N° 18,662 A.D. 1895

Date of Application, 5th Oct., 1895

Complete Specification Left, 3rd July, 1896—Accepted, 22nd Aug., 1896

PROVISIONAL SPECIFICATION.

Improvements in Curing Bacon and Hams.

I, EVAN ROBERTS DOWN, of Station Yard, Gillingham, in the County of Dorset, Bacon Curer, do hereby declare the nature of this invention to be as follows:—

My invention relates to a method of curing bacon and hams.

In carrying out my invention I inject brine into the sides or parts to be cured, then subject the parts so treated to a vacuum and then introduce brine into the vacuum chamber under atmospheric or other pressure, whereby the brine is caused to thoroughly impregnate the parts.

In order to facilitate the introduction and removal of the sides into the vacuum chamber, I make the chamber large enough to contain a truck or trucks having removable trays upon which the sides are placed and designed to run upon rails which extend into the chamber.

In order that the door or cover which closes the ends of the said chamber may be quickly secured with a hermetic joint, I provide for forcing or drawing the cover into tight contact with the adjacent joint surface by hydraulic pressure, and I advantageously accomplish this by arranging behind the flange against which the cover joints a series of hydraulic rams each of which carries a crosshead upon which is pivotally mounted a stirrup, the several stirrups being designed to enter slots in the cover and to engage therewith in such a manner that when the hydraulic rams are operated the stirrups will draw the cover firmly against the joint surface.

To provide for rapidly moving the cover away from the opening in the vacuum chamber, I sling the cover from an overhead carrier running upon a rail or rails; or I suspend the said cover from a crane which is operated by a hydraulic ram upon the top of the vacuum chamber.

Dated this 5th day of October 1895.

G. F. REDFERN & Co.,
4, South Street, Finsbury, London, Agents for the Applicant.

COMPLETE SPECIFICATION.

Improvements in Curing Bacon and Hams.

I, EVAN ROBERTS DOWN, of Station Yard, Gillingham, in the County of Dorset, Bacon Curer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to a novel method of curing bacon and hams.

In carrying out my invention I inject "pickle" (by which I mean brine or other suitable preserving solution) into the sides or parts to be cured or salted, by means of a syringe or its equivalent having a nozzle, which penetrates to the required depth, then subject the parts so treated to a vacuum and then introduce pickle

into the vacuum chamber under atmospheric or other pressure, whereby the pickle is caused to thoroughly impregnate the parts.

In order to facilitate the introduction and removal of the meat to be treated into the vacuum chamber, I make the latter large enough to contain a truck or trucks having removable trays upon which the meat is placed and designed to run upon rails which extend into the chamber.

To provide for rapidly moving the cover away from the opening in the vacuum chamber, I sling the cover from an overhead carrier running upon a rail or rails: or I suspend the said cover from a crane which is operated by a hydraulic ram upon the top of the vacuum chamber.

To enable my invention to be fully understood I will describe the same by reference to the accompanying drawings, in which:—

Figure 1 is a side elevation of apparatus suitable for use in carrying out my invention:

Figure 2 is a plan of the same:

Figure 3 is a front view of the carrier for moving the cover away from the opening in the chamber:

Figure 4 is a vertical section of the end of the vacuum chamber and the door drawn to an enlarged scale:

Figure 5 is an elevation of the door:

Figure 6 is a plan partly in section shewing a hydraulic ram for securing the door to the chamber:

Figure 7 is a side view of the hydraulic ram:

Figure 8 is a section on the line 8—8 of Figure 6:

Figure 9 is a side elevation shewing a hydraulic crane in position for raising the door or cover.

a is the vacuum chamber in which the sides or parts to be cured or salted are introduced after having had pickle injected into them. *b* is a truck provided with removable trays *c*, *c* to receive the sides or parts to be cured, and *d*, *d* are the rails which extend into the chamber *a* and upon which the truck or trucks runs or run.

One end of the vacuum chamber *a* is permanently closed, the other end being temporarily closed by means of the door *e* adapted to be fixed against the end of the vacuum chamber with a hermetic joint. In order that the said door or cover *e* may be quickly secured with a hermetic joint, I advantageously employ the following arrangement. Around the periphery of the said door *e* are arranged a number of lugs *f*, *f*, each lug having formed in it two slots *g*, *g*. The inner face of the door or cover *e* is provided with a circular recess *h* into which the projecting end of a ring *i* on the end of the vacuum chamber *a* is designed to pass when the door is placed in position for closing the said chamber. Suitable packing *j* is provided in the circular slot for making a tight joint.

Rivetted or otherwise suitably attached to the chamber *a* is a series of hydraulic ram cylinders *k*, *k*, *k*, the rams *l*, *l*, *l* working in which are each packed with a cup leather *m* in the ordinary manner. At its outer end each ram is rigidly attached to a crosshead *n* provided with a guide-rod *o* working in a guide *p* secured to the vacuum chamber *a*. *q*, *q* are links forming a stirrup and pivotally mounted upon the cross-head to which they are connected by means of the screws q^1, q^1, the said links being formed at their free ends with heads *r* and being designed to enter into the slots *g*, *g* in the lugs *f* on the door or plate *e* and to pull the door or cover, by means of the heads, into tight contact with the vacuum chamber when the ram is forced outwards. r^1, r^1 are bars attached to the cylinders *k* for limiting the movement of the links *q*, *q* on the crosshead and r^2, r^2 are pins which pass through holes in the said bars for preventing the links *q* from accidentally leaving the slots *g*.

