

No. 636,125.

Patented Oct. 31, 1899.

O. S. FELLOWS.

CAN CONTROLLING DEVICE.

(Application filed Feb. 27, 1899.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1.

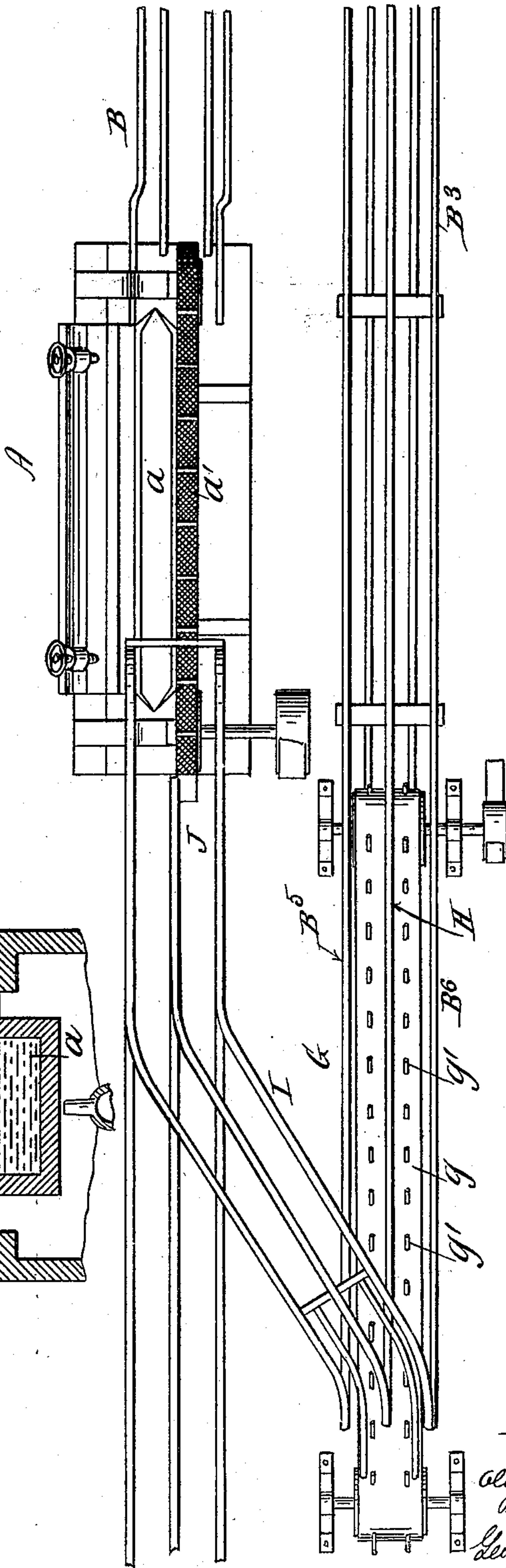
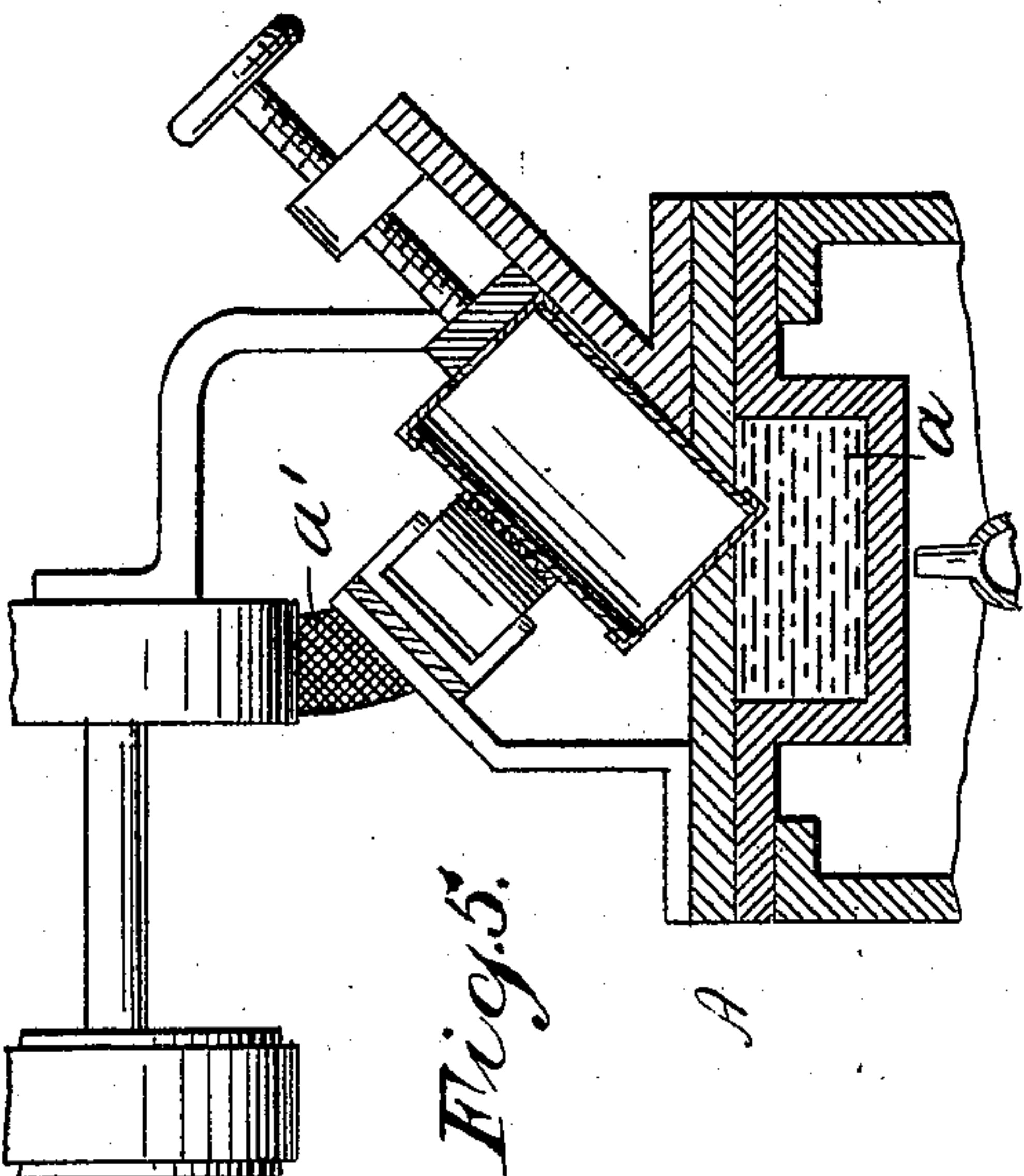


