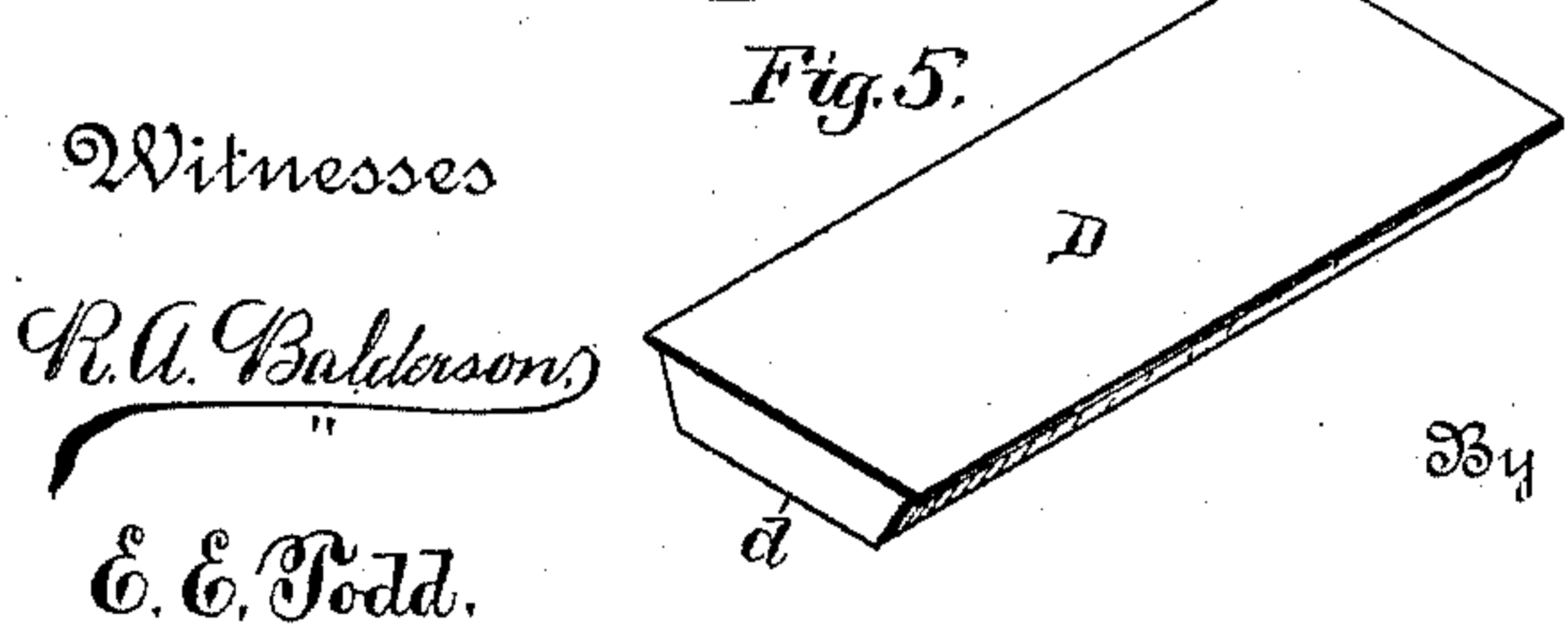
