

No. 741,657.

PATENTED OCT. 20, 1903.

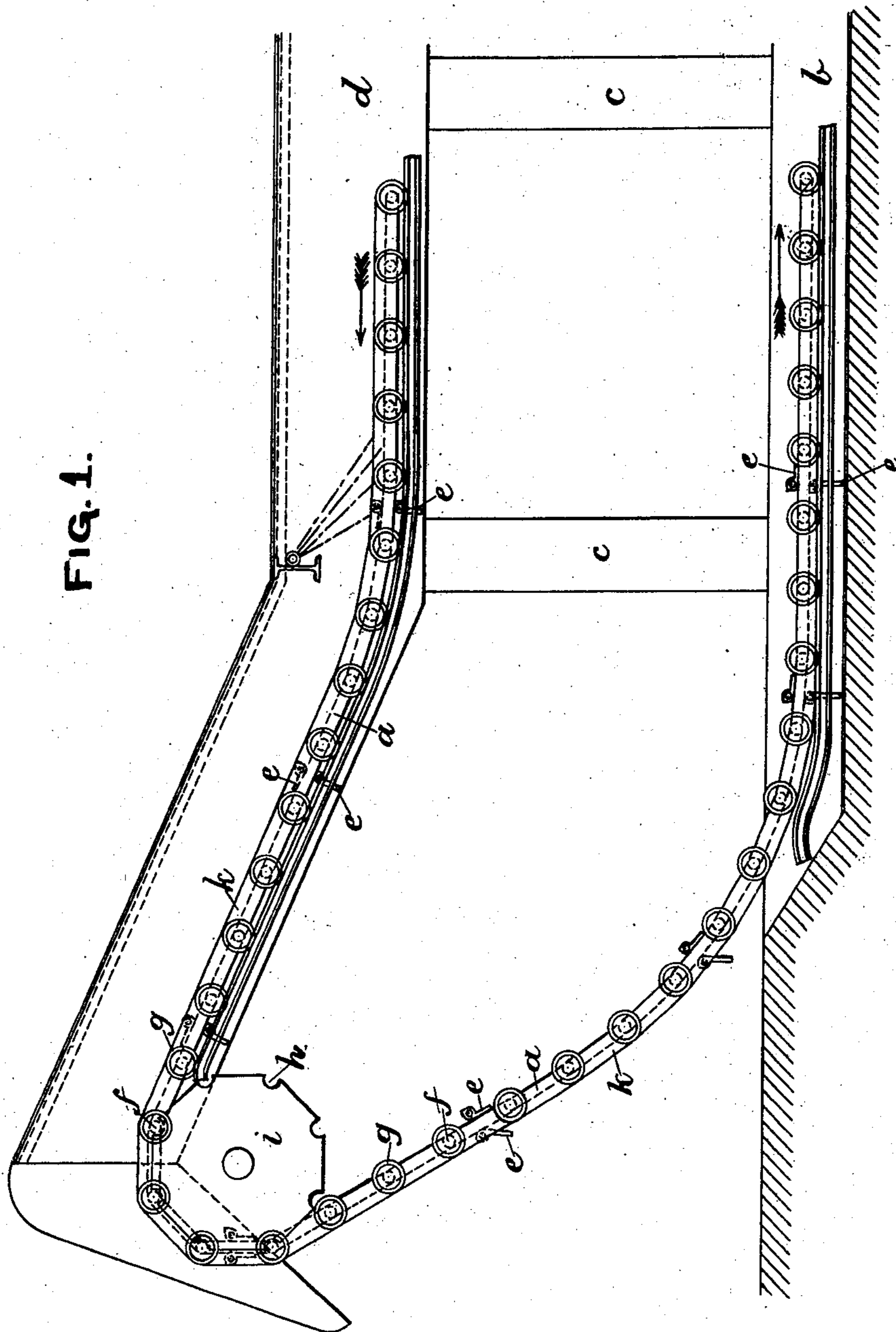
M. GRAHAM.
HOT COKE CONVEYER.

APPLICATION FILED APR. 6, 1903.

NO MODEL.

4 SHEETS—SHEET 1.

Fig. 1.



