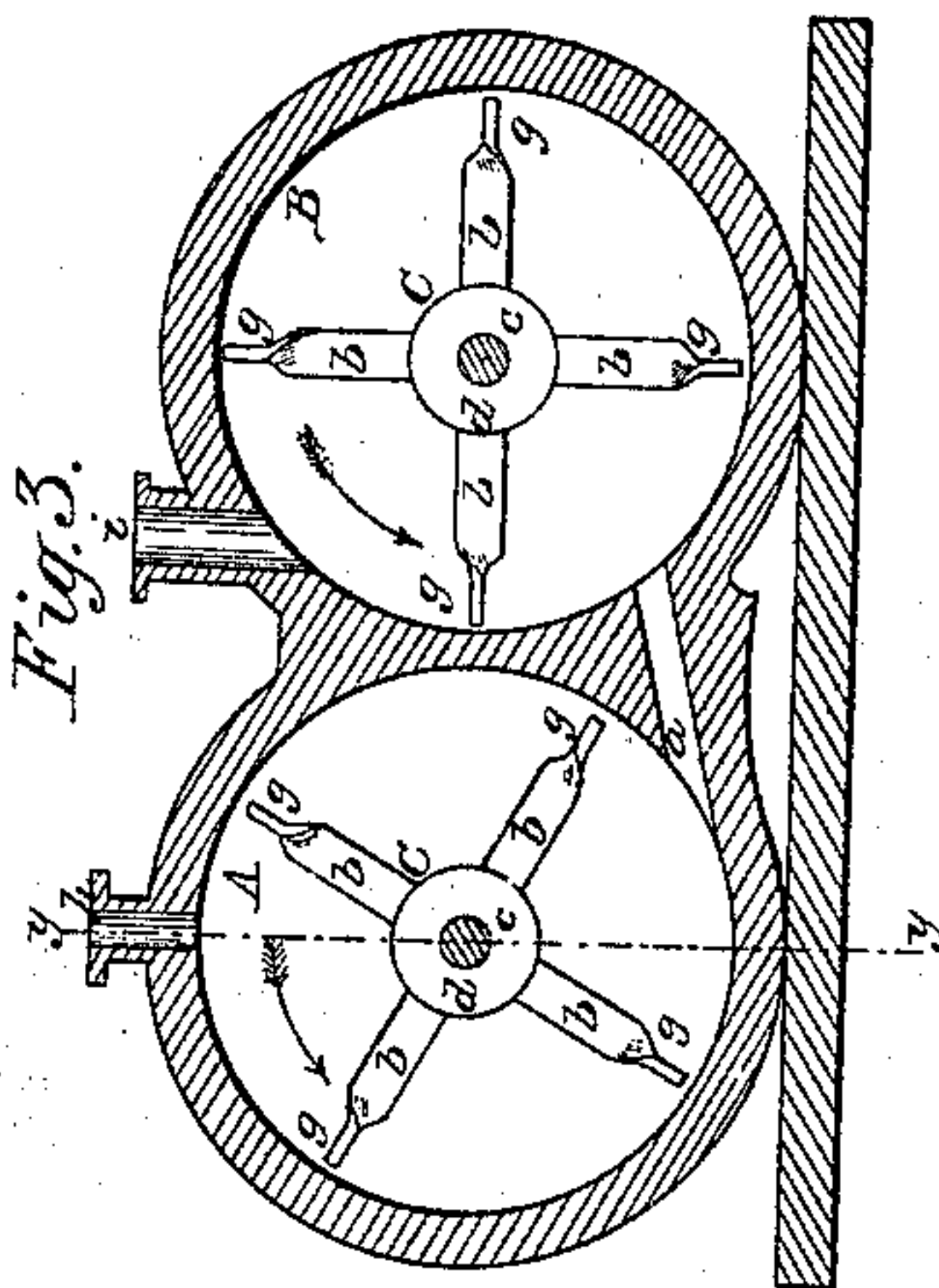