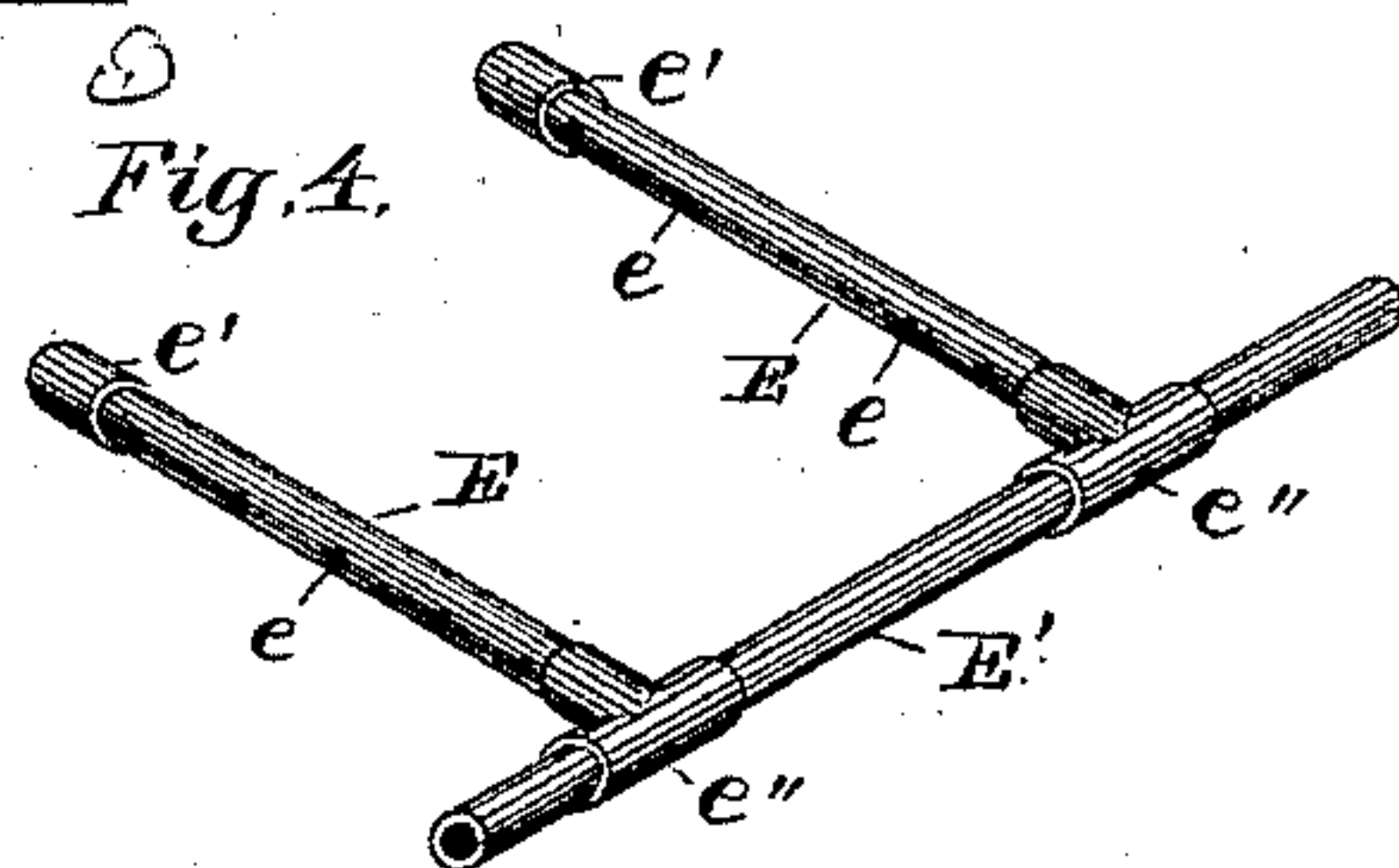
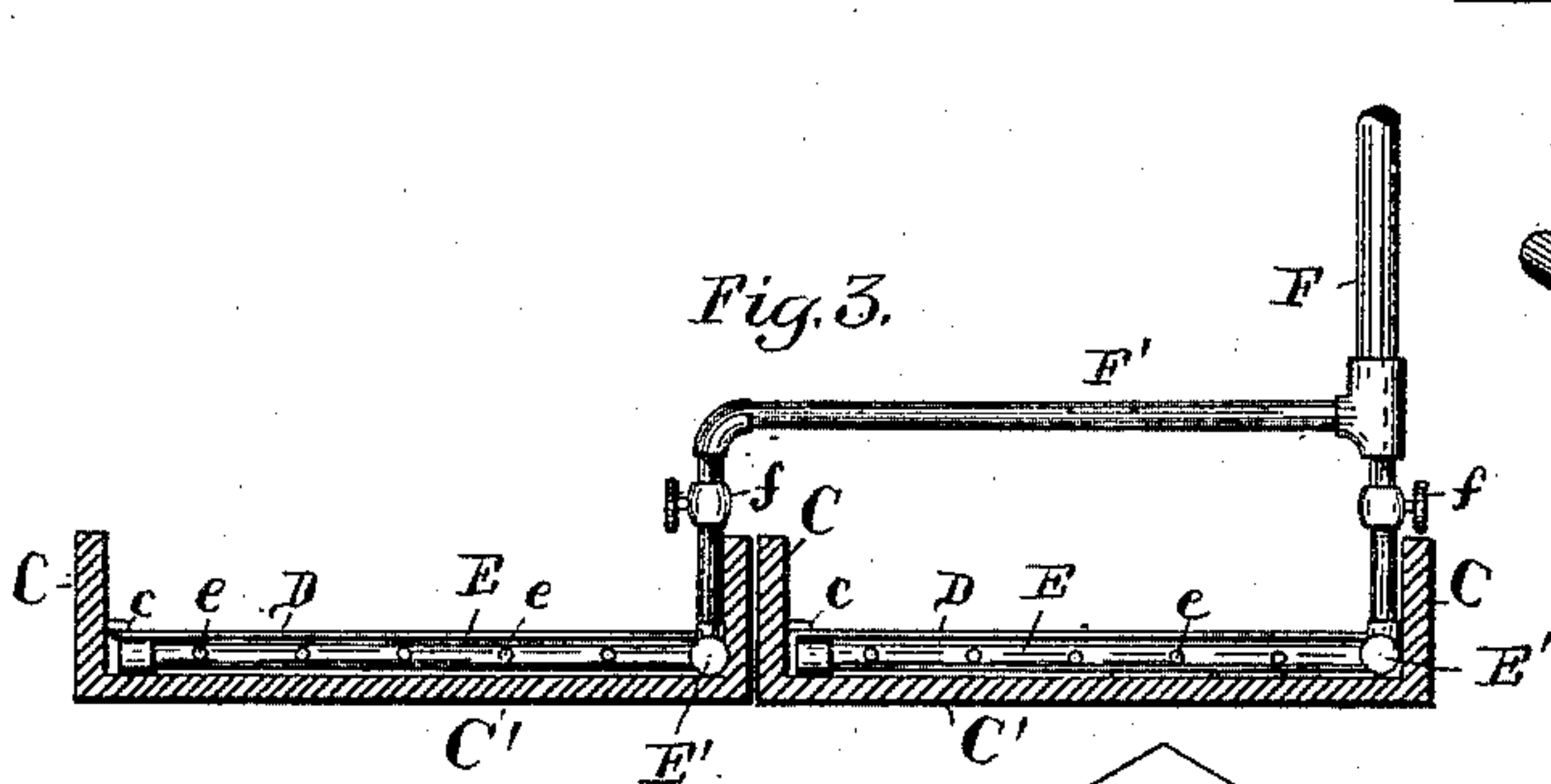