WITNESSES :

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INVENTOR :

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Attorney

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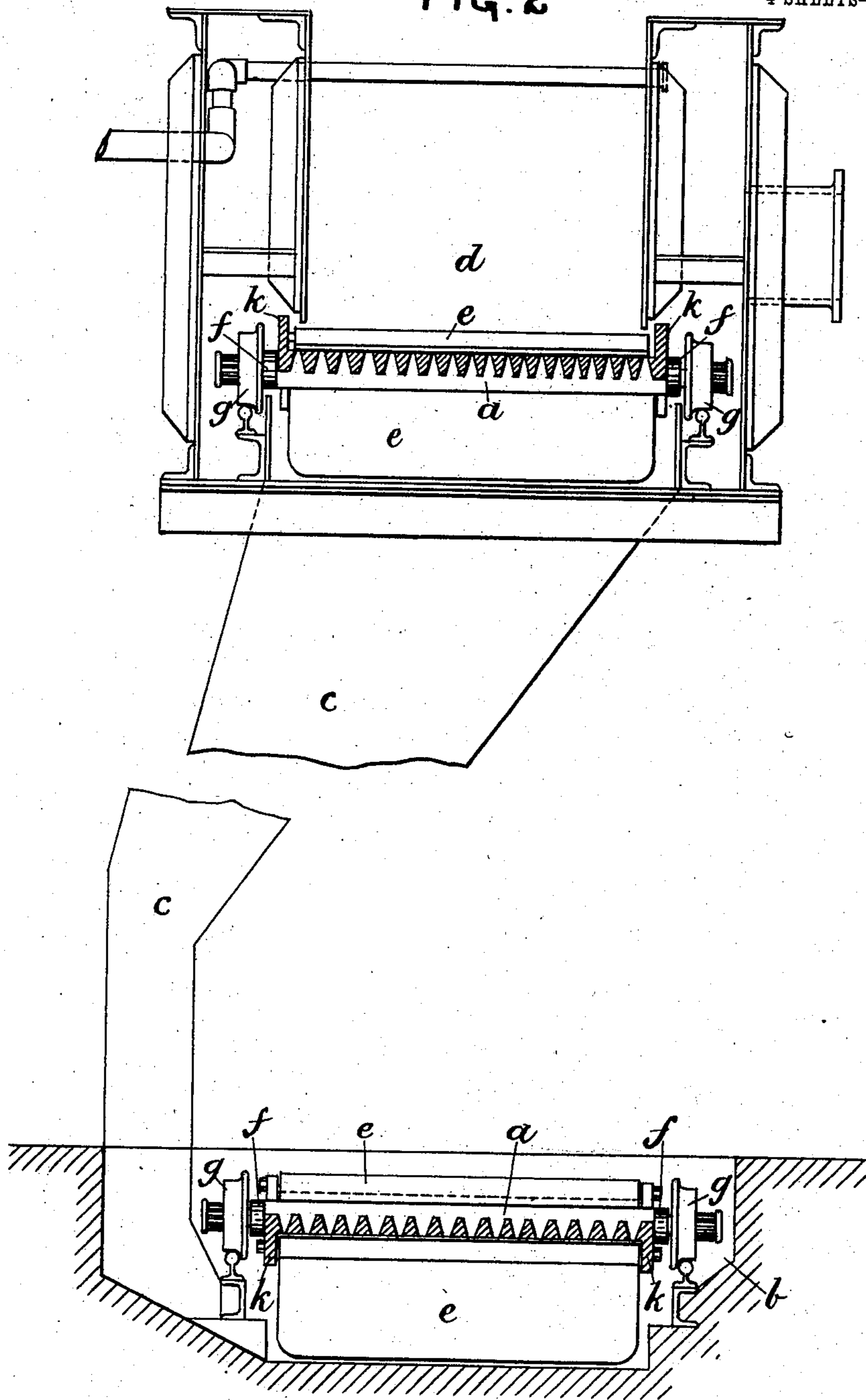
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FIG. 2

4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

FIG. 4.