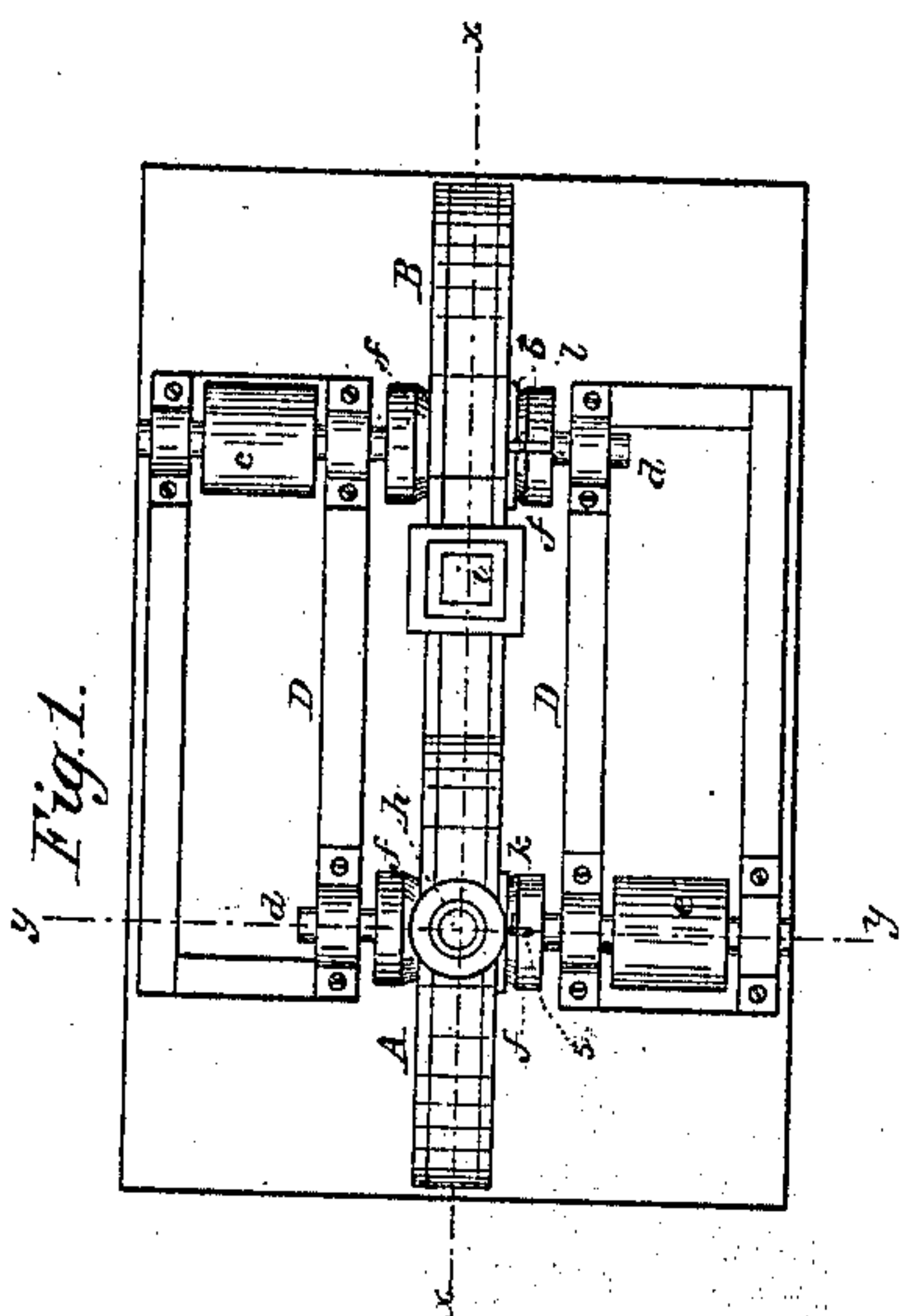
