

J. W. COCHRAN.

Liquor Gage.

No. 17,185.

Patented April 28, 1857.

Fig. 1

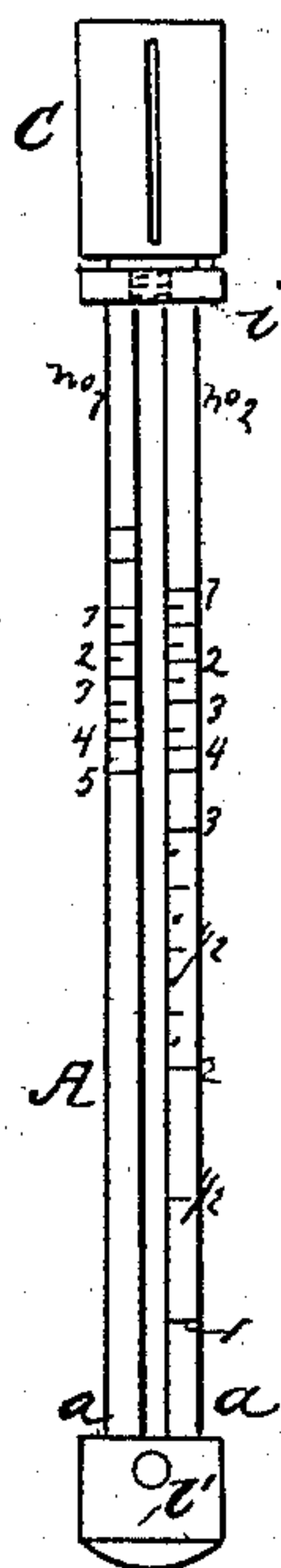


