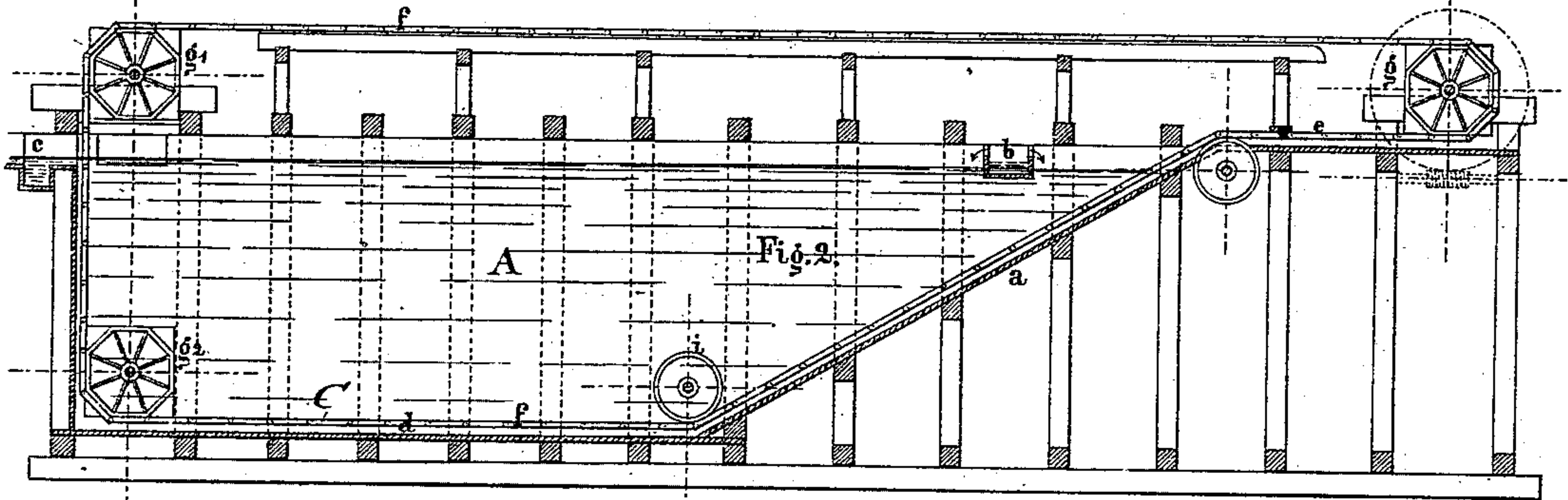
(No Model.)

G. BACHER.

APPARATUS FOR DEPOSITING AND COLLECTING SEDIMENTS OR
PRECIPITATES.

No. 277,191.

Patented May 8, 1883.



Attest:
F. L. Middleton
David H. Mead

Inventor:
Gottfried Bacher
By Ellis Spear
Atty

UNITED STATES PATENT OFFICE.

GOTTFRIED BACHER, OF KLDNO, AUSTRIA-HUNGARY.

APPARATUS FOR DEPOSITING AND COLLECTING SEDIMENTS OR PRECIPITATES.

SPECIFICATION forming part of Letters Patent No. 277,191, dated May 8, 1883.

Application filed September 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, GOTTFRIED BACHER, director of mines of the town of Kladno, in Austria-Hungary, have invented certain new and useful Improvements in Apparatus for Depositing and Collecting Sediments or Precipitates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The chief novel feature of this invention consists in the combination, with a suitable vessel, of a movable and transportable bottom, which is conducted through the vessel containing the fluid, at a distance slightly above the bottom of the same, and afterward led out of the vessel up the side of the same in a slanting or inclined direction. At the same rate as the movable bottom, with the sediment upon it, leaves the one side of the vessel or receptacle, an empty bottom enters at the other side, so that the bottom of the receptacle is always covered by a movable or sliding bottom, whether the operation is carried out continuously or with interruptions. As the sliding bottom has to move in varying directions, it must be made flexible. It can be made of various materials—for instance, iron, steel, wood, caoutchouc, felt, web fabric, or other suitable material—and can be constructed as an endless band, or as a band with ends with or without an edge or border. The surface of the same can, according to the character of the sediment, be made smooth, uneven, rough, milled, or provided with laths, pervious or impervious to water. In order to cause the transportable or movable bottom to move in the proper direction, guides are arranged, which said guides consist of round, polygonal, or other rollers, or a combination of such said rollers. The motion of the sliding bottom can be effected by hand or by a machine at intervals or without interruption. The removal of the sediment or precipitate from the sliding bottom can be done by hand or by a suitable mechanical arrangement. The sediment can also be dried while it is upon the band or sliding bottom by exposing it to the air; or an artificial drying can be produced by causing the band or sliding bottom to pass through warmed chambers or apartments.