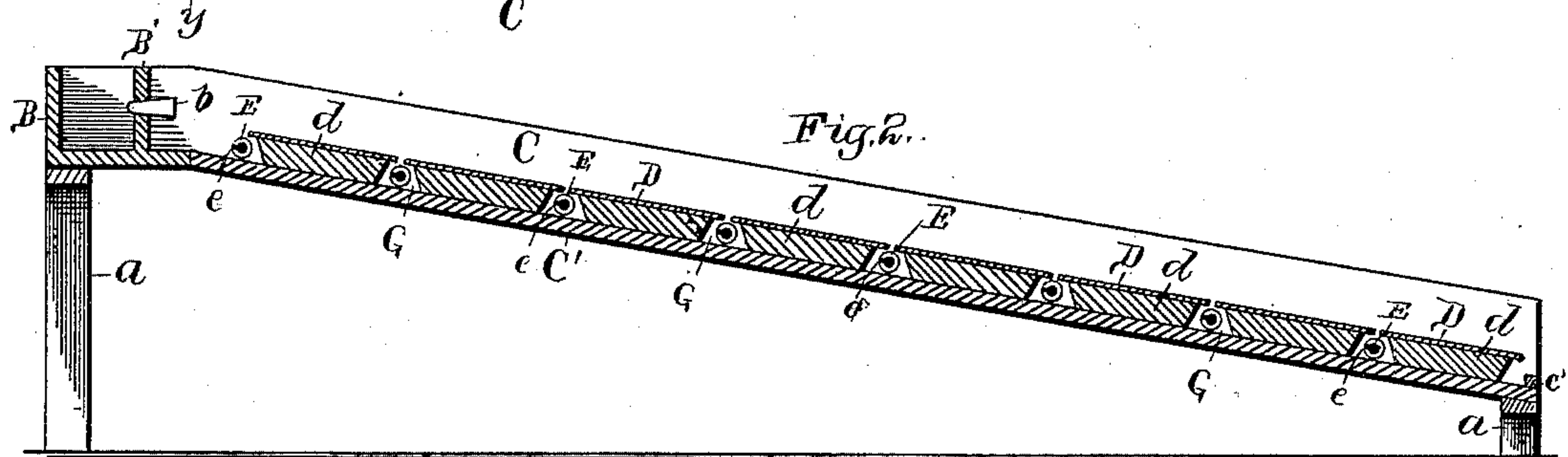