Fig. 2

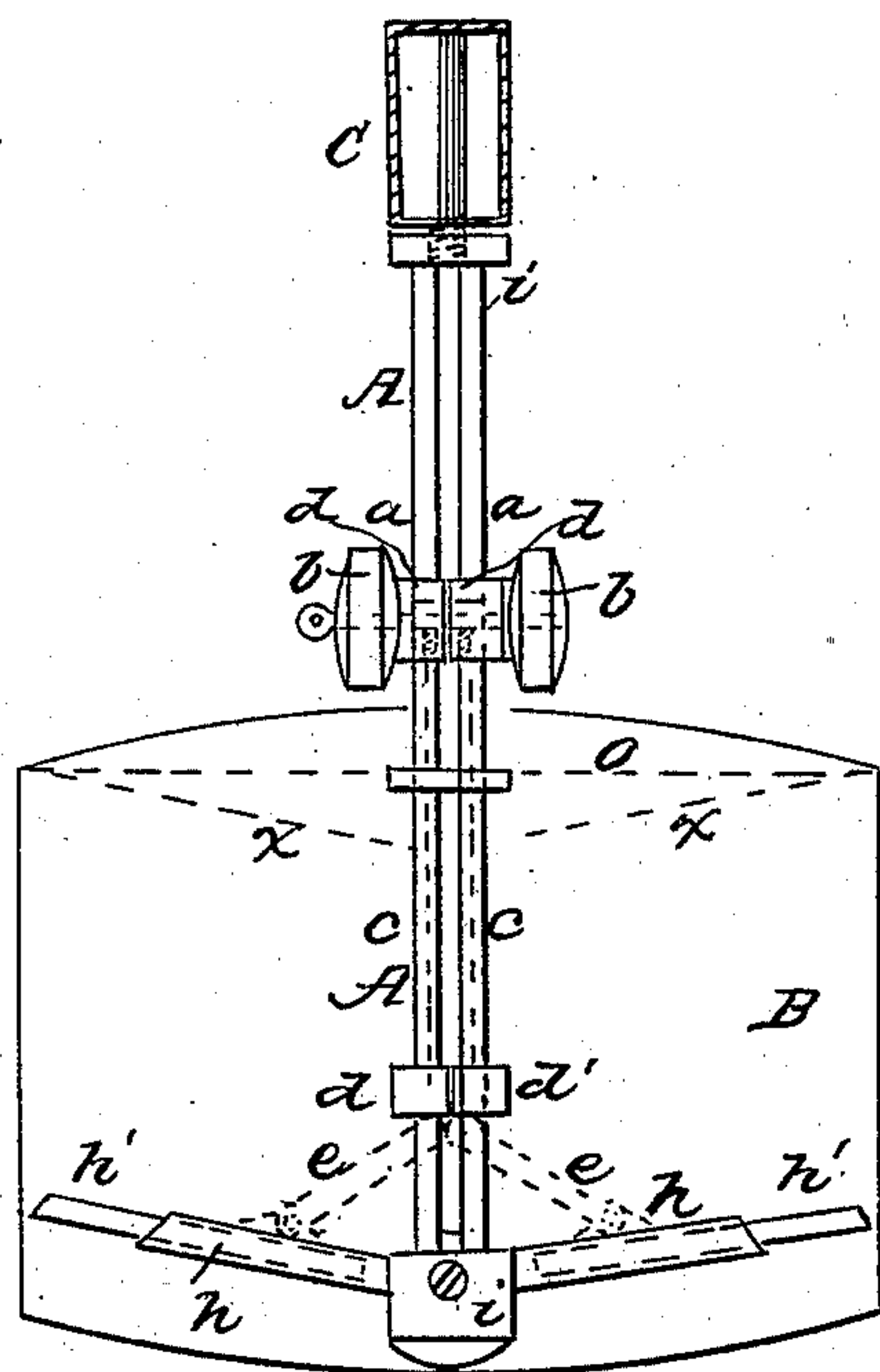


Fig. 3

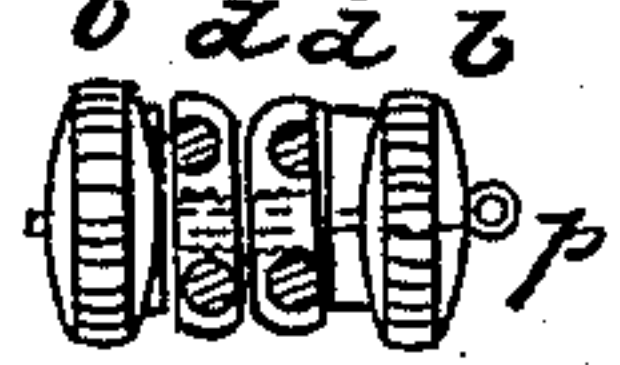


Fig. 4