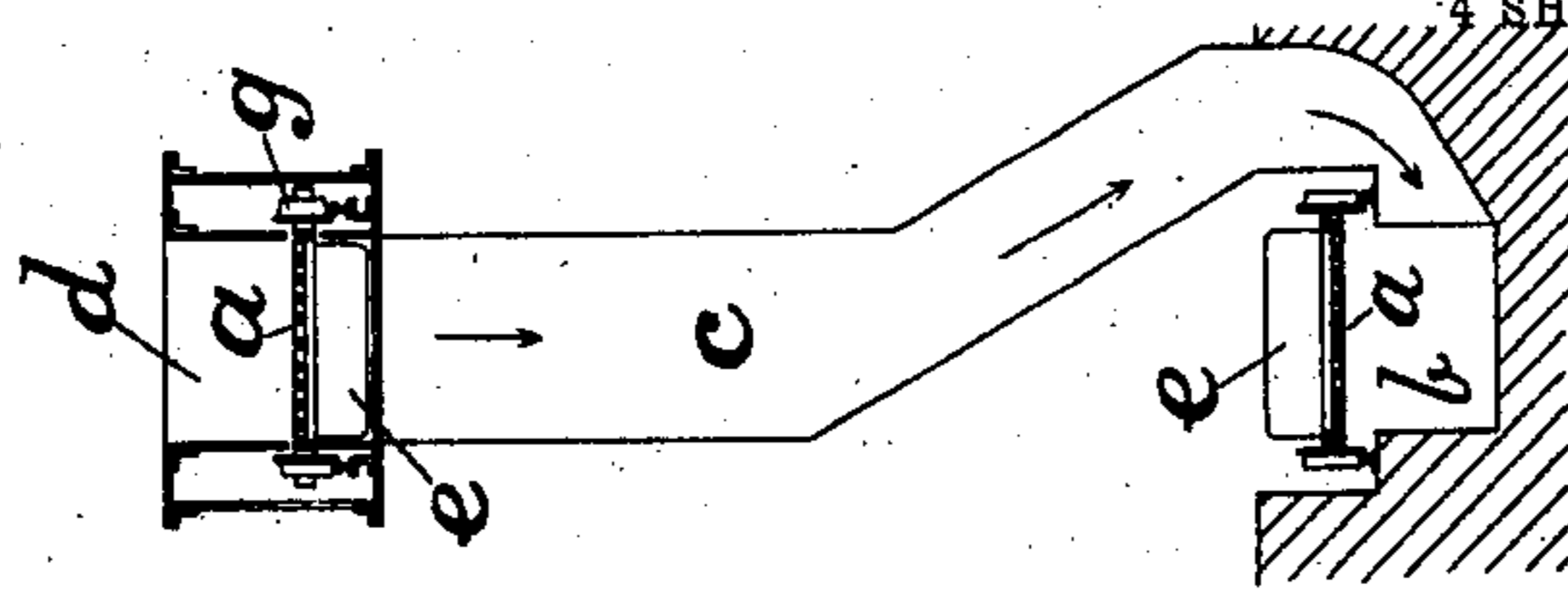