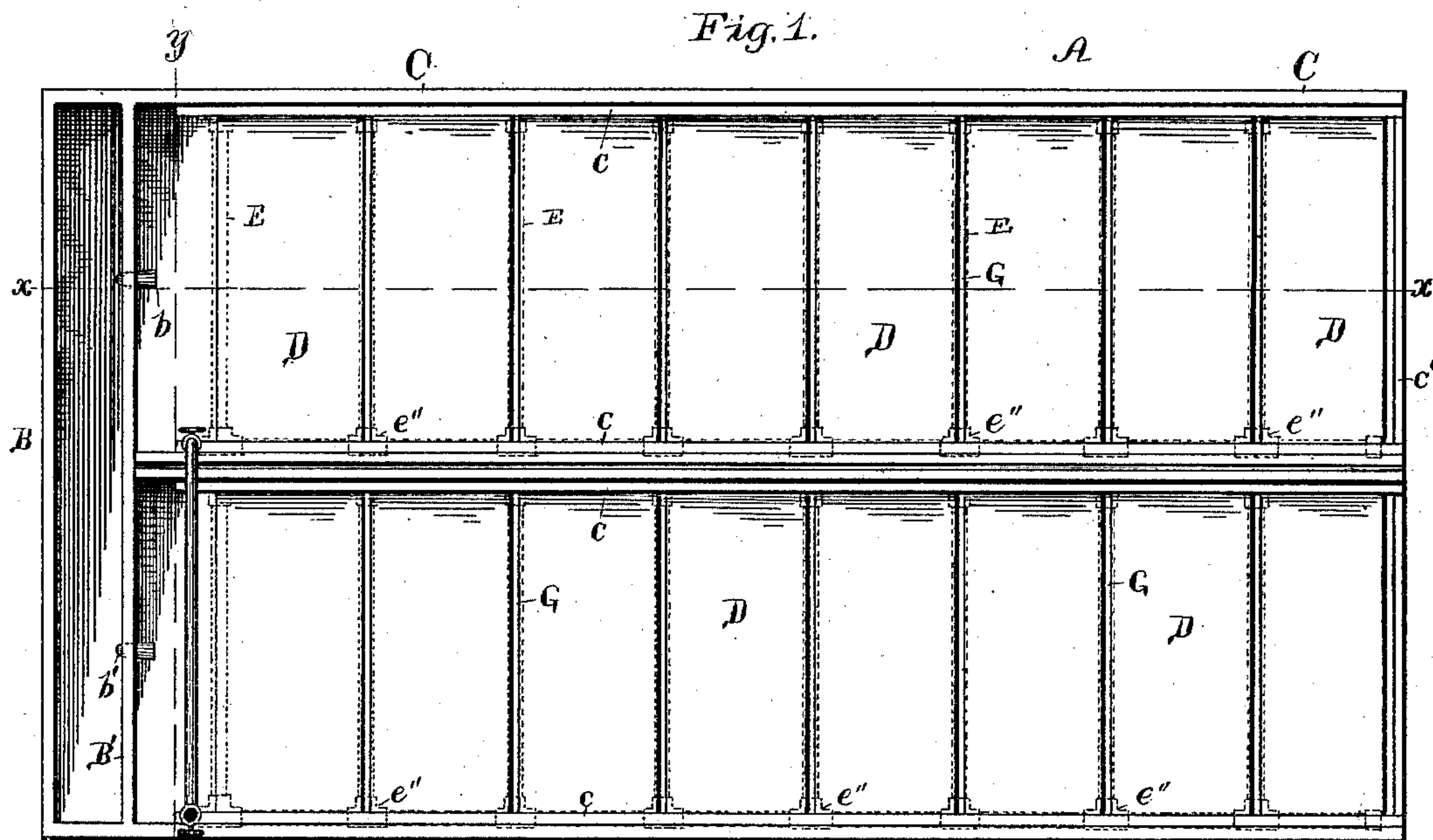


