

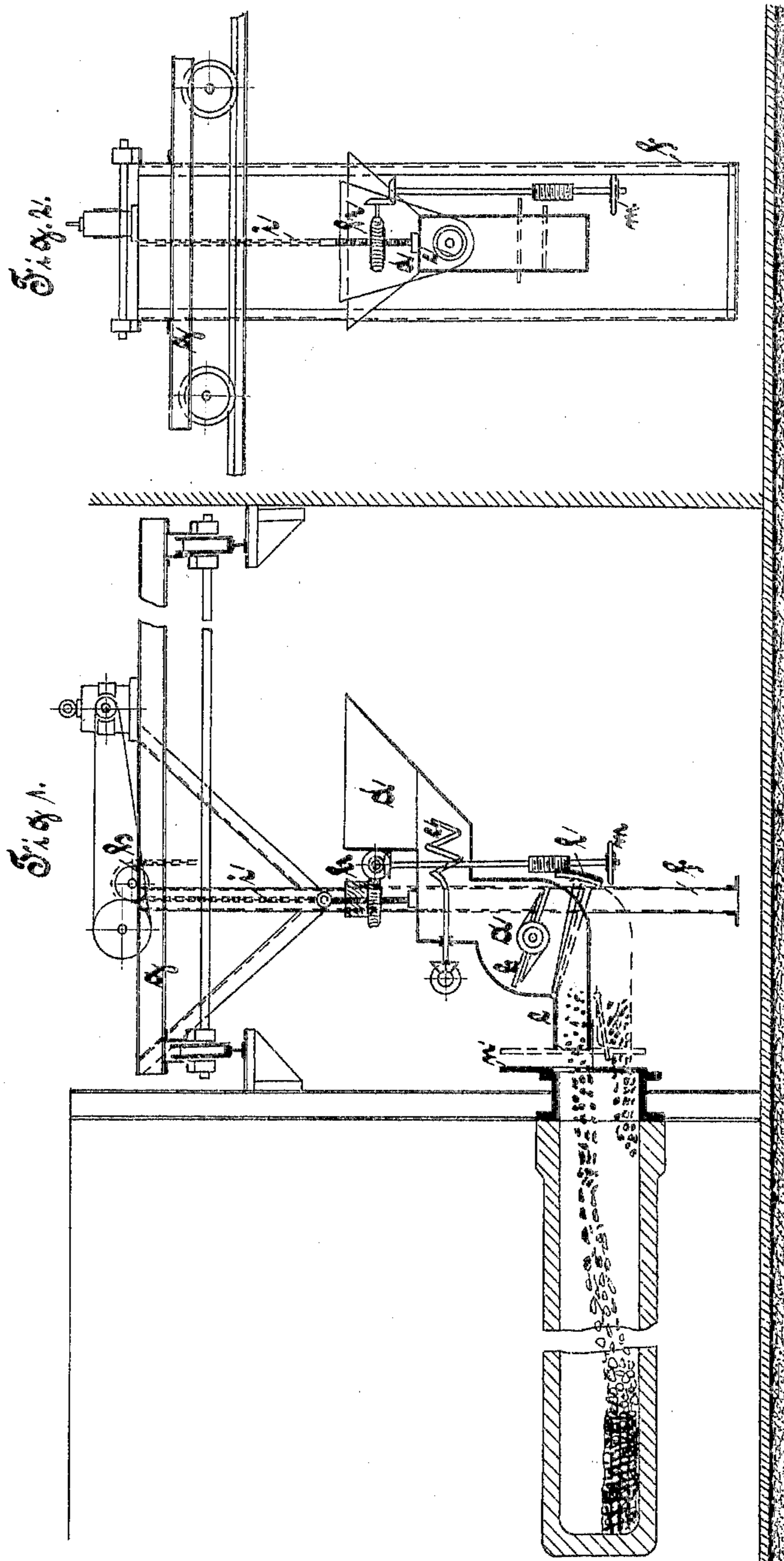
No. 793,773.

PATENTED JULY 4, 1905.

C. EITLE.
GAS RETORT CHARGING MACHINE.

APPLICATION FILED OCT. 21, 1903.

2 SHEETS—SHEET 1.



Witnesses:
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2 SHEETS--SHEET 2.

Fig. 4.