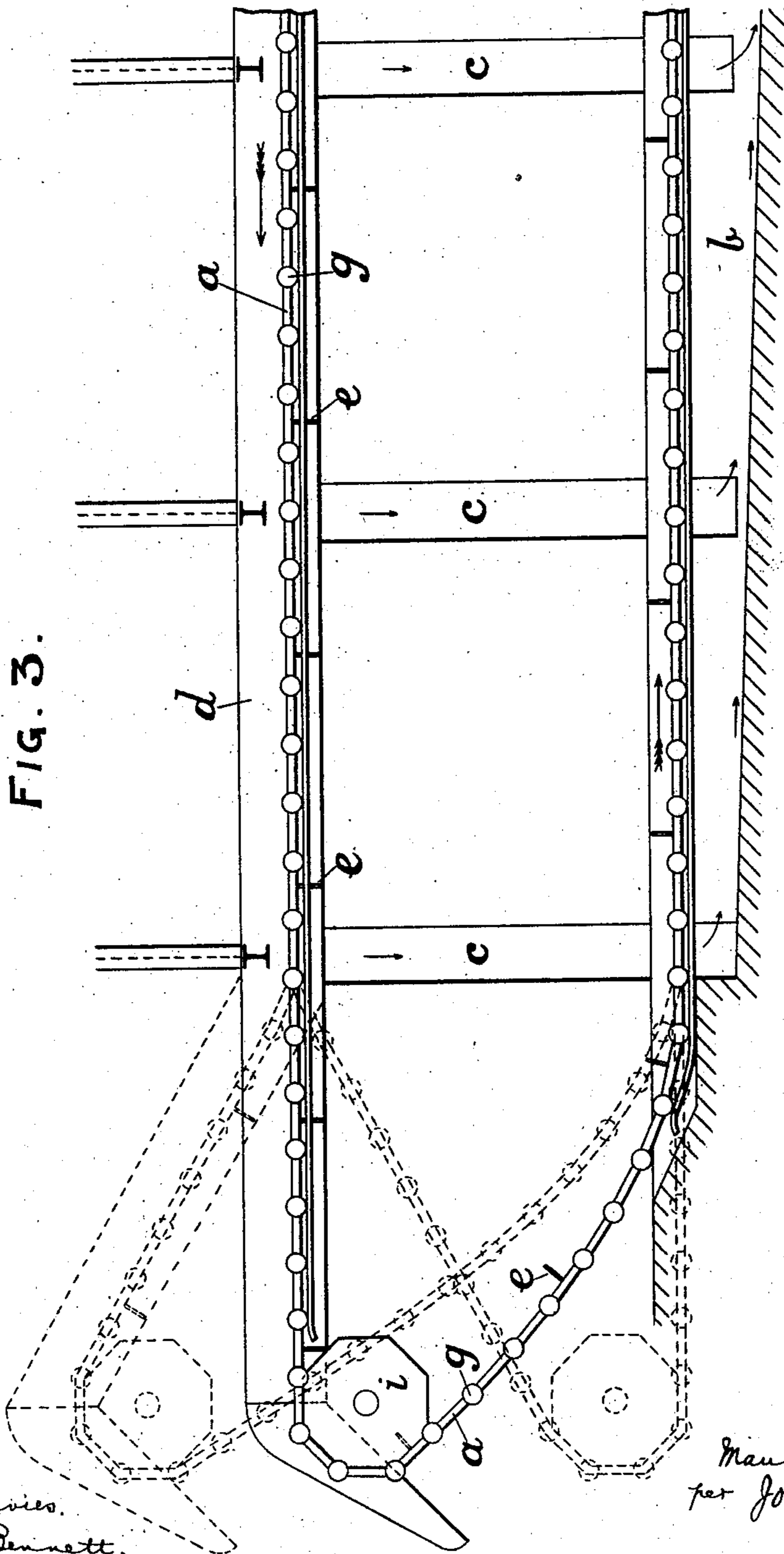