Fig. 5.



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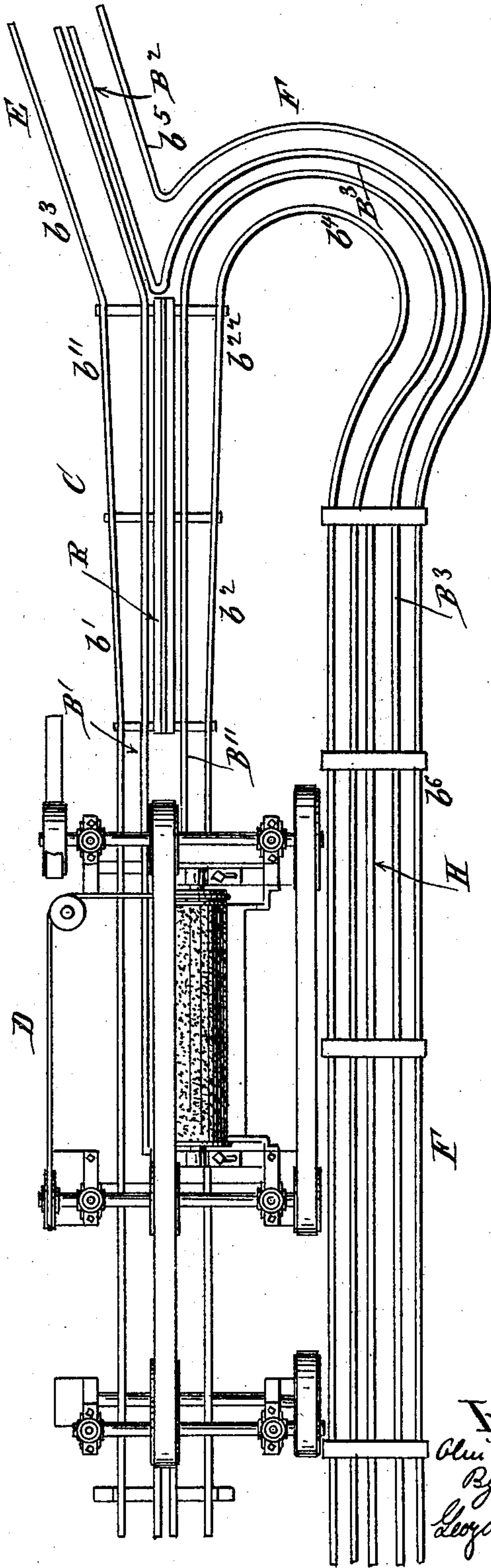
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4 Sheets—Sheet 2.