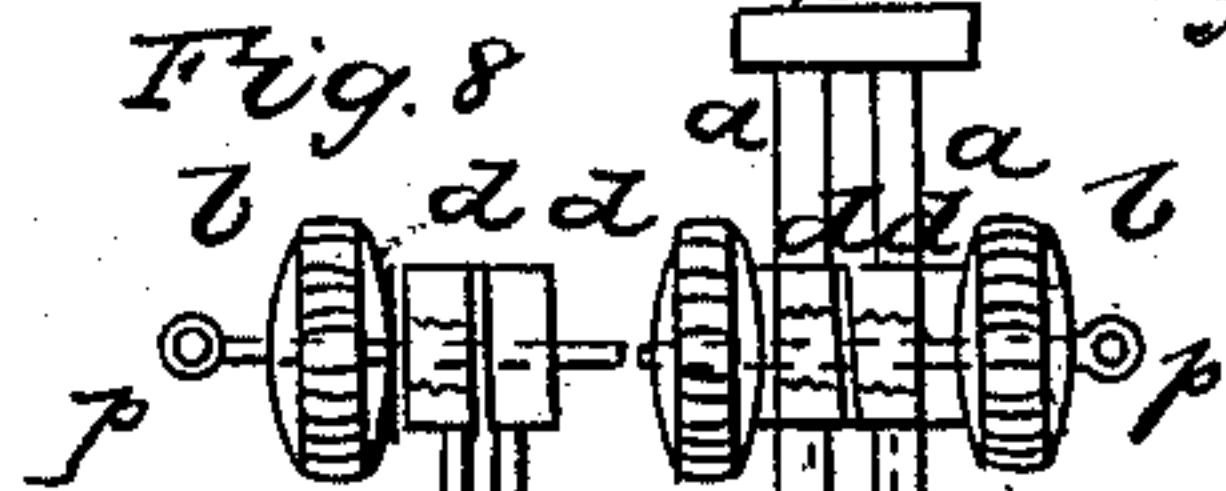


Fig. 5



Fig. 6

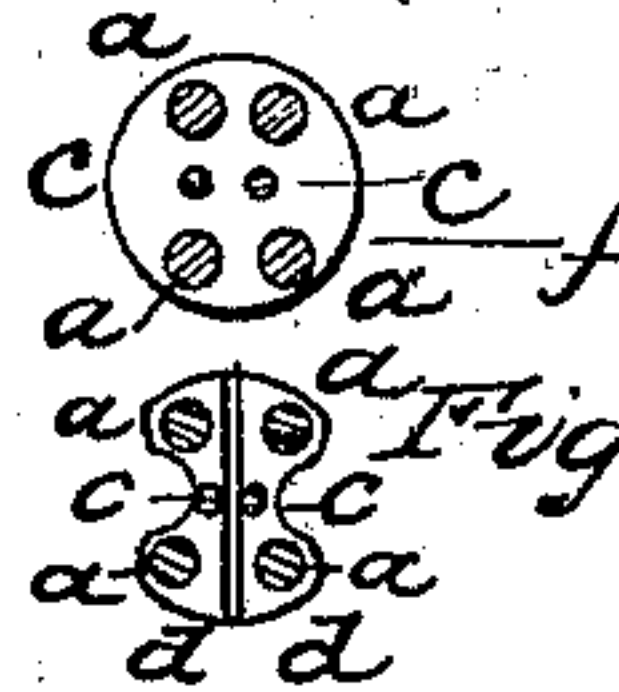


Fig. 7



Fig. 10