The rams are all connected to a single source of pressure and are actuated simultaneously.

As the mode of tightly closing the door or cover by means of hydraulic rams

forms the subject-matter of my application of later date than this application, *viz.* No. 14285 of 1896, I wish it understood that I make no claim to it in this application.

To provide for rapidly moving the cover *e* away from the vacuum chamber *a* when the links *q* have been removed from the slots *g* I sling the same to the overhead carrier *s*, the said carrier being provided with rollers *t*, *t* adapted to run on the rail *u*. The carrier *s* can be set in motion by means of the pulley *v* and gearing *w*.

Figure 9 shews an alternative device for removing the cover. This device consists of a hydraulic crane *x* mounted on the top of the vacuum chamber *a*, the cover *e* being suitably connected to the chain *y* of the crane.

The chamber is provided with an inlet and outlet for the pickle and is connected to suitable apparatus for producing the vacuum, and with means for subjecting the pickle to pressure.

The process is as follows:—The sides or parts to be cured, which have been treated with pickle injections as above described, are placed on the trays *c*, *c* of the truck or trucks *b* which is or are then run into the chamber *a*. The door *e* is then placed in position over the opening and the links *q*, *q* are placed in the slots *g*, *g* in the lugs *f* of the door *e* and retained thereby; the pins r^2, r^2 and the rams *l* are then forced outwards whereby the door *e* is pulled against the end of the cylinder *a* so as to cause the ring *i* to enter the recess *h* in the cover *e* thereby making a hermetic joint. The chamber is then exhausted of air so as to cause the sides or parts to give up the free gases they contain and afterwards filled with pickle which is subjected to atmospheric or other pressure and forced into the pores of the sides so as to thoroughly impregnate the same. When the operation of impregnation is finished the pickle is run off, and the rams are relieved from pressure thereby enabling the links *q*, *q* to be removed from the slots *g*, *g* so that the door can be moved from the front of the opening in the chamber *a* by means of the carrier *s* or the crane *x* and the truck or trucks containing the cured sides or parts is or are then run out from the chamber.

Although I have described my invention as applied for curing bacon and hams, it is obvious that my process can be used for preserving other kinds of meat.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

The method of curing or salting bacon, hams and the like wherein the sides or parts to be cured have pickle injected into them and are then placed in a chamber which is first exhausted of air and then filled with pickle, pressure being subsequently applied, substantially as, and for the purposes, hereinbefore described.

Dated the 3rd day of July 1896.

G. F. REDFERN & Co.,
4, South Street, Finsbury, London, Agents for the Applicant.

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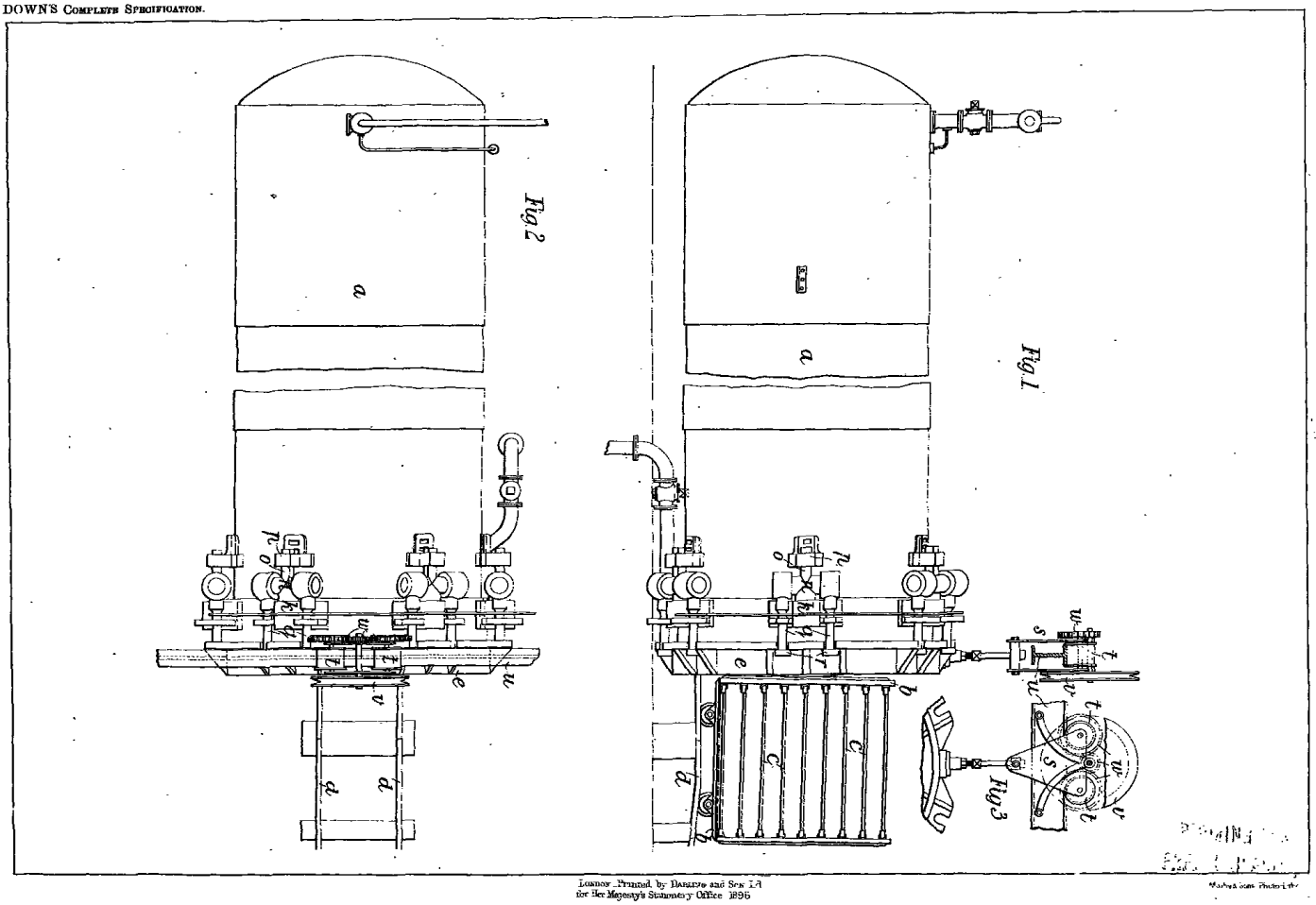
A.D. 1895. Oct. 5. N.º 18,662.
DOWN'S Complete Specification.