Fig. 2.



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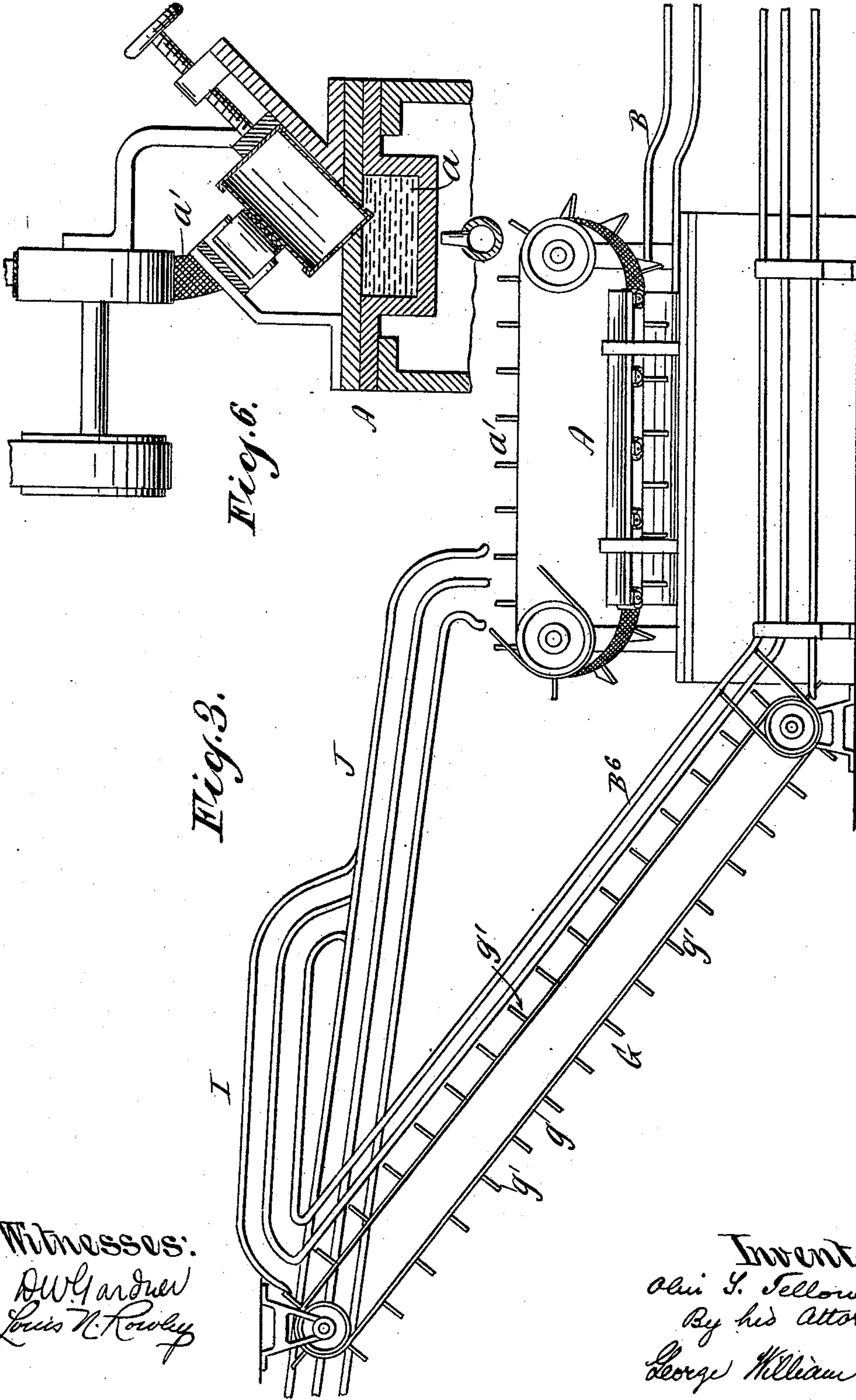
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(No Model.)