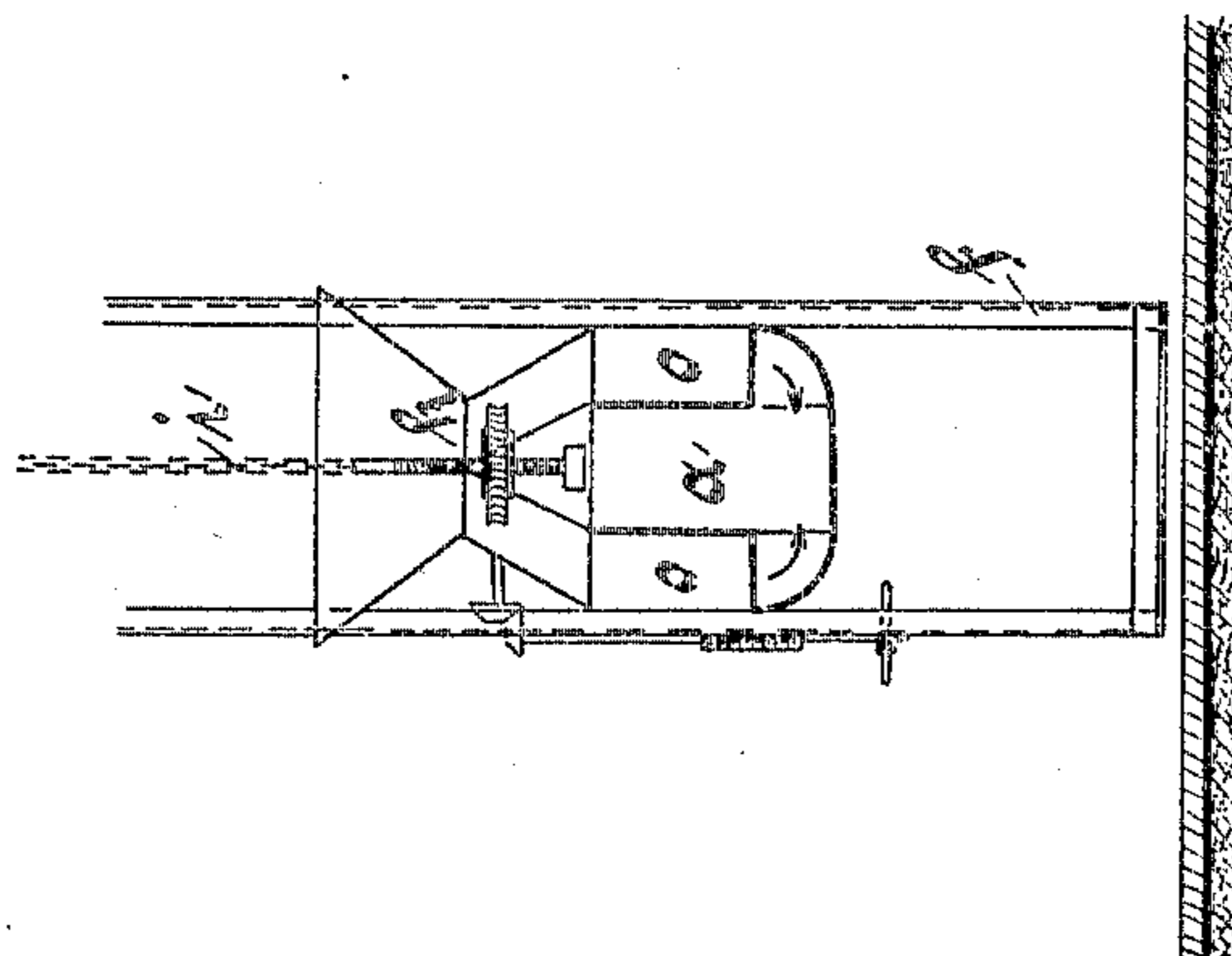