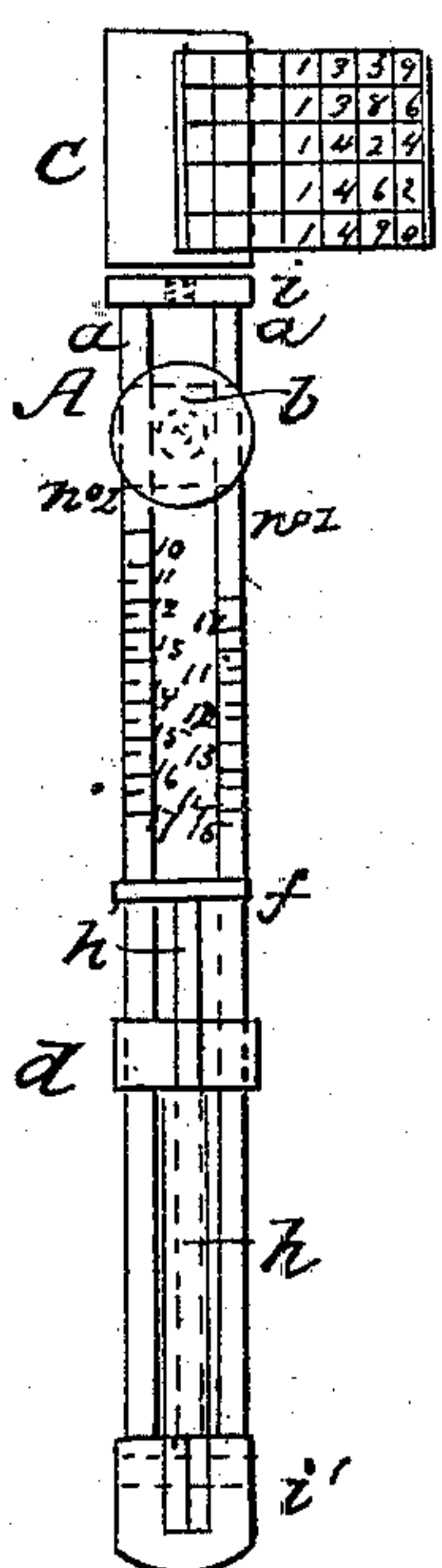
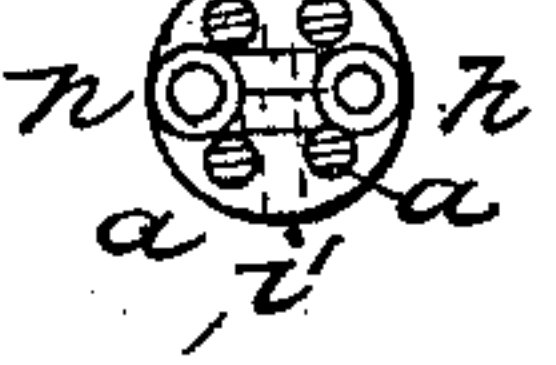
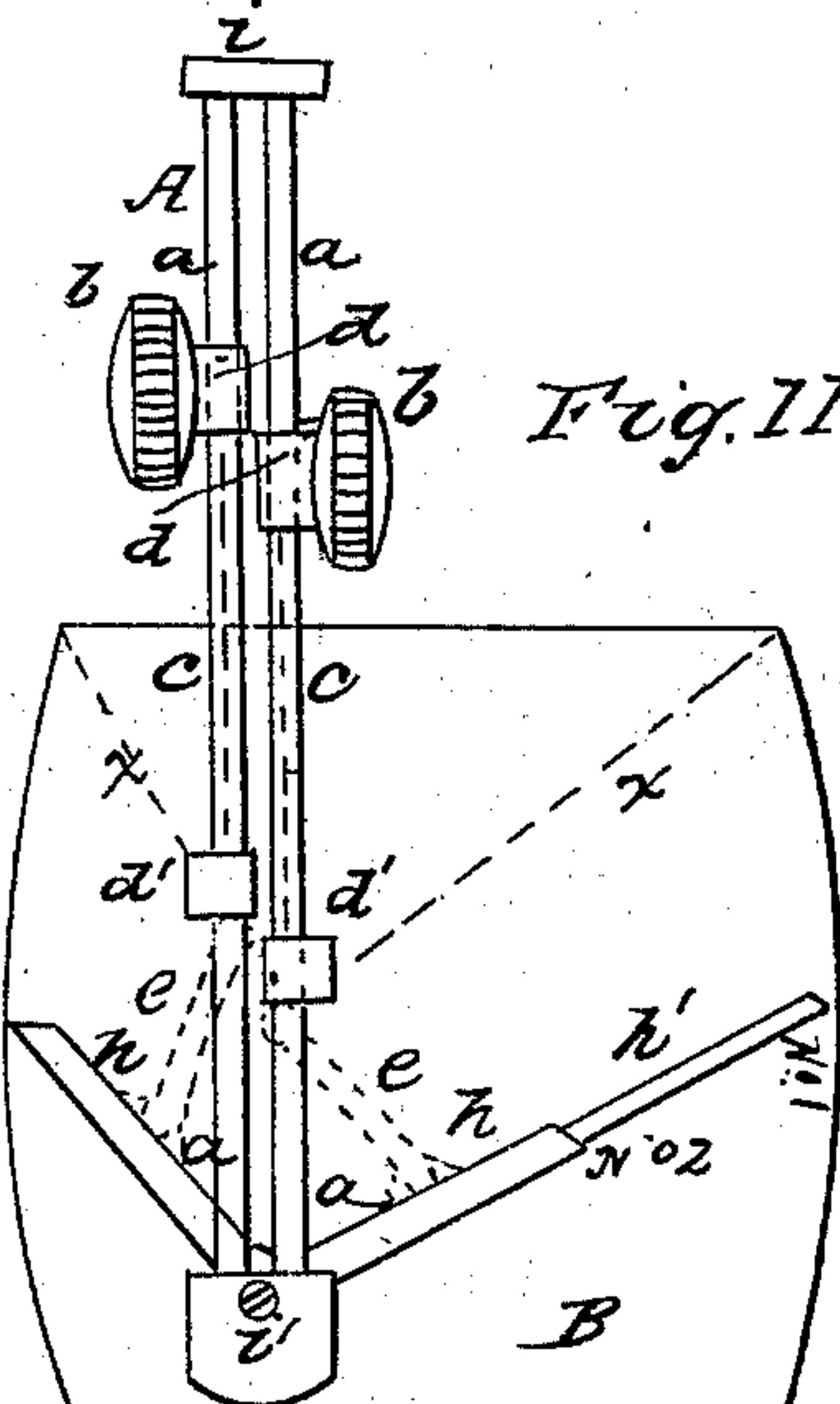


