

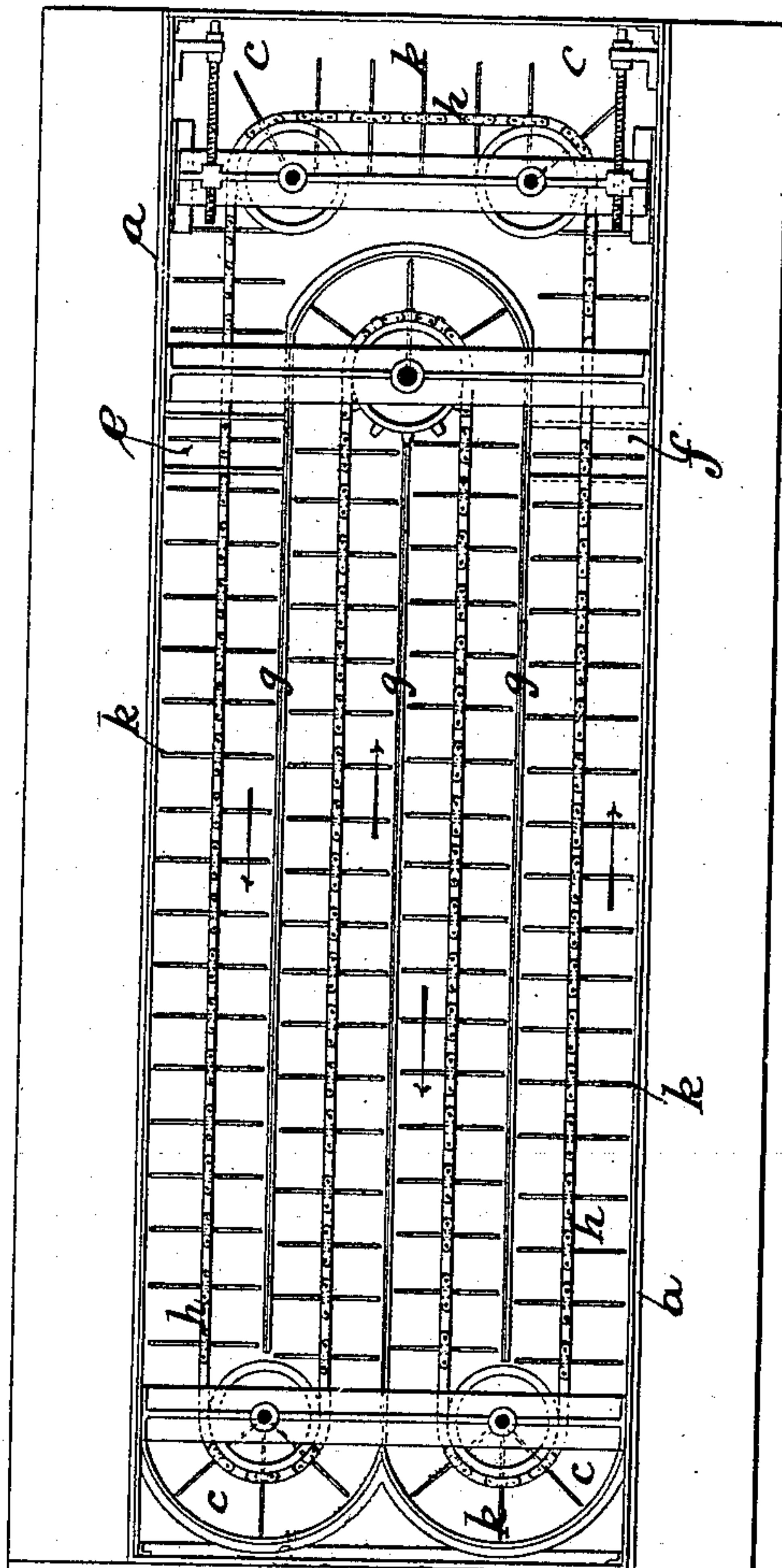