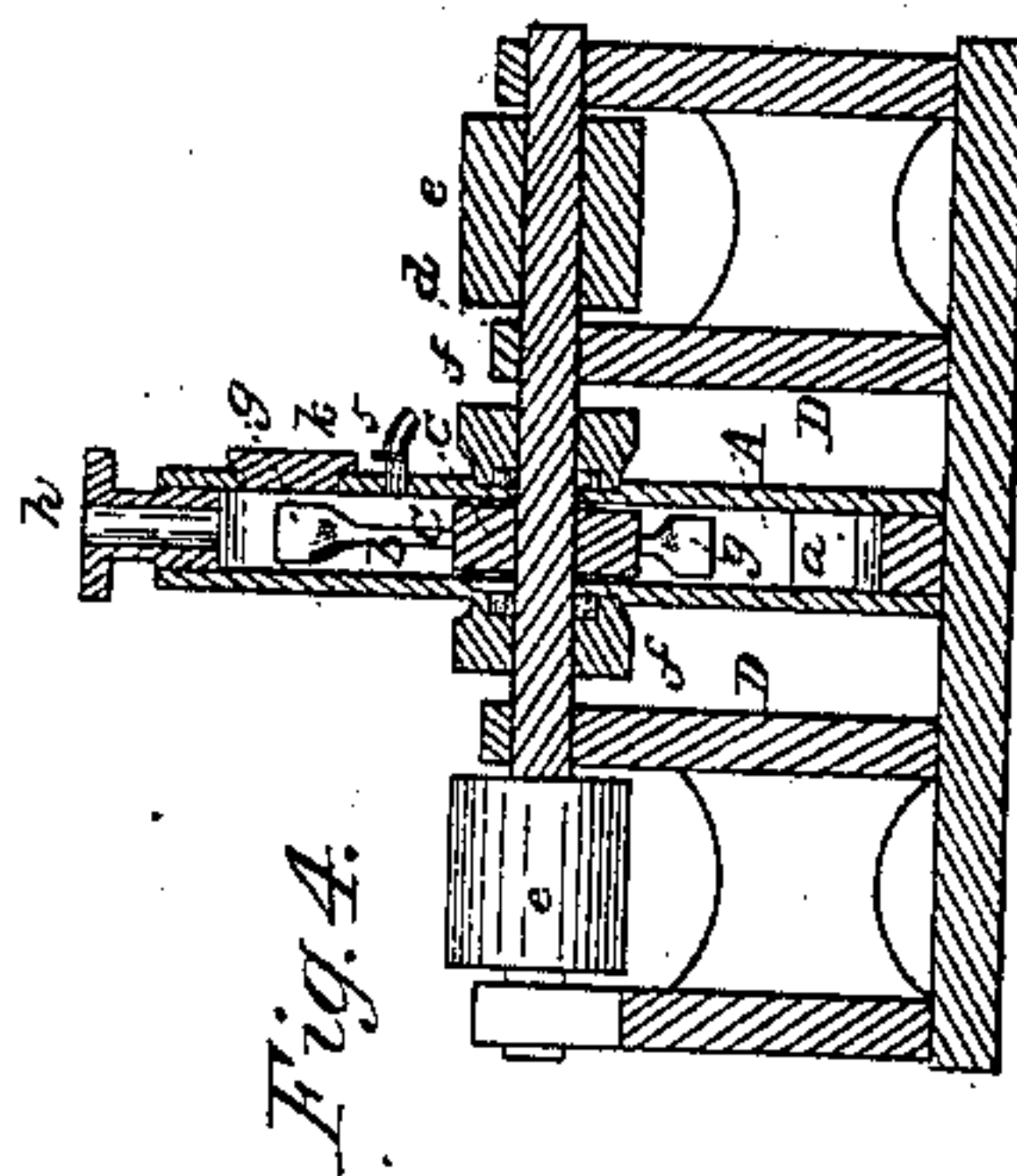