The angle at which the endless belt or bottom leaves the liquid depends somewhat upon the fineness and quality of the precipitate, and may be changed to suit various requirements and different uses.

For the purpose of more clearly defining my invention, the same is explained with reference to the accompanying drawings, in which three different modifications are shown. Figure 1 shows a plan; Fig. 2, a longitudinal section; Fig. 3, a cross-section.

A is the vessel or receptacle for the sedimentary fluid, and consists of a right-angled tank or cistern whose length is greater than its breadth. *a* is the slanting side or end. The fluid containing the sediment enters at the spout *b* and flows along the tank toward the outlet *c*, where it flows off in a clear state, having previously had time to deposit its sediment. The sediment is collected on the sliding bottom *C*, and is transported out of the receptacle by means of the same, and is removed from this said bottom in the neighborhood of *e* by hand or by means of a suitable apparatus. The emptied bottom returns round the rollers *g g'*, descends through the clear fluid, and, after passing the roller *g''*, is again in a position to receive the sediment. In this arrangement the sliding bottom consists of an endless band, which is constructed of two angle-iron chains, *f f*, upon every two links of which narrow boards are fixed, which said boards butt one against the other, and so form one continuous bottom, which can at the same time easily move around the desired course. The three principal curves of the band are effected, as stated, by the rollers *g g' g''*, which consist of pairs of octagonal disks, around which the angle-iron chains turn. The space between each pair of disks remains unoccupied, so that the boards can pass without being crushed. The tension of the band is principally in the chains, and the strain exerted by the octagonal disks is transferred only to the chains. The motion of the band or sliding bottom is effected by means of a screw and worm-wheel, which latter is fixed to the same axle as the disk *g*. For guiding the sliding bottom at that point where it quits the horizontal plane to ascend the incline, small rollers or disks *i* are employed, which also come only into contact with the

two chains, permitting free passage of the boards and the sediment on the same.

Fig. 4 shows a modification of the method of guiding the movable bottom. In this case the vessel or receptacle A is provided at both ends with an inclined plane, C, so as to enable the sediment to be conducted out at either end. In this case the movable bottom returns underneath the vessel or receptacle.

Fig. 5 shows another modification, where the moving bottom or band has ends. The two rollers *a'* and *b'* serve alternately as draft-rollers, and thus the band or bottom works to and fro, being wound alternately round the rollers *a'* *b'*, and the sediment is ejected first at one end of the tank and then at the other. It will thus be seen that the carrying out of the sediment can be effected during the sedimentary process without disturbing the same, whether the water is in motion or stagnant. This arrangement is also serviceable when it is desired to remove the sediment in the absence of the fluid.

These improvements are applicable for every process of obtaining sediments or precipitates which may occur in any branch of industry, and can be carried out on the smallest or most

extensive scale. The arrangement is, however, specially adapted to the preparation or washing of ores or coal, and if several superposed bands or movable bottoms having interstices or perforations of various sizes are employed, sediments or precipitates of various degrees of fineness can be obtained.

Having now described my said invention and the manner in which the same is to be carried into effect, I claim and desire to have secured by Letters Patent—

1. Combined with the tank A, the movable belt having horizontal and inclined portions, upon which the sediment is deposited, and means for revolving said belt, so as to withdraw the precipitated sediment from the tank.

2. Combined with the tank having inlet and outlet liquid-openings, a false bottom mounted upon rollers and adapted to remain stationary and partially submerged within the tank while the sediment is being deposited, and to be withdrawn with such deposit, substantially as described.

GOTTFRIED BACHER.

Witnesses:

EDWIN A. BRYDGES,
JOHN O. TONKIN.