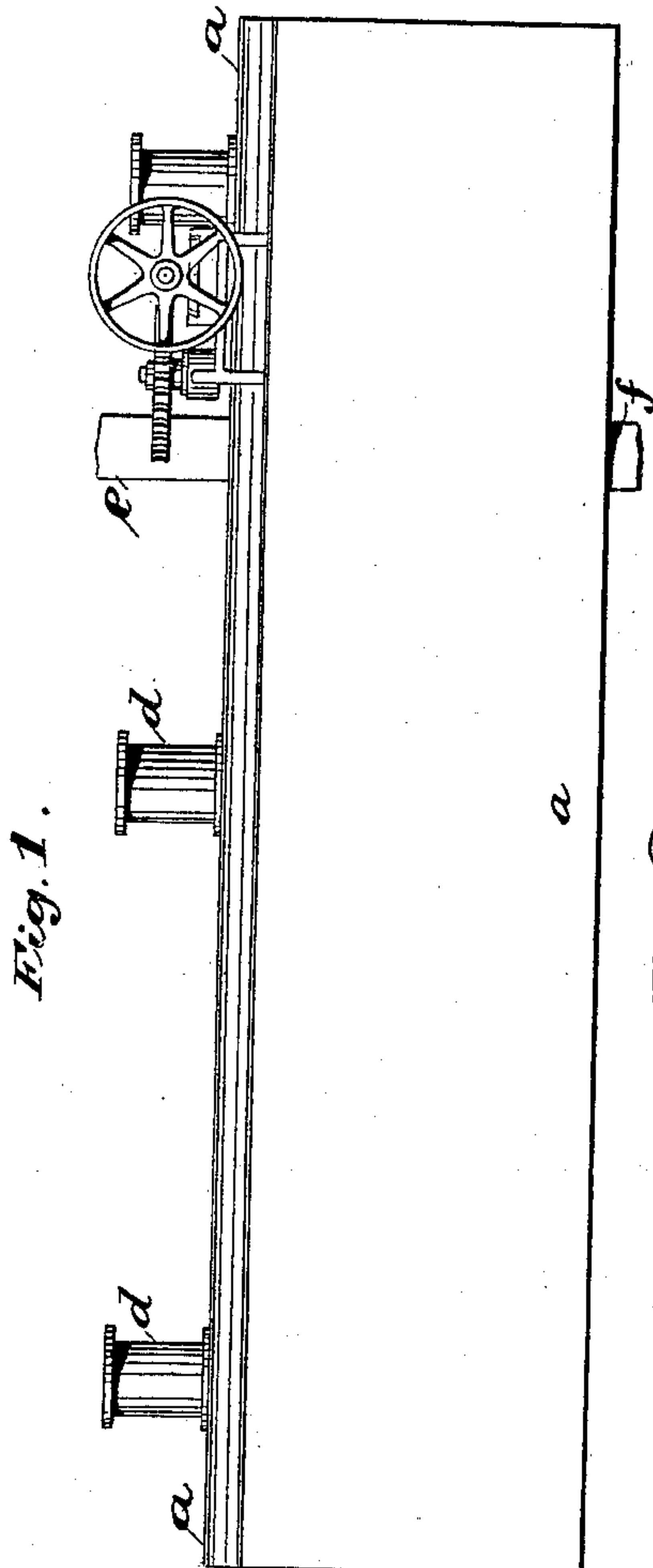
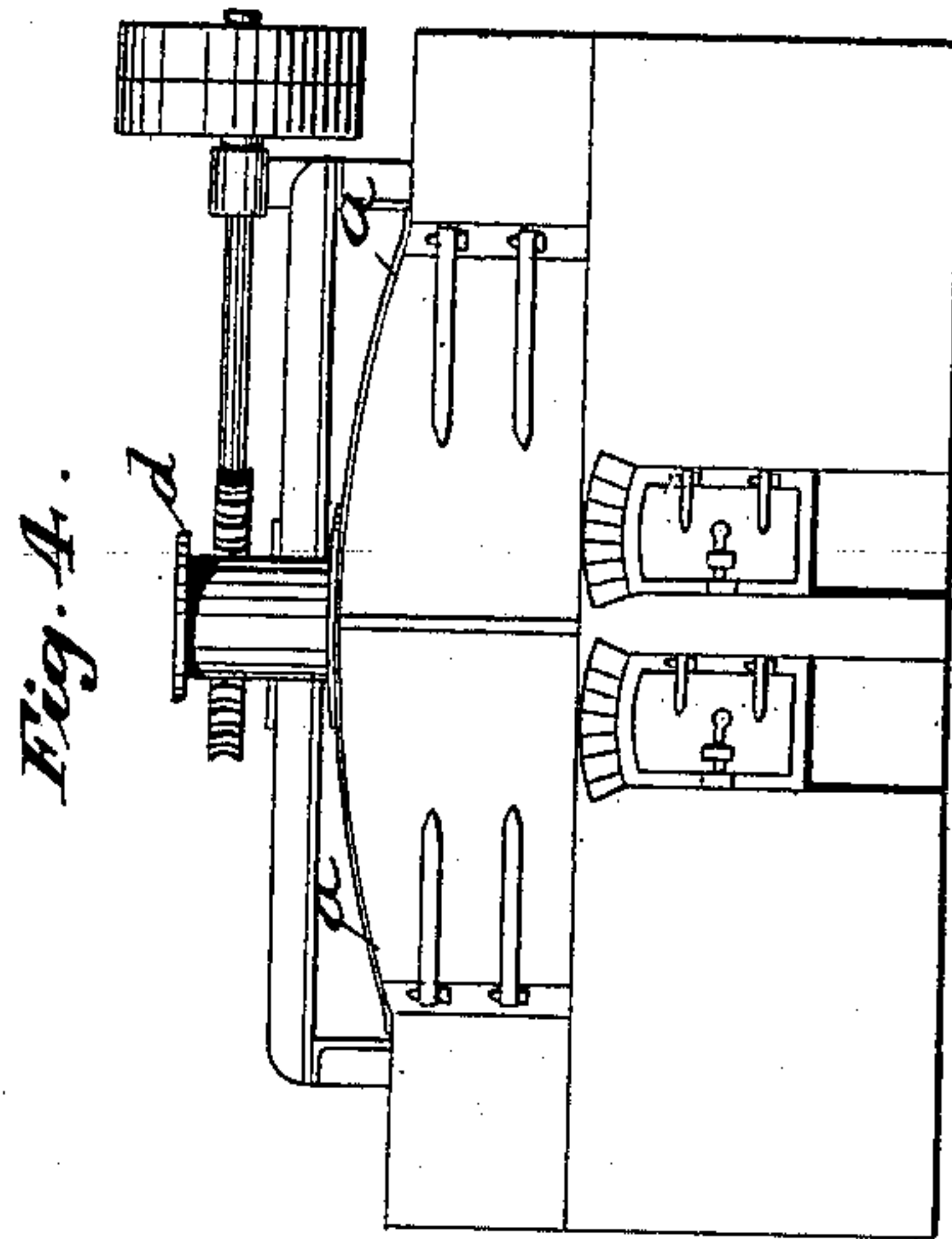