4 Sheets—Sheet 3.



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Fig. 9.

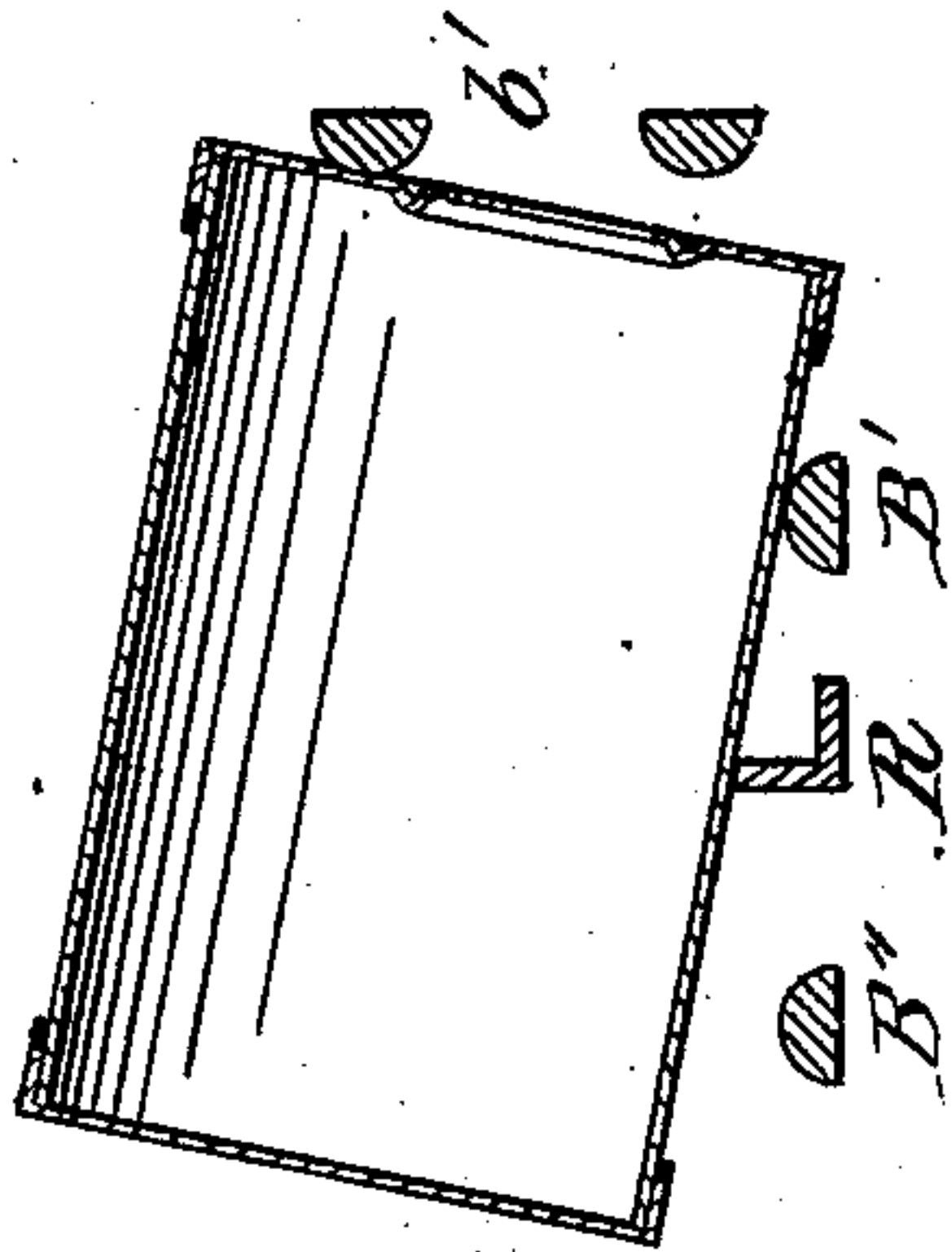


Fig. 8.