(No Model.)

G. H. CHICK.
ORE RIFFLE.

No. 448,710.

Patented Mar. 24, 1891.



Witnesses
R. A. Balderson,
" C. E. Todd.

Inventor
Geo. H. Chick
By his Attorneys
Higdon & Higdon.

UNITED STATES PATENT OFFICE.

GEORGE HORATIO CHICK, OF KANSAS CITY, MISSOURI.

ORE-RIFFLE.

SPECIFICATION forming part of Letters Patent No. 448,710, dated March 24, 1891.

Application filed February 8, 1890. Serial No. 339,694. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HORATIO CHICK, of Kansas City, Jackson county, Missouri, have invented certain new and useful
5 Improvements in Ore-Riffles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in
10 ore-riffles; and it consists in the novel construction hereinafter fully set forth and described.

The objects of my invention are, first, to provide a riffle which will thoroughly cleanse
15 and collect all the valuable ores, allowing the dirt and sand to pass off, and, second, to provide an ore-riffle easy to transport and construct, and simple in arrangement, which I do by using the device illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of my device, showing two riffles in the position they occupy when constructed ready for use. Fig. 2 is a central longitudinal section taken on line *x*
25 *x* of Fig. 1. Fig. 3 is a vertical cross-section taken on line *y y* of Fig. 1. Fig. 4 is a detail in perspective of the pipes which supply water for washing the ores; and Fig. 5 is a detail in perspective of one of the plates,
30 which is provided with metallic coverings, as shown.

Referring to the drawings by letter, A represents my invention having a feed-box B, provided with suitable plugs *b* and *b'*, through
35 which the ore, sand, dirt, &c., pass from said box onto the riffle.

C are the sides of the riffle properly secured to the bottom or base C' by suitable spikes or bolts. *c* are cleats or strips which pass
40 the entire length of the riffle and are secured to the side C. Said strips are for the purpose of holding the plates in position.

D are metallic coverings secured on plates *d*, having their edges to project over the edge
45 of the plate about a quarter of an inch, as shown in Figs. 2 and 5. Said plates D are plated with quicksilver or any other material which will attract the ores as they pass over said plates.

50 E are water-pipes placed at equal intervals along the entire distance of the riffle,

the upper sides having small perforations through which a constant stream of water is ejected, which agitates the ores and sand as they fall between the plates D and washes
55 the ore thoroughly. The edges of plates *d* are beveled in such a manner as to form a pocket in which the ores are collected, the water for said pipes E being supplied by the supply-pipe F, which conducts it through the
60 pipes E', the valve *f* regulating the flow of water or serving to cut off the water entirely when so desired. The outer ends of the water-pipes E are stopped by caps *e'*, as shown
65 in the drawings. Said pipes are coupled to the main supply-pipe E' by the T-shaped sleeves or couplings *e''*.

G shows the chambers or spaces between the plates D, in which the ore falls as it passes down the incline on the riffle, and as
70 it falls into said spaces or chambers the water from the pipes E, passing out through perforations *e*, agitates the gravel and ores, causing them to be thoroughly worked up, and as the valuable metals are heavier than the loose
75 dirt, said metals settle in the bottom of the chambers, and the dirt is washed on over to the next chamber, where it is again agitated, and so on until the bottom of the riffle is reached. The cleat *c'* serves to retain any
80 particles of metal that may pass over the last plate. Said plates, being composed of copper or plated with quicksilver, will attract the lighter ores as they pass over and prevent
85 them from being washed away with the dirt. When the chambers G have accumulated a sufficient quantity, the passage of the ores may be stopped in the trough B by putting
90 the plug *b* in position, as shown in Fig. 1, and removing the plug *b'*, thereby keeping one of the riffles always going. The plates D in the first riffle may then be taken up and all the ore removed therefrom, the entire device cleansed, and the plates replaced, when it
95 is again ready for use.

The ores are to be thoroughly mixed with water before they are deposited in the trough or box B. Said ores may be brought into said
box through a pipe, sluice, or any other suitable device. The entire device is designed
100 to be supported on suitable trusses or timbers *a*, and constructed on an incline, as

shown in Fig. 2. The increase of the incline must be determined by those operating the device.

5 The pipes E have their perforations *e* in the upper side, so that the water is ejected so that it meets the ore and dirt as they pass down the riffle, thereby mixing them thoroughly and washing the ores, allowing them to settle in the bottom and causing the loose dirt to
10 pass off from the riffle, where it is carried away by a sluice, trough, or other device.

The device may be constructed any length, and any number of plates D can be used, the number shown in the drawings being eight,
15 which is the preferable number for using in a device for washing such ores as gold, silver, &c.

Having thus fully described my invention, what I claim as new, and desire to secure by
20 Letters Patent, is—

1. An ore-riffle composed of the main box or riffle C, provided at its upper end with a box B, through which the ores are fed into

said riffle, the said riffle being built on an incline, having the metallic plates D secured 25 to the plates *d* and projecting over each edge of the plates *d*, said plates *d* having their edges beveled, as shown, thereby forming chambers or spaces between the plates *d*, in which the ores are collected as they pass 30 down the riffle, substantially as described.

2. An ore-riffle having the plates D secured on the beveled plates *d* and held in position by cleat *c*, in combination with the pipes E, arranged in the spaces between the plates D, 35 having their upper edges perforated for throwing a constant stream of water against the descending ores, thereby cleansing them, substantially as specified.

In testimony whereof I affix my signature in 40 presence of two witnesses.

GEORGE HORATIO CHICK.

Witnesses:

HATTIE PRICE,
A. A. HIGDON.