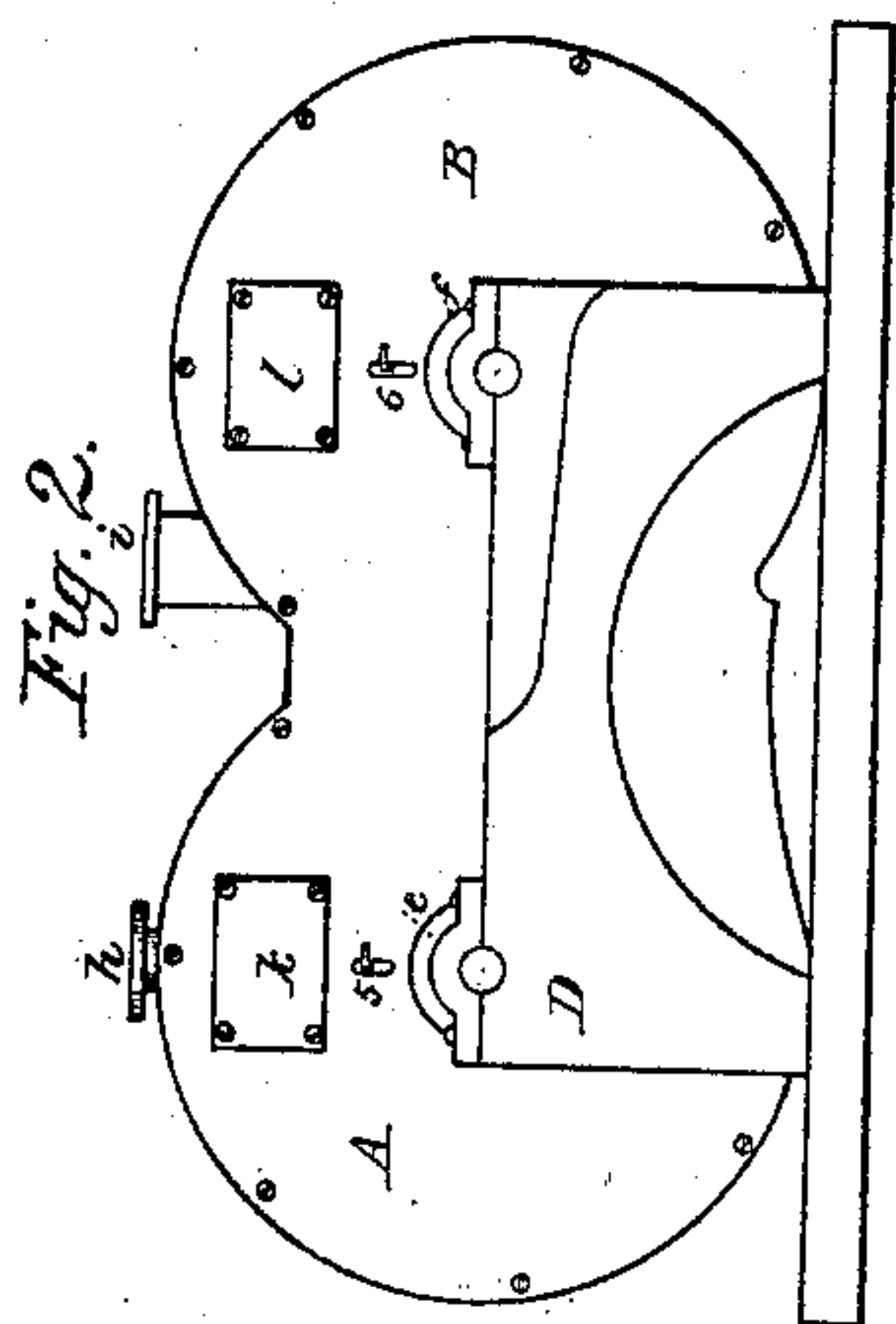