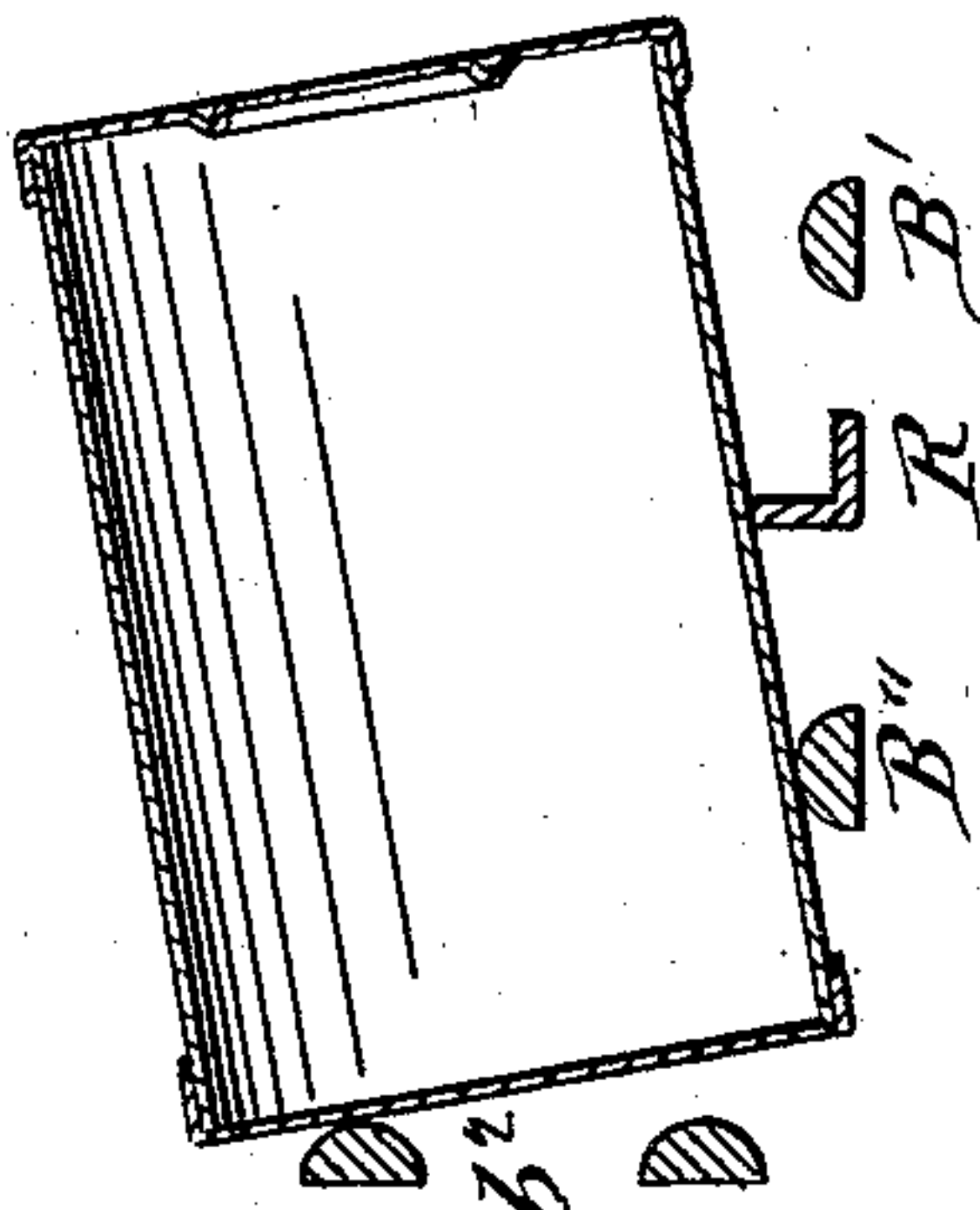


Fig. 7.