(3 SHEETS)
SHEET 1



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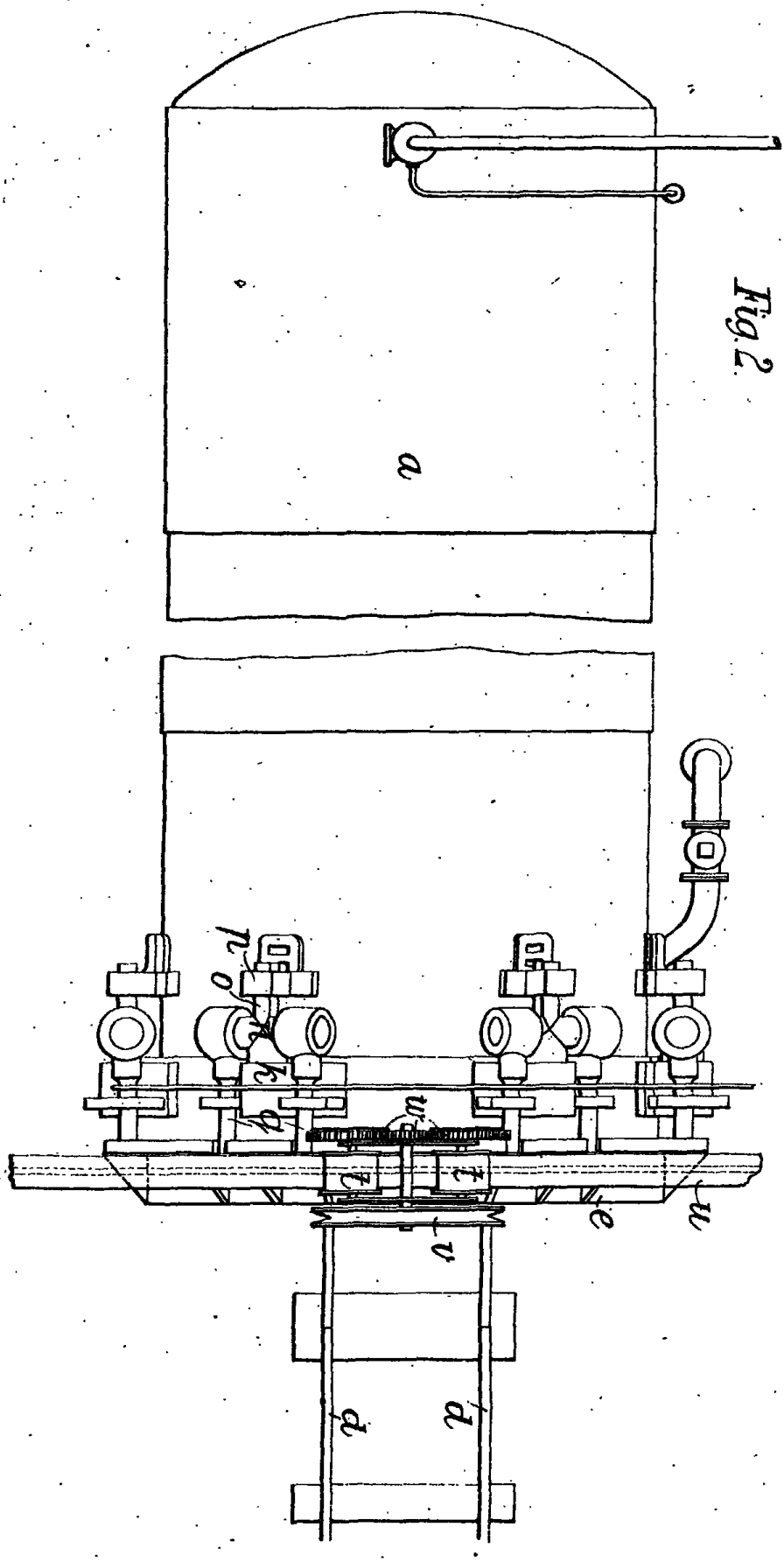

Fig. 2.