FIG. 3.



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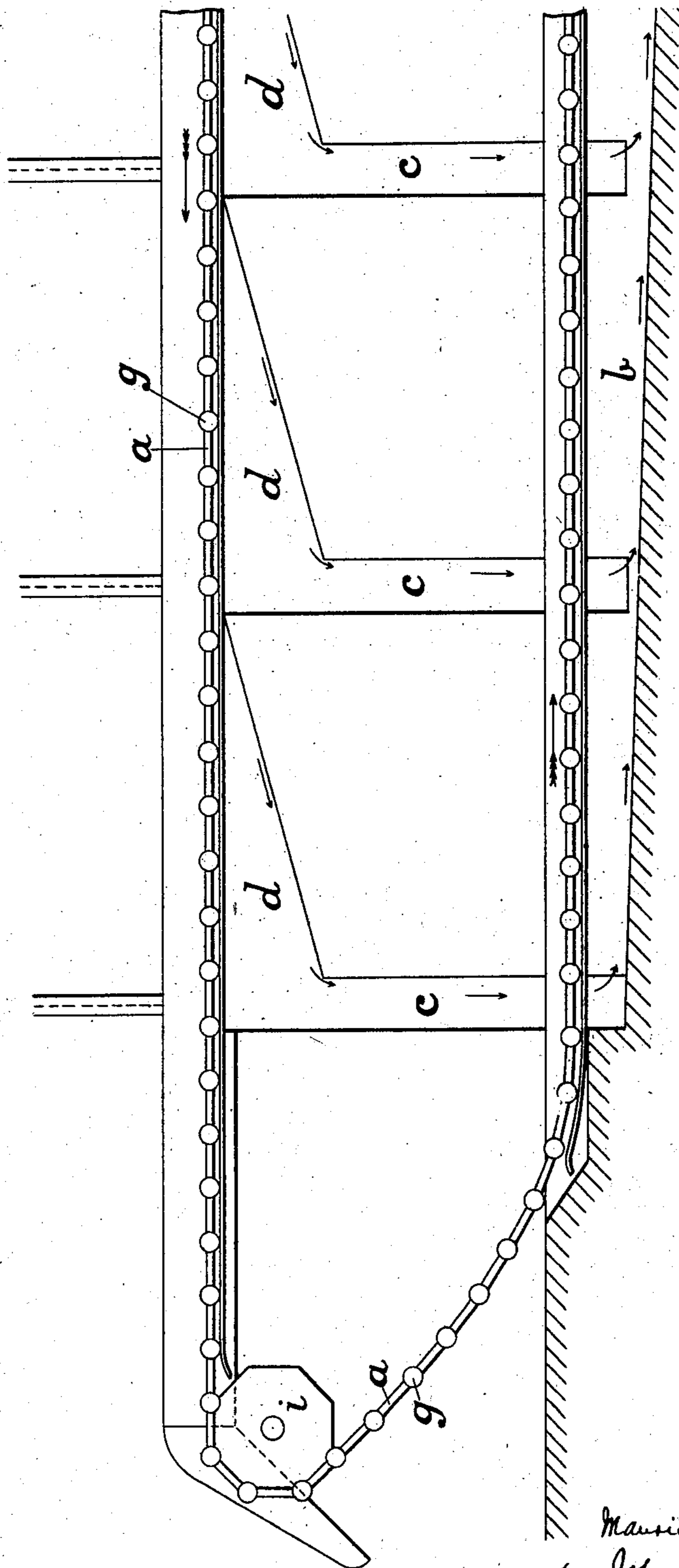
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4 SHEETS—SHEET 4.

FIG. 5.



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UNITED STATES PATENT OFFICE.

MAURICE GRAHAM, OF LEEDS, ENGLAND.

HOT-COKE CONVEYER.

SPECIFICATION forming part of Letters Patent No. 741,657, dated October 20, 1903.

Application filed April 6, 1903. Serial No. 151,375. (No model.)

To all whom it may concern:

Be it known that I, MAURICE GRAHAM, a subject of the King of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented a new and useful Improvement in Hot-Coke Conveyers, of which the following is a specification.

This invention relates to hot-coke conveyers for use mainly in conveying hot coke direct from the retorts in gasworks, and is a further improvement on the apparatus shown and described in the specification of my prior application, Serial No. 141,575, filed February 2, 1903.

The main object of my invention is to provide in these and other types of conveyer an improved means whereby the conveyer-trough may be kept clear of the water and sediment which tends to accumulate therein by reason of the quenching and subsequent draining of the coke during transit. The method of driving the conveyer within the trough is also improved and simplified.

My said invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of part of a coke-conveying plant having certain of my improvements applied. Fig. 2 is an end elevation of Fig. 1 in section on a somewhat-enlarged scale. Fig. 3 is a front elevation of part of a coke-conveying plant having my improvements applied in a somewhat-modified form, as hereinafter described. Fig. 4 is an end elevation of Fig. 3 in section. Fig. 5 is a front elevation of part of a coke-conveying plant having my improvements applied in a further modified form, as hereinafter described.

Similar letters refer to similar parts throughout the several views.