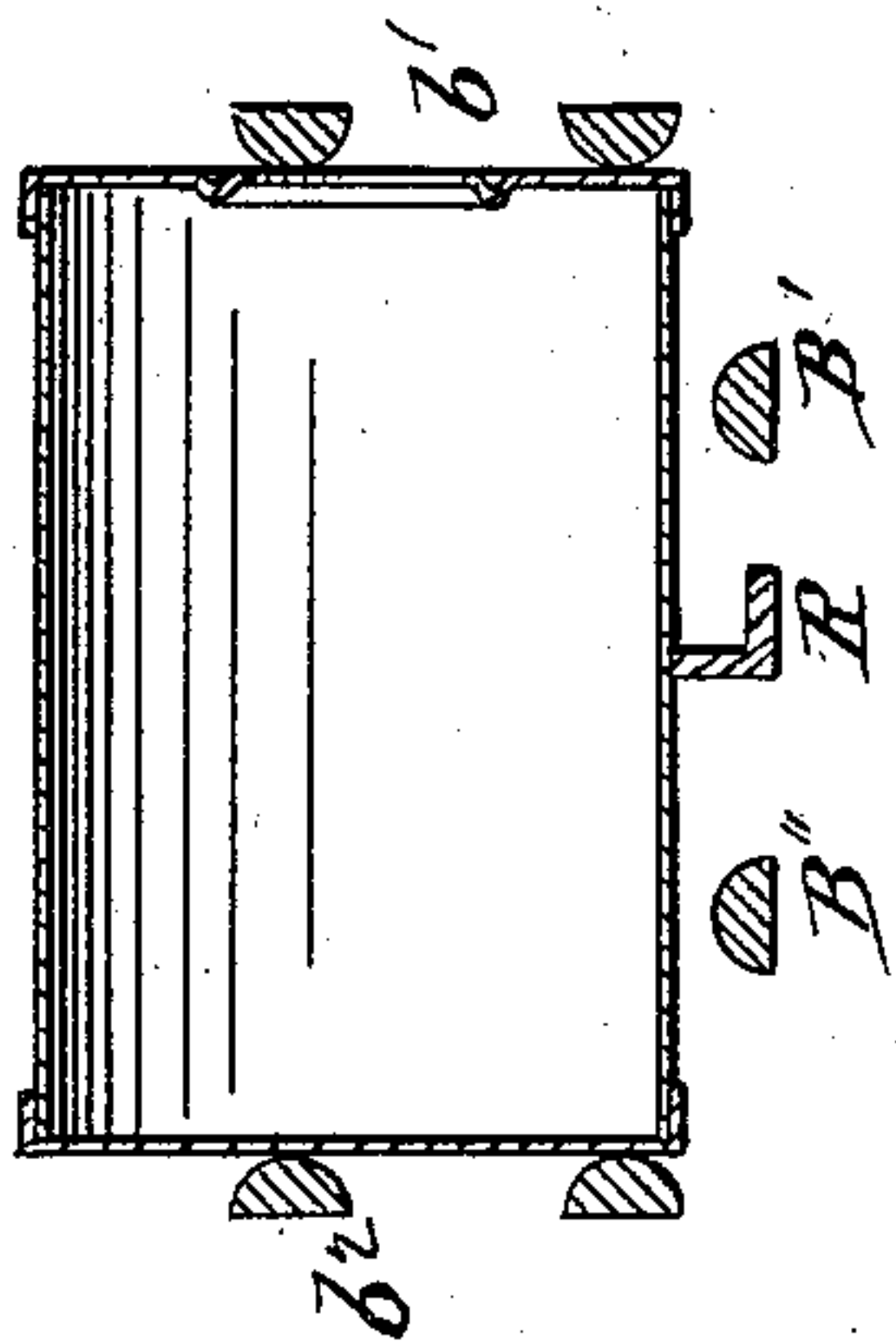
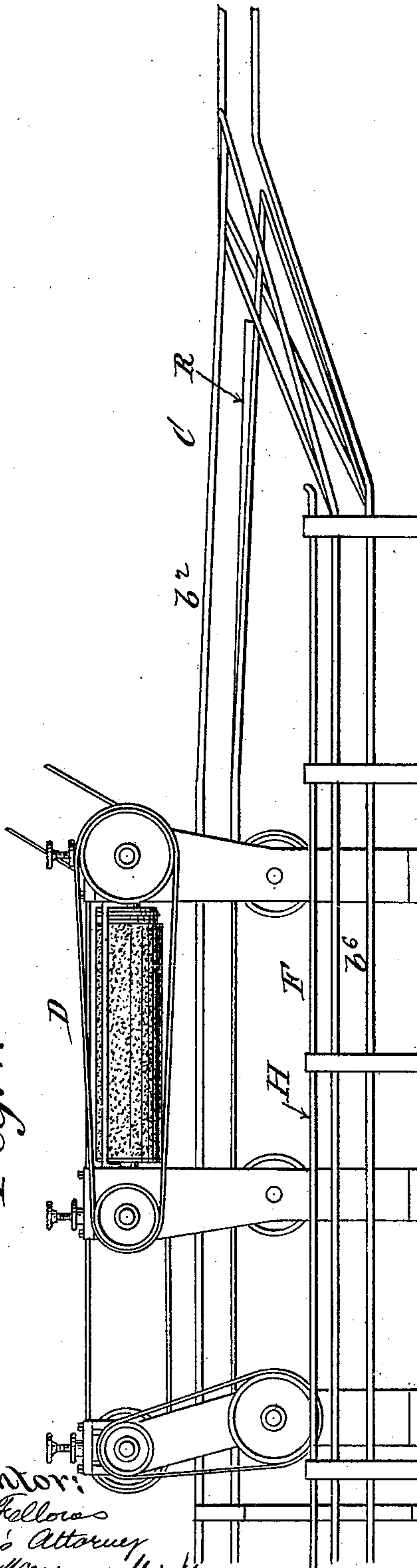