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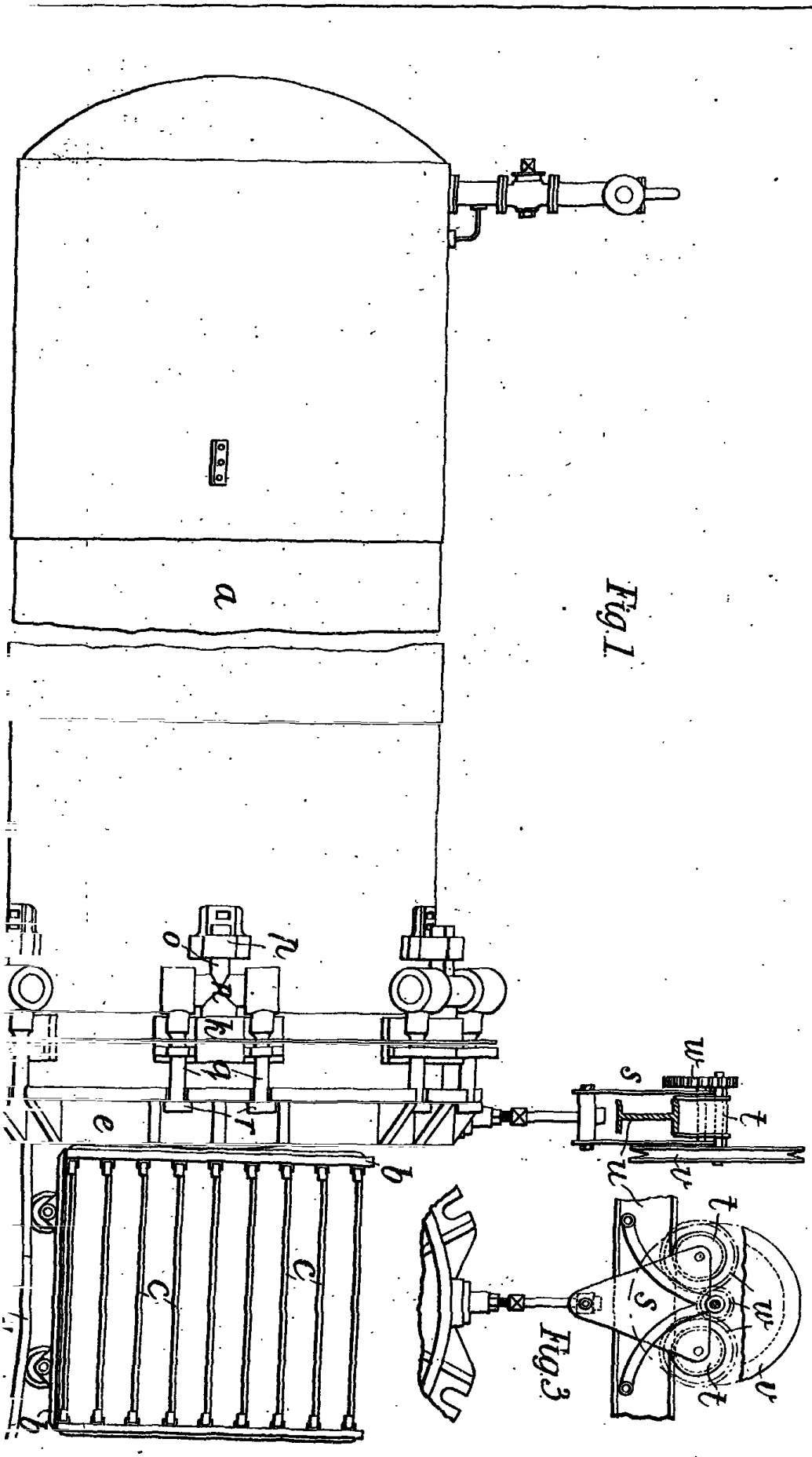

Fig. 1

Fig 3

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Fig. 4.