According to my present invention the lower or return part of the endless traveling conveyer *a*, Figs. 1 and 2, is inclosed within a trough *b*, which is connected at convenient intervals by means of suitable pipes, channels, or passages *c*, with the trough *d* inclosing the upper or forward part of the conveyer. The endless conveyer *a* is provided both on its outer and inner surfaces with a series of hinged push-plates *e*. The said push-plates on the lower side of the conveyer *a* (both forward and return) remain

suspended in a vertical position and are prevented from turning back upon their hinges by means of suitable projecting shoulders or stops, while the push-plates on the upper side of the conveyer close up and lie flat against the surface of the conveyer. The whole of the water and sediment accumulated in the upper trough *d* is therefore pushed along by the action of the hinged push-plates *e* and is immediately discharged through the connecting pipes or channels *c* into the lower trough *b*, from which it is discharged into a sump or collecting-tank at the extreme end of the trough *b* by the action of the bottom push-plates *e* on the return part of the conveyer *a*.

In the arrangement shown in Figs. 3 and 4 the pipes or passages *c*, leading from the upper trough *d*, are arranged in connection with an inclined bottom drain or trough *b*, so that push-plates *e* (either fixed or hinged) are required for the upper trough only. The water and sediment on reaching the bottom drain or trough *b* gravitates toward a suitably-placed sump or tank, the discharge being facilitated, if desired, by means of an occasional or constant flush of water along the inclined drain or trough *b*, or, if desired, each of the outlets or passages *c* may discharge into a separate sump or tank, from which series of sumps or tanks the accumulated water and sediment may be removed by any convenient means.

In the arrangement shown in Fig. 5 the upper trough *d* is inclined either in sections, as shown, or in one continuous incline, so as to enable the water and sediment to gravitate toward the outlets or passages *c* without the use of push-plates. The water and sediment is then discharged by means of the inclined drain or trough *b*, as above described, or direct into a series of sumps or collecting-tanks.

As the upper trough *d* is kept clear of water, the driving-wheel *i* of the conveyer need not necessarily (as has heretofore been the case) be mounted above the level of the body of the trough *d*, as shown in Fig. 1. On the contrary, the driving end of the conveyer is preferably arranged in line with the body of the trough *d*, as shown in Figs. 3 and 5, or on a downward incline, as shown in dotted lines in Fig. 3.

To facilitate the driving of the endless con-

veyer *a*, collars *f*, Figs. 1 and 2, are provided at each joint, preferably at each end of the hinge-pin and within the supporting runners or wheels *g*, these collars *f* being adapted to
 5 fit within corresponding recesses *h* in the periphery of the sprocket-wheels *i* at each end of the apparatus.

Each section or link of the endless conveyer *a*, whether perforated or otherwise, is provided with raised flanges *k* along the sides for
 10 the purpose of preventing the coke from falling onto the wheels or runners *g* and the collars *f*. One or more raised transverse ribs may also be provided, if desired, these serving
 15 as a means of strengthening the conveyer and also as a means of retaining the coke upon the conveyer when working on an incline.

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

20 1. In apparatus for conveying and quenching incandescent hot coke, the combination, with an endless traveling conveyer *a* working within an upper trough *d*, of a lower trough *b* inclosing the return part of the conveyer,
 25 a series of pipes or passages *c* connecting the said troughs *b* and *d*, and a series of hinged push-plates *e* attached on both sides of the said conveyer *a*, substantially as set forth, for the purpose specified.

2. In apparatus for conveying and quench- 30
 ing incandescent hot coke, the combination, with an endless traveling conveyer *a* working within an upper trough *d*, of an inclined bottom drain or trough *b*, a series of pipes or pas- 35
 sages *c* connecting the said troughs *b* and *d*, and a series of push-plates *e* attached on the inner side of the said conveyer *a*, substantially
 as set forth, for the purpose specified.

3. In apparatus for conveying and quench- 40
 ing incandescent hot coke, the combination, with an endless traveling conveyer *a*, of an inclined upper trough *d*, an inclined bottom drain or trough *b*, and a series of pipes or pas-
 sages *c* connecting the said troughs *b* and *d*, substantially as set forth, for the purpose 45
 specified.

4. The combination, with an upper conveyer-trough, and a lower conveyer-trough; of drain-passages connecting the middle parts
 of the said troughs, and an endless traveling 50
 conveyer working in the said troughs.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MAURICE GRAHAM.

Witnesses:

ALLAN BENNETT,
 HARRY DAVIES.