Fig. 4.



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UNITED STATES PATENT OFFICE.

OLIN S. FELLOWS, OF MIDDLETOWN, NEW YORK.

CAN-CONTROLLING DEVICE.

SPECIFICATION forming part of Letters Patent No. 636,125, dated October 31, 1899.

Application filed February 27, 1899. Serial No. 706,919. (No model.)

To all whom it may concern:

Be it known that I, OLIN S. FELLOWS, a citizen of the United States, residing at Middletown, in Orange county, and State of New York, have invented certain new and useful Improvements in Can-Controlling Devices, of which the following is a specification sufficient to enable others skilled in the art to which the invention appertains to make and use the same.

My invention relates to the manufacture of and manipulation of sheet-metal cans, particularly to the soldering of the end plates to the can-bodies.

The object is to effect automatically the sorting out or separation of cans which have had only one end plate soldered to the can-body from those having both end plates soldered to the can-body, as well as the separation or elimination of cans improperly placed in line with relation to the others. Incidentally I am enabled to accomplish the soldering of both ends of the can by a single soldering apparatus in one continuous operation by returning automatically to the soldering apparatus can-bodies having only one end soldered, they being turned or reversed in transit, so as to present the unsoldered ends to the solder-bath.

The invention consists, essentially, in the utilization of gravity for the purpose of sorting the cans by reason of a preponderance of weight of one end of a can over the other, and in the combination, with means for accomplishing this result, of means for soldering the ends of the cans and of means for removing superfluous solder therefrom.

In the accompanying drawings, Figures 1 and 2 represent conjointly a plan of my improved apparatus. Figs. 3 and 4 represent conjointly a side elevation of the same. Figs. 5 and 6 are sectional views illustrating the soldering of the opposite ends of a can; Figs. 7, 8, and 9, sectional views, upon an enlarged scale, illustrating the different positions of the cans upon the gravity-rail.

A represents a soldering apparatus of well-known construction of the class in which the edges of the can are presented to the solder-bath α at an angle, as illustrated in Figs. 5 and 6, the cans being forwarded through the

apparatus by an endless chain α' and the operation of the apparatus being otherwise substantially the same as heretofore.

B are ways which conduct the cans from the soldering apparatus to the sorting device C, either directly or through a device D, for removing the superfluous solder from the cans, interposed in said ways between said soldering apparatus A and said sorting device. The device D for removing superfluous solder may be of either of my devices set forth in Patents No. 586,964, dated July 27, 1897; No. 586,965, dated July 27, 1897; No. 586,966, dated July 27, 1897; No. 586,967, dated July 27, 1897; No. 595,704, dated December 21, 1897, and No. 595,705, dated December 21, 1897.

While the solder-saving device D is an important feature in my combination and arrangement of parts in practice, still its use is not absolutely essential, since the cans may be delivered directly from the soldering apparatus A to the sorting device C over supporting-rails $B' B''$, which latter are supplemented by guiding-rails $b' b^2$, which insure the proper presentation of the can to the forward end of the balance-rail R of the sorting device C.

The balance-rail R is centrally situated, or approximately so, with relation to the supporting-rails $B' B''$ and guide-rails $b' b^2$, and its forward end is upon a level or lower than the supporting-rails $B' B''$ at this point, the balancing-rail R gradually rising above the supporting-rails $B' B''$ a sufficient distance to enable it to tilt over the cans in one direction or the other, according to the preponderance of weight. The extensions $b'' b^{22}$ of the guide-rails $b' b^2$ diverge gradually with relation to the balancing-rail R from the forward end of the latter outward until they merge into the guide-rails $b^3 b^4$, respectively, of the delivery-ways E and return-ways F. In like manner the supporting-rails B' and B'' diverge into the two ways E and F, respectively, where they act in conjunction with the supporting-rails $B^3 B^4$, supplemented by the additional guide-rails $b^5 b^6$. The delivery-ways E conduct the cans to any desired point. The return-ways F conduct the cans to the elevating device G, which may be of any desired or

well-known construction, preferably a simple form, that shown in the drawings consisting of an endless belt *g*, provided with fingers *g'*, which pass upward between the supporting-rails *B⁵* *B⁶*. *H* represents an overhanging rail which confines the cans to the ways.