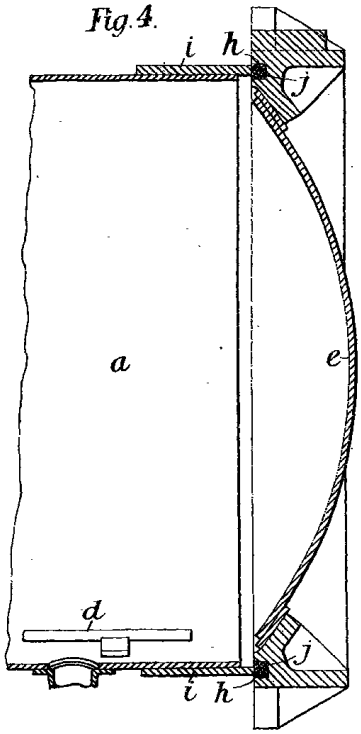

Fig. 5

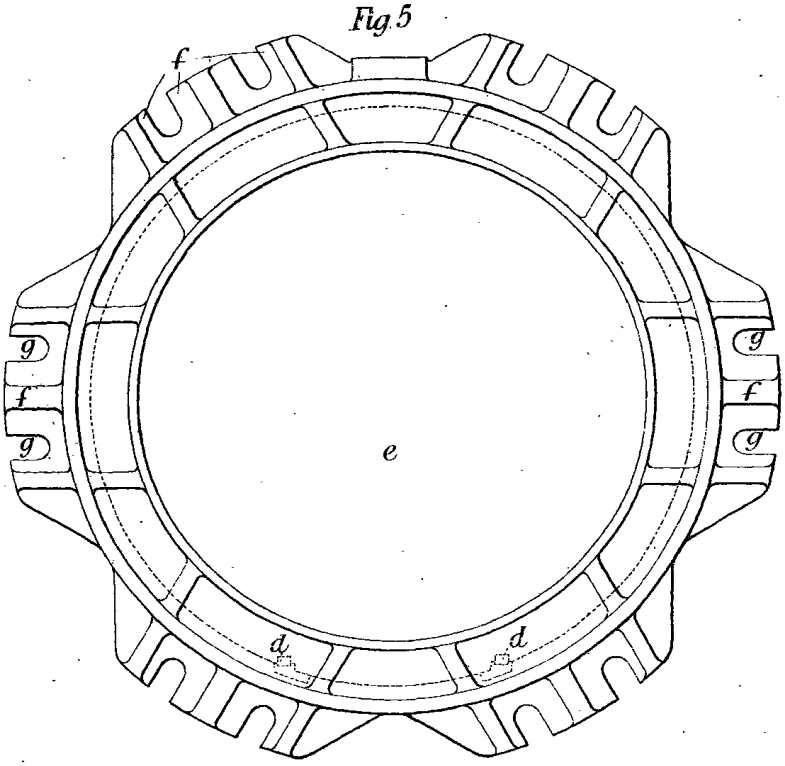

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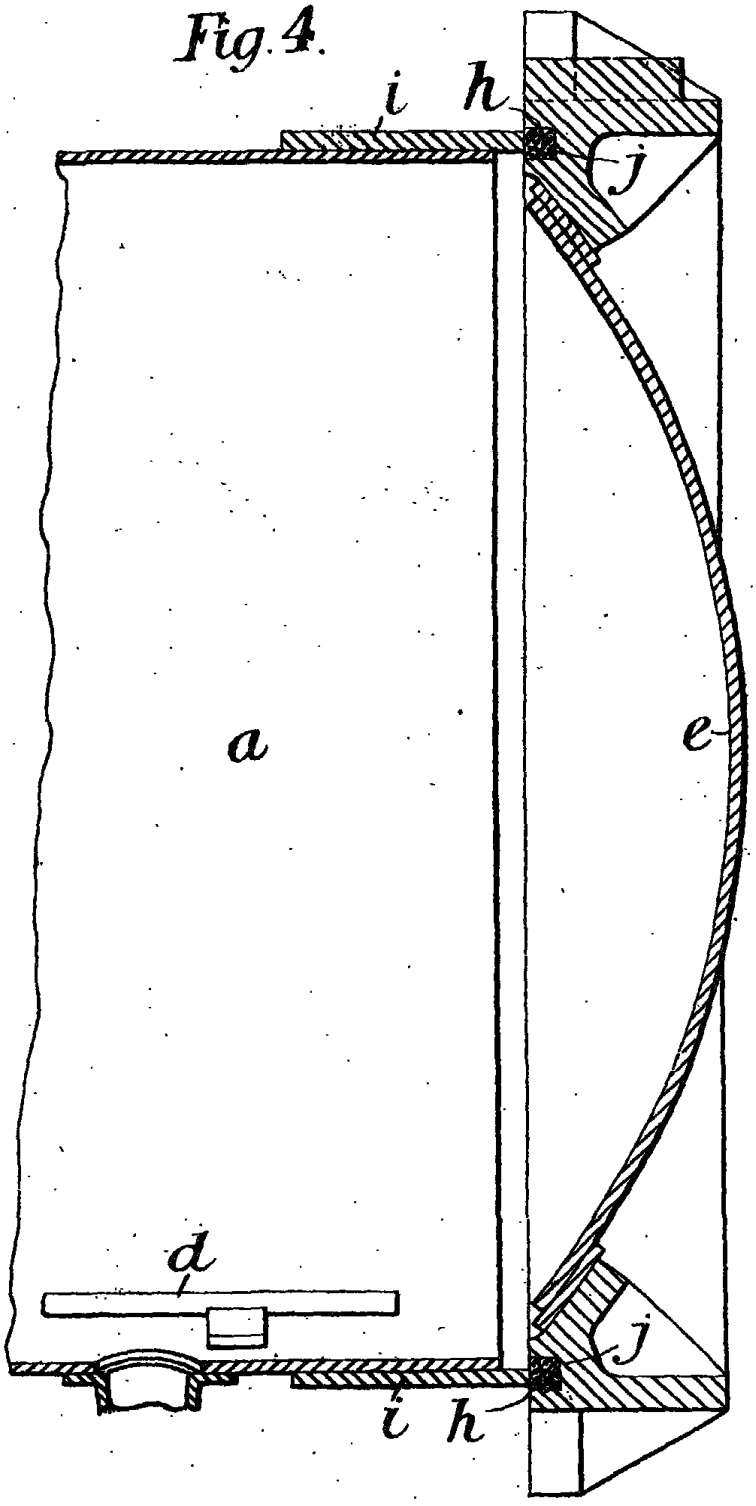
Fig. 4.