Fig. 11



Inventor

J. W. Cochran

UNITED STATES PATENT OFFICE.

JNO. W. COCHRAN, OF NEW YORK, N. Y.

GAGE FOR CASKS.

Specification of Letters Patent No. 17,185, dated April 28, 1857.

To all whom it may concern:

Be it known that I, JOHN WEBSTER COCHRAN, of the city, county, and State of New York, have invented new and useful Improvements in Cask or Liquor Gages; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

10 The same letters apply to like parts in all the figures.

I make my gage by connecting a number of small tubes or rods as hereinafter set forth. I first form stock or frame A, of said instrument by attaching four tubes or rods 15 *a, a, a, a*, to top and bottom pieces *i*, and *i'*. Said rods act as guides or slides which carry the sliding plungers *d, d*, and *d', d'* also connecting rods *c, c*, (those parts that are out of sight are marked in red ink). Set or 20 thumb screws *b, b*, and connecting pin *p*, lower plungers *d'* and *d'* are attached to the short arms *e, e*, which are also attached to the telescopic or measuring arms *h, h*, and *h', h'*. It will be readily seen by reference to the drawing that by moving the thumb or set screws up or down the arms *h, h*, and *h' h'* can be extended or folded up and retained at any required point or degree by 30 a turn of the set screws *b, b*, which firmly hold the sliding plungers *d, d*, to the rods *a, a, a, a*, and the distance the points of the measuring arms *h' h'* are a part will be known by reference to the scales marked on 35 the rods *a, a*, as the figures next to the underside of the sliding plungers *d, d*, indicate the exact measurement made by the extended arms *h' h'*. When it is required to shorten the said arms for a smaller cask or vessel 40 the arms *h' h'* are run into the hollow arms *h, h*, to a given point marked No. 2, which corresponds with scale No. 2 on rod *a*. When it is required to gage a cask with the bung hole out of the center, or is in the head at 45 one side, then the instrument must be worked differently, the arms can be detached from each other by removing the connecting pin (*p*), which passes through the set screws *b, b*, and sliding plungers *d, d*, then each set screw plungers *d, d*, connecting 50 rods *c, c*, arms *e, e*, measuring arms *h, h* and *h' h'* are free and work independent of each other. The measurement of each arm must be added together to get the mean diameter of the cask (see Fig. 11.)