*S. C. Bruce.*

*Imparting Artificial Age to Mines, &c.*

*N<sup>o</sup> 86,640.*

*Patented Feb. 9, 1869.*



*Witnesses.*  
*A. L. St. Lawrence*  
*Max Maeller*

*Inventor.*  
*S. C. Bruce*



# United States Patent Office.

SAMUEL C. BRUCE, OF NEW YORK, N. Y.

Letters Patent No. 86,640, dated February 9, 1869.

## IMPROVED APPARATUS FOR IMPARTING ARTIFICIAL AGE TO WINE AND SPIRITS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, SAMUEL C. BRUCE, of the city, county, and State of New York, have invented an Improved Method of Imparting Artificial Age to Wines or Liquors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of the apparatus which I employ.

Figure 2 is an elevation of one side of the same.

Figure 3 is a longitudinal vertical section on the line  $x x$  of fig. 1.

Figure 4 is a transverse vertical section on the lines  $y y$  of figs. 1 and 3.

All wines and liquors contain a certain oil that imparts the flavor or "bouquet" characteristic of each kind; and it is well known that the breaking up of the oily globules, and the thorough commingling of the oil thus liberated, with the body of the liquor, will impart an artificial age thereto.

This artificial age has hitherto been produced either by subjecting the liquor to a long voyage, or by allowing it to fall, drop by drop, from a height.

The former method, however, consumes considerable time, while the latter is objectionable on account of the large percentage of waste which is caused by evaporation.

My invention has for its object to overcome these difficulties, and to artificially produce the effect of age in wine or liquor, in a rapid and economical manner; this effect being produced by passing it through one or more cylinders, provided with revolving arms or dashers, by which means the liquor is violently agitated, causing the oily globules to be broken up, and their contents thoroughly mixed with the body of the liquor, as required.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A and B represent two air-tight cylinders, arranged closely together, and communicating with each other by means of a peripheral exhaust or passage,  $a$ .

Within each of the cylinders A B is a wheel, or dasher, C, composed of arms or blades  $b$ , projecting radially from a hub,  $c$ , secured to a shaft,  $d$ , which revolves in suitable bearings in the frame-work D, and carries a drum,  $e$ , over which passes the belt (not shown) by which it is driven.

The shafts  $d$  pass through stuffing-boxes  $f$ , and are closely packed, so as to effectually exclude the air from the cylinders A B, which are made perfectly air-tight, except at the points where the liquor is received and discharged. Two cocks, 5 and 6, are, however, provided, for the purpose of admitting air, should it be found desirable.

The outer extremities of the arms  $b$  are provided

with tappets or beaters  $g$ , which, as they revolve, strike against the liquor within the cylinders, violently agitating it, and causing the oily globules to be broken up, and their contents thoroughly commingled with the body of the liquor, as required, to artificially produce the effect of age.

The length of the arms  $b$  is such that a small space will be left between the outer ends of the tappets  $g$  and the inside of the cylinder, so that, as the tappets revolve, a thin sheet or layer of the liquor will be left around the inside of the cylinder, and against this layer the particles of liquor will be thrown or dashed, instead of against the metallic surface of the interior of the cylinder, the particles thus rubbing against each other, instead of against a metallic surface.

The liquor, under a head or pressure, and at a temperature of about 80° Fahrenheit, is introduced through a pipe into the cylinder A, at  $h$ , and is acted on by the tappets  $g$ , which, as they revolve in the direction of the arrow, force it through the exhaust-passage  $a$  into the cylinder B, where it is again violently agitated by the revolving tappets, and discharged at  $i$ , whence it passes to a suitable tank, from which it may be pumped up, and again passed through the cylinders, until it has been subjected to the amount of agitation required to produce the desired effect.

A separate tank must be provided for the liquor which is discharged from the cylinders, in order to obviate the mixing of the treated with the crude liquor, the tank being so arranged that it may be readily connected with the apparatus when it is desired to pass the liquor again through the cylinders.

By heating the liquor to a temperature of about 80° Fahrenheit, as above described, the size of the globules is increased, and the process thereby facilitated.

The wheels or dashers C within the cylinders may be revolved at an equal velocity. I prefer from two thousand to three thousand five hundred revolutions per minute, the discharge-opening  $i$  being of sufficient size to admit of the apparatus clearing itself without the necessity of causing one wheel to revolve at a greater velocity than the other.

The wheels or dashers may, however, be made to revolve at different velocities, if preferred.

Instead of passing the liquor through two cylinders, as above described, it may be made to pass through one cylinder only, the operation being repeated until the desired effect has been produced, or it may pass through a series of three or more cylinders, suitably connected together, if preferred.

Access is obtained to the interior of the cylinders through "man-holes," which are provided with suitable covers,  $k l$ , fig. 2.

I do not confine myself to an apparatus constructed precisely as above described, as it is evident that it may be varied to a considerable extent, without departing from the spirit of my invention; and by means



of an apparatus constructed substantially as above described, I am enabled to artificially produce the effect of age, in any variety of wine or distilled liquor, in a much more rapid and economical manner than has hitherto been found practicable.

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

One or more cylinders, each provided with a dasher,

*C*, and blades *b*, in combination with the shaft *d* and drum *e*, or their equivalents, substantially as and for the purpose set forth.

S. C. BRUCE.

Witnesses:

A. L. R. HALLOWELL,  
MAX MOELLER.