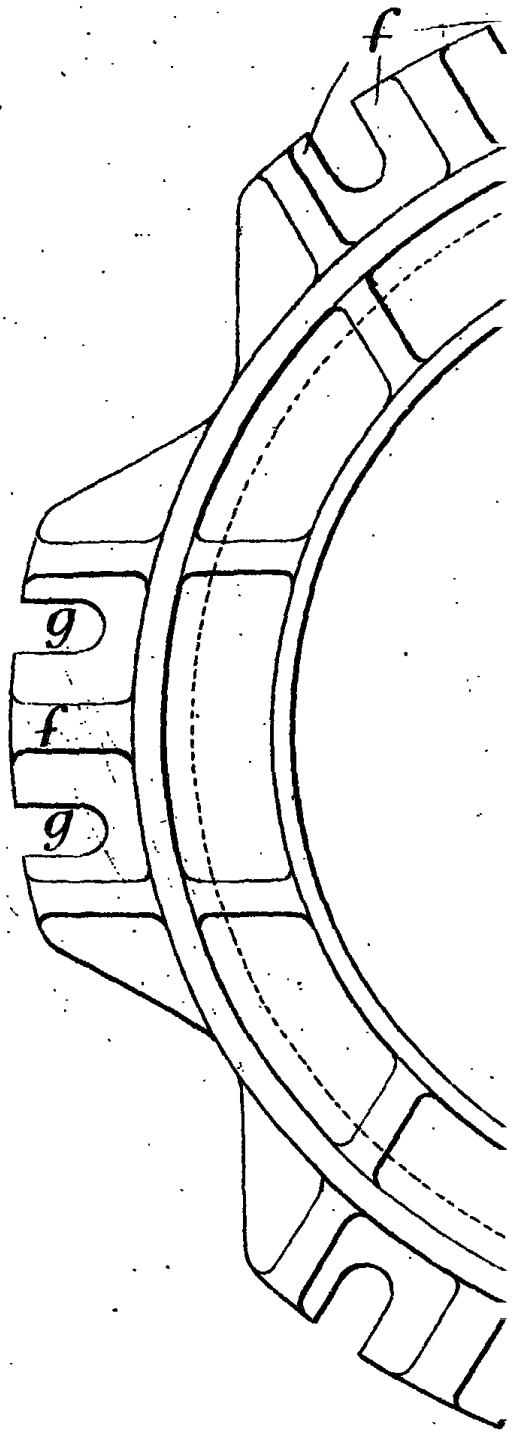


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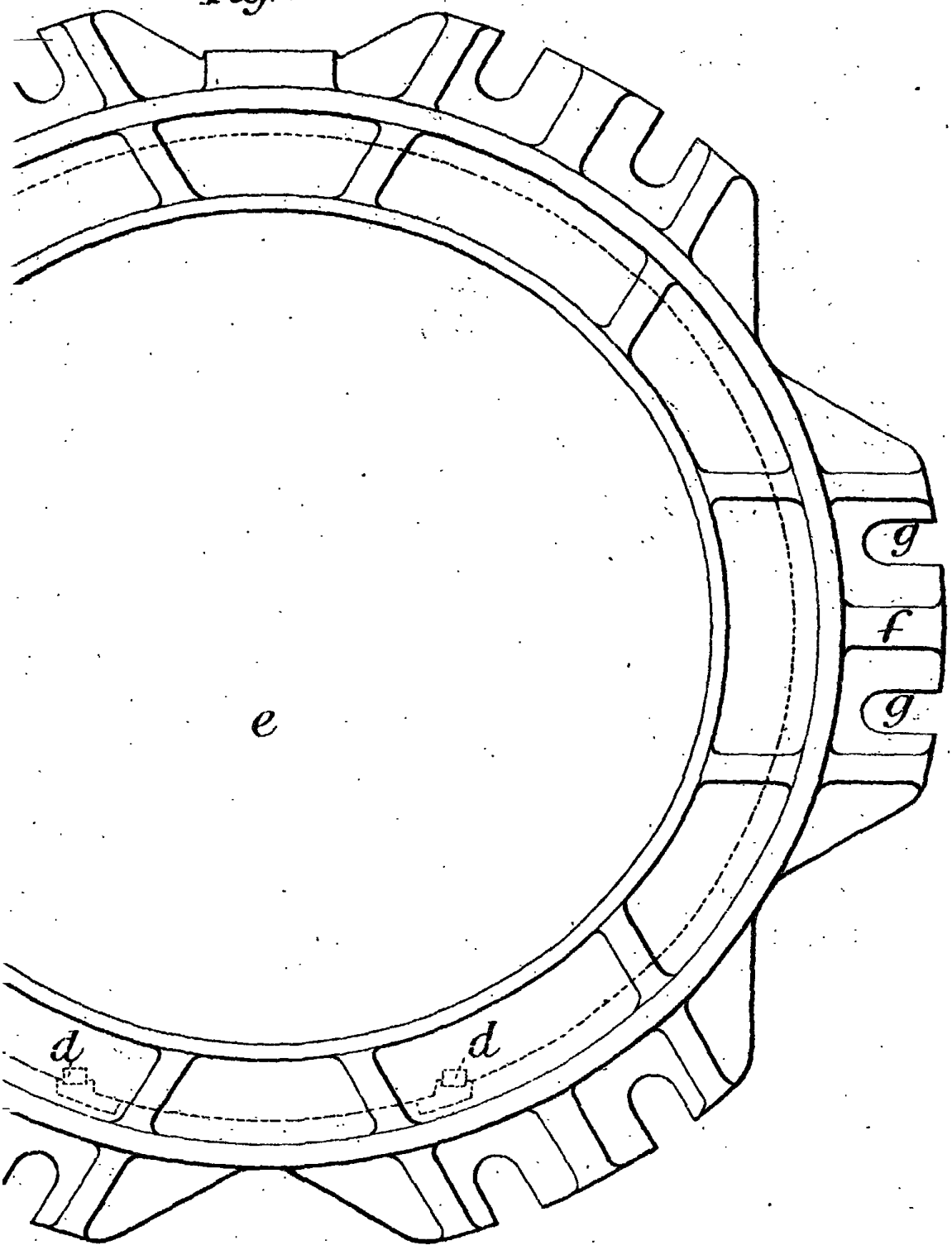
Fig. 5