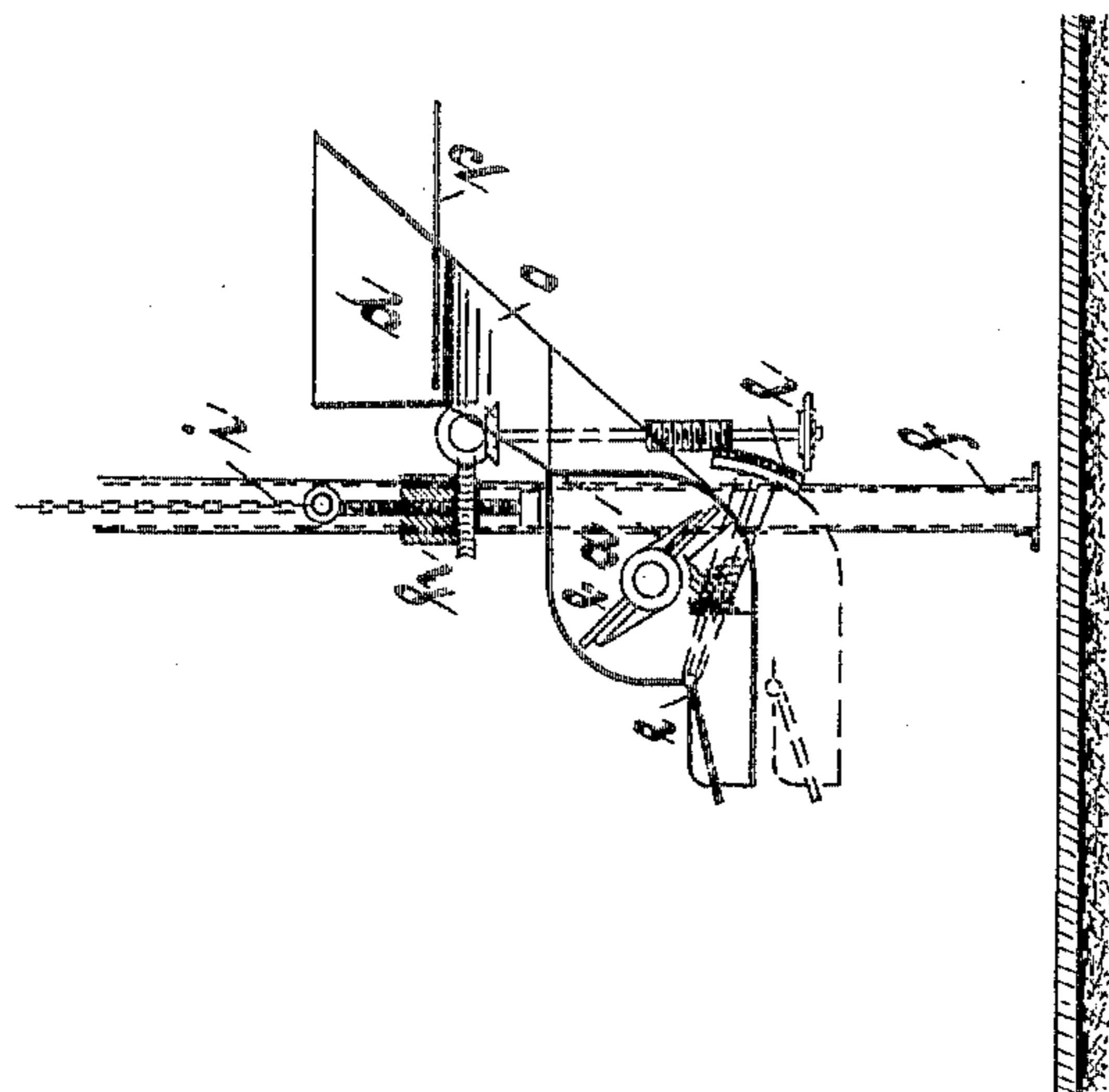