C, C, is a disk or cylinder attached to top

piece (*i*) with a table rolled up like a measuring tape line inside, which has all the calculation made upon it showing the capacity and the contents of any cask without the necessity of making any figures or calculations. 60

Figure 1— is a view of the stock or frame A, with the arms and the parts connected with them removed, showing only the four rods 65 *a, a, a, a*, and the top and bottom pieces (*i, i'*) and table disk C attached with the scales marked thereon, on one rod commencing at the lower end at (*i'*) and running upward sufficient to give the diameter at the 70 bung downward when the gage is inserted into the bung of course with all the arms closed or folded up. The upper scales marked Nos. 1 and 2 are to show the measurement of the expanding arms by looking 75 at the figures underside of the sliding plungers *d, d*.

Fig. 2— represents the instrument A, inserted into cask B, with the arms *h' h'* extended to the heads of the cask. The gager 80 will note the length between heads by reference to the scale of the rods *a, a*. Then to find the diameter of the cask at the heads the gager has only to raise the gage A, up until the points of the arms *h' h'* come in 85 contact with the staves on the upper or bung side of the cask as shown by the dotted lines *x, x*. The bung diameter scale, on rod *a*, will show how far it has come out of the cask, and the arm scale will show where the 90 dotted line *o*, would cross and the depth of the curve or bulge of the staves would be at once known, double that, or add the same number of inches for the depth of curve for the opposite side and deduct that from the 95 bung diameter and the remainder will be the last diameter of the heads. I call that scale on the main part or stem of the gage the arm-scale because it indicates the degree of expansion of one or both of the arms when 100 extended for measurement. If it should be found that the heads were not of equal diameter then each head must be found separately by working the arms independent of each other. To get the diameter of the 105 cask at right angles with the bung diameter to find if the cask is oval or not the arms must be closed up a little and turned across the cask. Then the gage, A, can be removed from the bung by shutting up the arms by 110 raising up the thumb screws as high as permitted to go.

Fig. 11, represents the gage A, inserted into a cask, B, with the bung in the head and at one side, where it is used with the connecting pin (*p*) removed and the set screws, plungers, arms, &c., are working separate and independent of each other, with one long and one short arm, taking different measurements. Their sums must be added together to obtain the mean diameter of the cask.

Fig. 9, represents the gage A, with the arms closed up between the rods *a, a, a, a*. This is the view the instrument would have when it is inserted into the bung hole of a cask. Then the arms would be let free by backing the set screws and the measurements would be made as above described, the disk or cylinder C, at top with the table unrolled so the proper figures can be seen that will give the capacity of the cask referring to the length and the diameter columns.

Fig. 4, is a view of the opposite side of the same instrument A, showing the arms folded up.

Fig. 3, is an end view of Fig. 4, with the top piece (*i*) removed showing the rods *a, a, a, a*, the sliding plungers *d, d*, thumb screws *b, b*, and connecting pin (*p*); Fig. 8, detailed view of sliding plungers *d, d*, with one set screw *b*, attached connecting pin (*p*) and rods *c, c*, lower sliding plungers *d' d'* with arms *e, e*, attached; Fig. 5, side view of set screw showing the hole through the center of the screws for the connecting pin

(*p*) which holds both plungers and all the parts thereto attached together so that the arms work equally with each other whether the arms measure the same or not, as one can be set longer than the other which does not affect the operation of the instrument.

Fig. 6 is a top view of the stay piece (*f*) to support the rods *a, a, a, a*; Fig. 7, top view of the lower sliding plungers showing the rods *a, a, a, a*, and *c, c*, in section. On opposite side is a half round groove made to receive the arms *h' h'* when the gage is closed up.

I do not intend to confine myself to this particular manner of constructing my gage but in any well known way so long as it is substantially the same in effect.

Having fully and clearly described the construction and operation of my improvements, what I claim as my invention and desire to secure by Letters Patent is—

1. The arrangement of the sliding plungers and set screws in relation to the connecting rods and measuring arms, by which I am enabled to work each arm independent from the other, and gage casks or vessels whether the bung hole is in the center in the head or elsewhere.

2. I claim making the measuring arms adjustable as herein set forth.

J. W. COCHRAN.

Witnesses:

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