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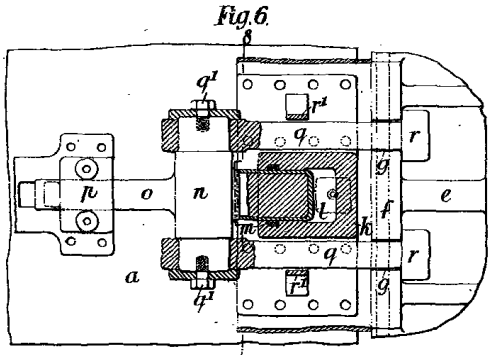

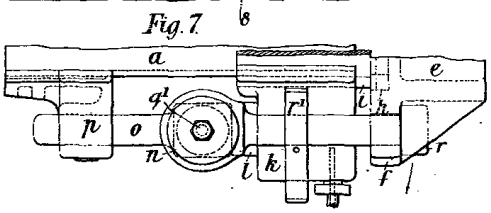

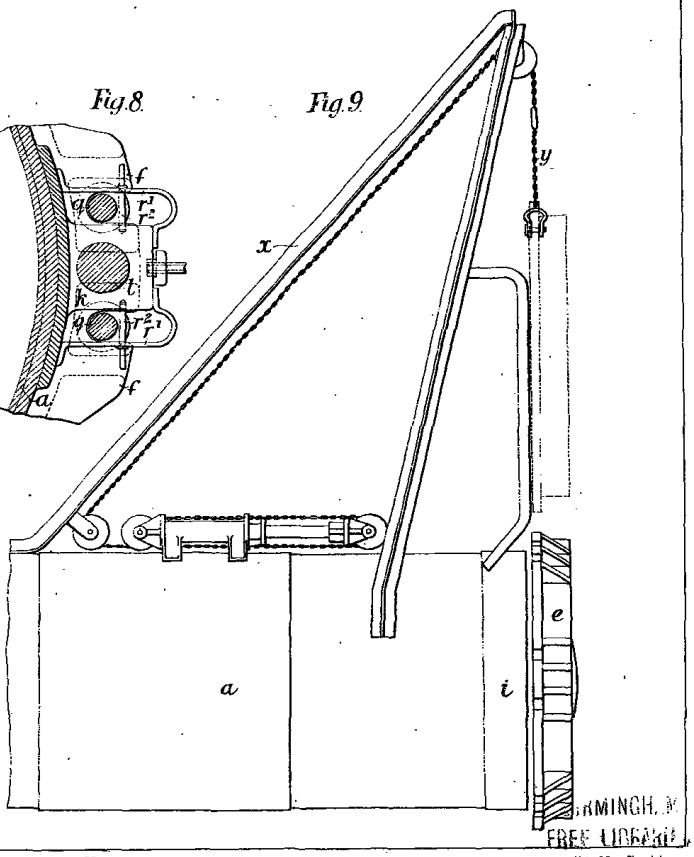

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Fig. 6.

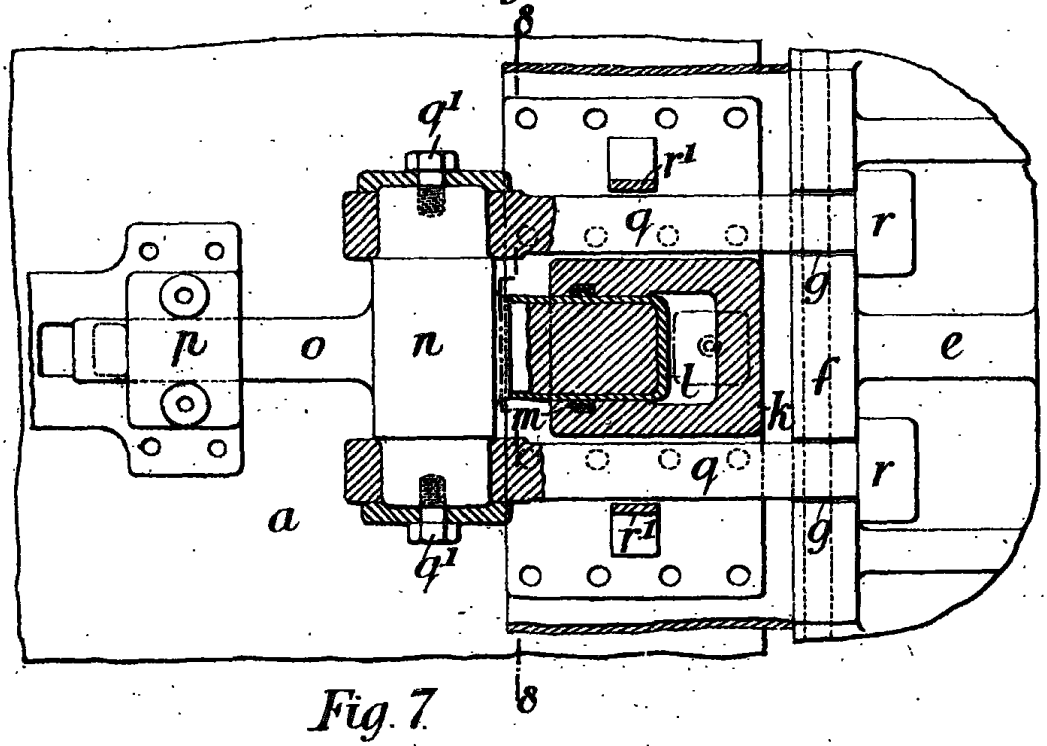
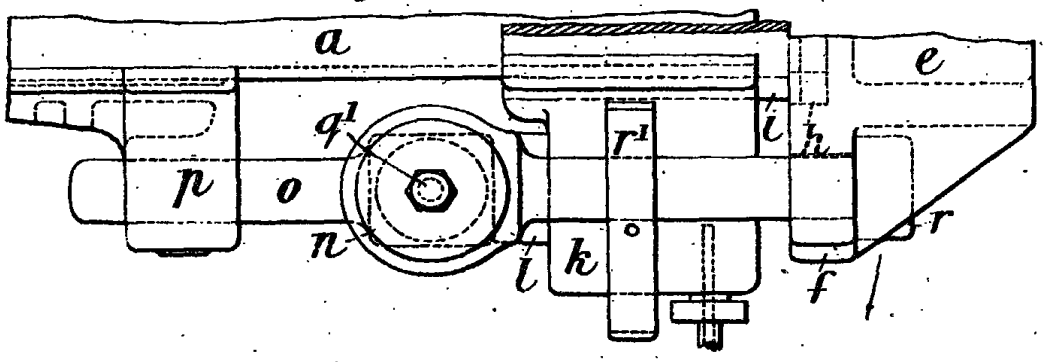