The cans are deposited by the can-elevating device *G* into a supplementary feedway *I*, by which they are returned to the main feedway *J*, by means of which the cans are fed to the soldering device.

Under ordinary conditions of manufacture the solid end of the can is heavier than the open or cap end, although this is not necessarily so, as in certain cases the reverse may be true. In describing the manipulation of the cans in connection with my invention I do not wish to confine myself to any particular method of passing the cans through the apparatus, since it can be arranged to solder either end of the can first, and I simply herein, by way of illustration, describe the manipulation of the can on the presumption that the solid end of the can is the heavier end and is utilized as the controlling end. Under these conditions a can after having its solid end soldered in the bath *a* is conducted by the ways either directly or indirectly through the solder-saving device *D* to the balance-rail *R*, to which it is presented with its longitudinal axis at right angles thereto and midway, or approximately so, between its ends. As it passes along the balance-rail *R* it is gradually raised thereby and will necessarily tilt or drop over upon the solid end at which the weight preponderates, as indicated in Fig. 8. This insures its deflection into the return-way *F*, by which it is conducted to the elevator *G* and returned to the main feedway *J* through the supplementary feedway *I*. As it is deflected into the return-way *F* it is reversed in position, so that it descends into the soldering-machine with its open end in proper relation to the soldering-bath to be soldered thereby. Again passing from the soldering-machine either directly or indirectly through the solder-saving device *D* to the balance-rail *R*, the latter will obviously tilt it over on its solid end, so that it will pass into the delivery *E*.

In certain cases where a heavier grade of tin is used in the top or open end than in the bottom or closed end of the can the latter may be passed to the soldering-machine, so that its open end is first soldered, the additional weight thus acquired by the open or cap end aiding it in acting as the controlling end of the can.

By first soldering the heavier end of the can its return to the soldering-machine is assured, since the balance-rail *R* is arranged to deflect it under these conditions into the return-way *F*, whereas if the lighter end were first sol-

dered the balance-rail would deflect the can into the delivery-way *E*.

It is obvious that my selecting device *C* may be used as an independent device for correcting the alinement or arrangement of cans for any desired purpose, since cans that are reversed or out of a prescribed relation to the rest may be by its use separated and deflected from the others and returned automatically in corrected position in line.

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

1. A device for automatically sorting tin cans consisting of a common runway leading to a balance-rail, said balance-rail arranged to tilt the cans by gravity and two ways for conducting the sorted cans from the balance-rail, substantially in the manner and for the purpose described.

2. In a device for automatically sorting tin cans, the combination of means for feeding the cans to a balance-rail, said balance-rail arranged to tilt the cans by gravity, and means for conducting the sorted cans independently from the balance-rail, substantially in the manner and for the purpose described.

3. The combination of a can-soldering machine provided with means for delivering the cans to a balance-rail, said balance-rail arranged to tilt the cans by gravity means for delivering certain of the sorted cans, and means for returning the rest of the sorted cans to the soldering-machine in a reversed position for the purpose and substantially in the manner described.

4. The combination of a can-soldering machine, ways for conducting the cans to a balance-rail, said balance-rail arranged to tilt the cans by gravity, a way for delivering the cans tilted in one direction, a way for conducting the cans tilted in the opposite direction to a can-elevating device, said can-elevating device and means for delivering the cans from said elevating device to the soldering-machine in a reversed position, for the purpose and substantially in the manner described.

5. The combination of a can-soldering machine, a device for removing superfluous solder from the cans and delivering them to a balance-rail, said balance-rail arranged to tilt the cans by gravity, a way for delivering the cans tilted in one direction, a way for conducting the cans tilted in the opposite direction to a can-elevating device, said can-elevating device and means for delivering the cans from said elevating device to the soldering-machine in a reversed position, for the purpose and substantially in the manner described.

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Witnesses:

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