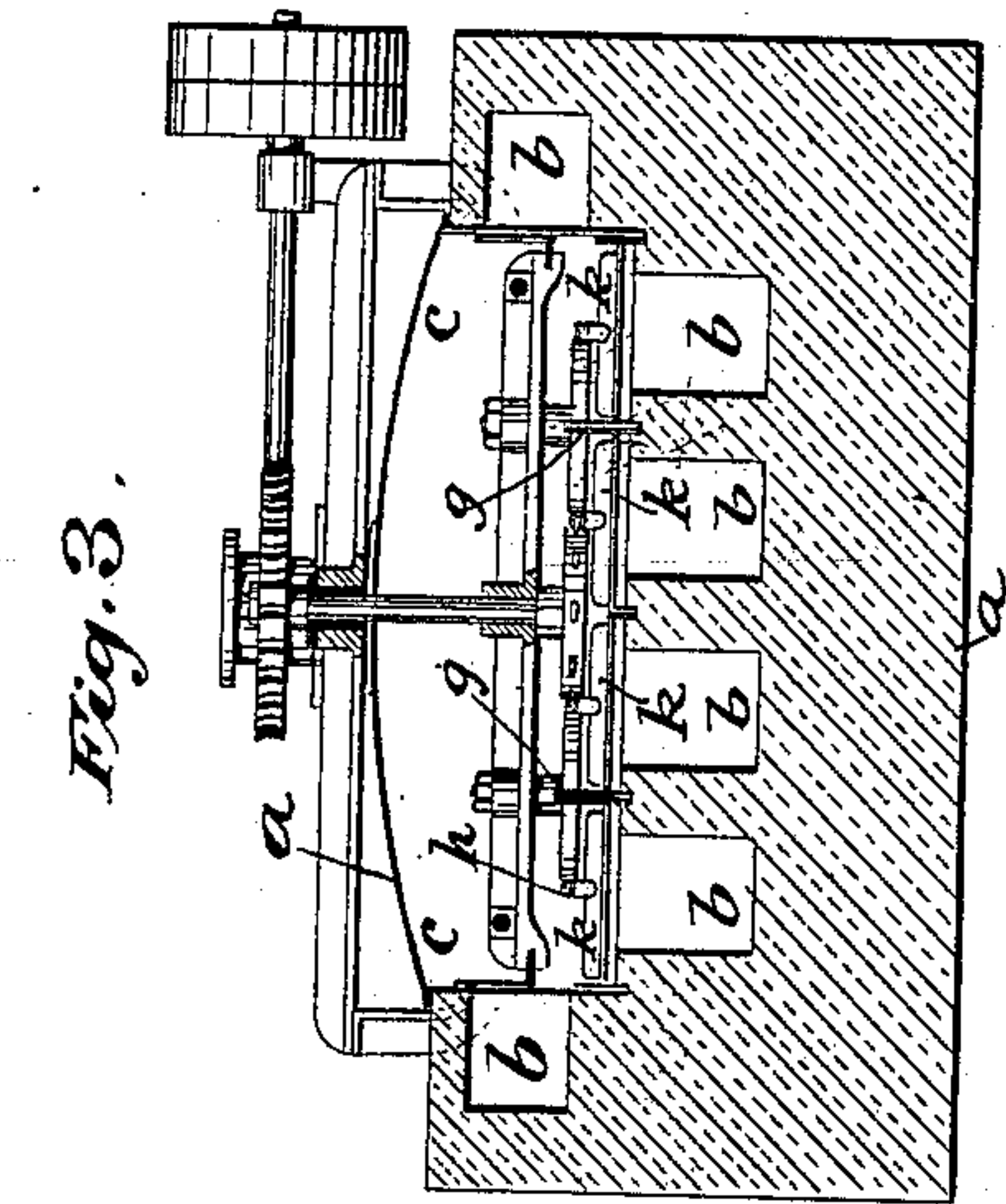
No. 624,166.