Fig. 7.



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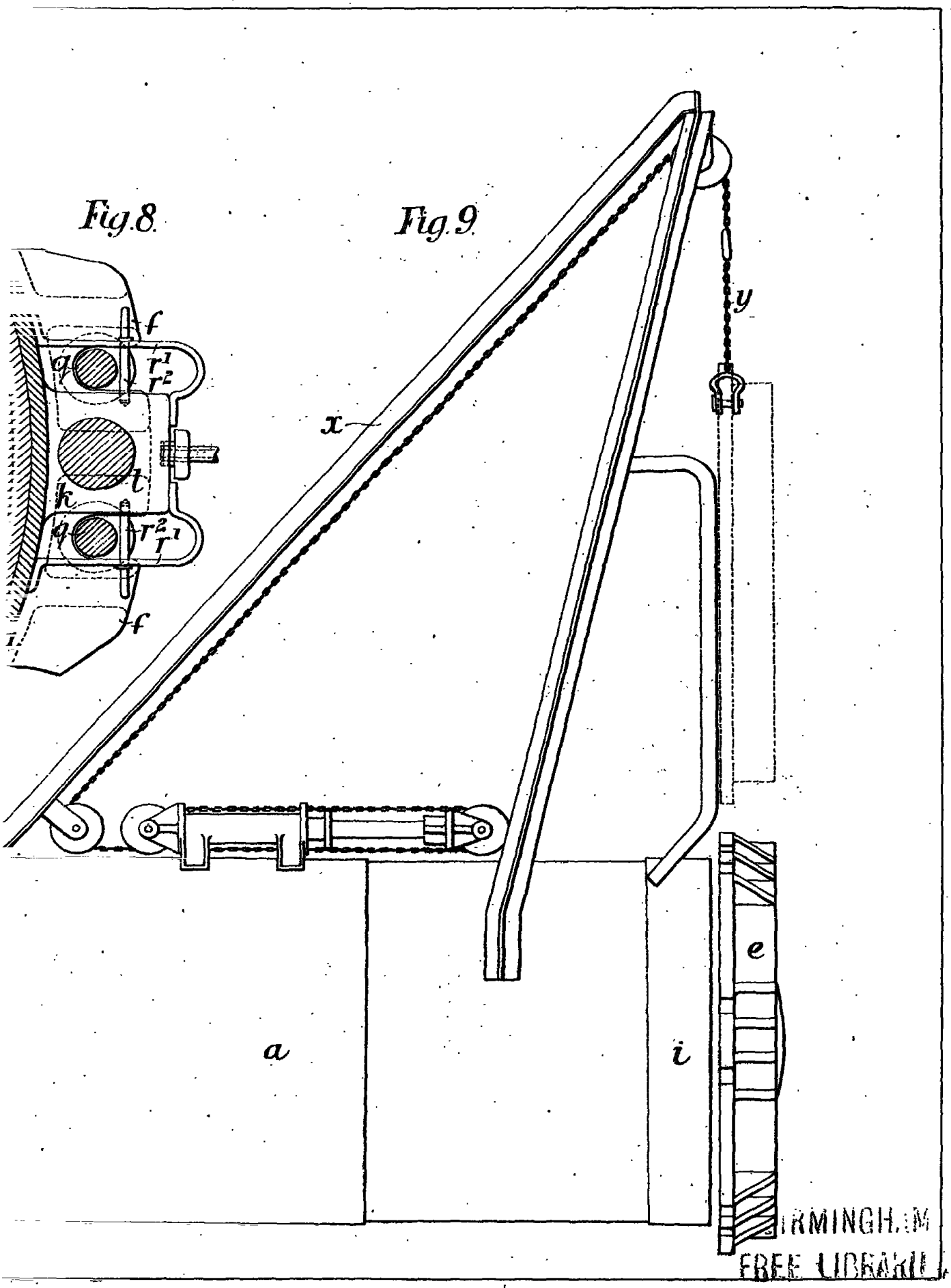

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