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHRISTIAN EITLE, OF STUTTGART, GERMANY.

GAS-RETORT-CHARGING MACHINE.

SPECIFICATION forming part of Letters Patent No. 793,773, dated July 4, 1905.

Application filed October 21, 1903. Serial No. 177,860.

To all whom it may concern:

Be it known that I, CHRISTIAN EITLE, factory owner, a subject of the King of Würtemberg, residing at 28/32 Rosenbergstrasse, in the city of Stuttgart, Kingdom of Würtemberg, German Empire, have invented a certain new and useful Gas-Retort-Charging Machine, of which the following is a specification.

This invention is intended to provide means whereby the coal required for the manufacture of illuminating-gas is fed to the red-hot retorts or furnaces in a layer of uniform height and uniform distribution throughout the entire length of the retort or the like for the purpose of distillation.

The present invention provides means to secure a speedy and perilless feeding of the retorts and allows at the same time of the length of the same being considerably increased, so that it is about double the usual size, which is of extreme economical importance in the manufacture of illuminating-gas.

The apparatus is shown by way of example in Figure 1 in longitudinal section and in Fig. 2 in transverse section.

It comprises chiefly any of the well-known centrifugal drums *a*, with wings *b* rotating at the inside thereof, the helicoidal worm *c* as a feeding means, the storage-receptacle *d*, and a deflecting-plate *e*. All these parts combined are supported by rollers in a suspension-frame *ff*, which is secured to a movable crane *g*, and they may be vertically adjusted according to the position of the retorts by means of a windlass *h* with chain *i*. The apparatus is also provided with a device *k*, comprising a threaded piece operatively connected to the chain, and a wheel revolvably mounted thereon, by means of which the apparatus may be raised or lowered to some extent independently of the windlass *h*. The deflecting-plate *e* is provided with a counter-lever connected to a toothed segment *l*, which engages with a worm. This deflecting-plate is positively connected to the lowering device *k* and is operated simultaneously with the same, the lowering of the apparatus being effected simultaneously with and in a certain relation to the lowering of the said plate.

The operation of the apparatus takes place

in such a manner that the spiral worm *c* is revolved at the same time as the blades *b* of the centrifugal drum *a*. The worm takes up the coal in uniform quantities and feeds it to the centrifugal drum, where it is thrown out of the delivery-opening by the action of the rapidly-rotating blades. The said delivery-opening is so arranged as to be directed toward the retort or the furnace it is desired to charge with the coal, and it is so adjusted in a vertical direction as to result in a maximum of throwing distance, by which means the retorts are filled at their extreme outer end. By then gradually lowering the apparatus simultaneously with the lowering of the deflecting-plate the throwing distance is diminished in proportion with the progress of feeding, and at the same time the momentum imparted to the coal by the uniformly-revolving blades is reduced until the retort is filled throughout its entire length. By increasing or reducing the rate at which the apparatus is made to descend and the speed of lowering the deflecting-plate the charging of the apparatus may be adjusted so as to obtain any desired height of layer. Hence the essential feature of this invention resides in the fact that the centrifugal apparatus, which comprises, as usually, a centrifugal drum, a feeding-worm, a storage-receptacle, and a deflecting-plate, is provided with a lowering device which is operatively and positively connected to the deflecting-plate, by which means any desired length of throwing distance with corresponding speed of the throw is obtained while the speed of the throwing-blades remains unchanged, and this also results in the possibility of adjusting the height of the layer, a result which has not been accomplished before.

Figure 1 shows the apparatus at the beginning of the charging operation, while the position shown in dotted lines indicates the position of the parts on the termination of the charging operation.

Figs. 3 and 4 are representations of another form of execution. In this form of construction the inclined lateral passages *o o* connect the centrifugal drum *a* with the storage-receptacle, which may be shut by a slide *p*. In order to avoid the drawing in of cold air

while the coal is thrust into the retort, which air would cause an injurious cooling of the glowing walls of the retort and which might give rise to explosions by the mixing with fine particles of coal, the exit-opening is provided with a protecting-plate *n*, which covers the mouth of the retort at any level and which may be withdrawn and may be again placed closely on the opening when the retort is being filled.

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

1. In a machine for filling retorts, a centrifugal drum, rotating blades mounted within the drum, a feed-orifice, a feed-worm in the feed-orifice, a storage-receptacle, a raising and lowering device, and a deflecting-plate, substantially as shown and described.

2. In a machine for filling retorts, a centrifugal drum, rotating blades mounted within the

drum, a feed-orifice, a feed-worm in the feed-orifice, a storage-receptacle, a raising and lowering device, means for forming a tight joint between the walls of the exit and the retort-mouth when in position, and a deflecting-plate, substantially as shown and described.

3. In a machine for filling retorts, a centrifugal drum, rotating blades mounted within the drum, a feed-orifice, a feed-worm in the feed-orifice, a storage-receptacle, a raising and lowering device, a plate for forming a tight joint between the walls of the exit and the retort-mouth when in position, and a deflecting-plate, substantially as shown and described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHRISTIAN EITLE.

Witnesses:

WM. HAHN,

ERNST ENTENMAN.