Patented May 2, 1899.

W. H. BOWERS.
RETORT FOR DRYING SEWAGE MATTER.

(Application filed Dec. 14, 1897.)

(No Model.)



Witnesses:
C. R. Cotton
O. H. Munk

Inventor:
William Haddfield Bowers
By *Reynolds & R.*
His Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM HADFIELD BOWERS, OF MANCHESTER, ENGLAND.

RETORT FOR DRYING SEWAGE MATTER.

SPECIFICATION forming part of Letters Patent No. 624,166, dated May 2, 1899.

Application filed December 14, 1897. Serial No. 661,816. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HADFIELD BOWERS, a subject of the Queen of Great Britain, residing at West Gorton, Manchester, in the county of Lancaster, Kingdom of Great Britain, have invented certain new and useful Improvements in Retorts for the Drying or Carbonization of Sewage Matter and Generally of Vegetable or other Substances, of which the following is a specification.

My invention relates to improvements in retorts for the drying or carbonization of sewage matter; manure, sludge, cake-peat, wood sawdust, and generally all animal, vegetable, mineral, or other substances, whether in their natural state or in a reduced condition, which it is necessary or convenient to subject to a process of drying or carbonization, the object being to provide means whereby the said treatment is performed more expeditiously and uniformly than heretofore has been the case. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view; Fig. 2, a plan with top removed; Fig. 3, a sectional end view, and Fig. 4 an end view.

Similar letters refer to similar parts throughout the several views.

The invention is intended for use in a retort *a*, constructed with parallel flues *b*, extending longitudinally along and within the retort *a* and lying side by side or in tier or otherwise arranged as may be convenient. (See more particularly Fig. 3.) The space immediately above, adjoining or surrounded by the flues *b*, as the case may be, forms the chamber *c*, in which the material to be dried or carbonized is dealt with. It has one or more ventilating-shafts *d* and a supply-inlet *e* and a discharge-outlet *f* for the material in convenient positions—say the supply-inlet *e* being formed in the roof and the discharge-outlet *f* in the floor of the chamber *c*. The latter is divided into any convenient number of equal spaces or compartments by means of ribs *g*, running parallel to the sides of the

retort, which ribs may be of any desired height, provided they do not obstruct the due distribution of heat in the chamber *c*, and serve to prevent the material under treatment of two adjacent spaces or compartments mixing. An endless chain *h*, by means of sprocket-wheels *i*, is worked along and in a plane parallel to the floor of the chamber *c* through each of the spaces or compartments so formed in the said chamber. The chain *h* is constructed with bars or scrapers *k* fixed thereto and projecting therefrom at each side at convenient intervals. These bars or scrapers are also placed and work in the same plane as and along the floor of the chamber *c* and are of such length as to reach to but at the same time work free of the ribs *g*, placed and fixed in the chamber *c*, as before indicated.

The material to be treated is introduced into the chamber *c* through the inlet *e* and is then swept or dragged through the several spaces or compartments of the chamber *c* by the chain *h* until it reaches the outlet *f*, where it is discharged.

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

1. In combination with the chamber *c*, the flues *b* arranged beneath the bottom thereof and at the sides and a single chain carrying at its under side scrapers passing back and forth over the bottom of the chamber, the said bottom being divided by ribs *g*, substantially as described.

2. In combination, the chamber *c* having the ribs *g* forming a series of troughs or ways side by side and communicating with each other at their ends with a single chain passing over the bottom of the trough and having horizontal scrapers to work the material, substantially as described.

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

WILLIAM HADFIELD BOWERS.

Witnesses:

FERD. BOSSHARDT,
STANLEY E. BRAMAIL.