

No. 613,745.

Patented Nov. 8, 1898.

G. WEIBEL.
PORTABLE FIREPLACE.

(Application filed Apr. 20, 1897.)

(No Model.)

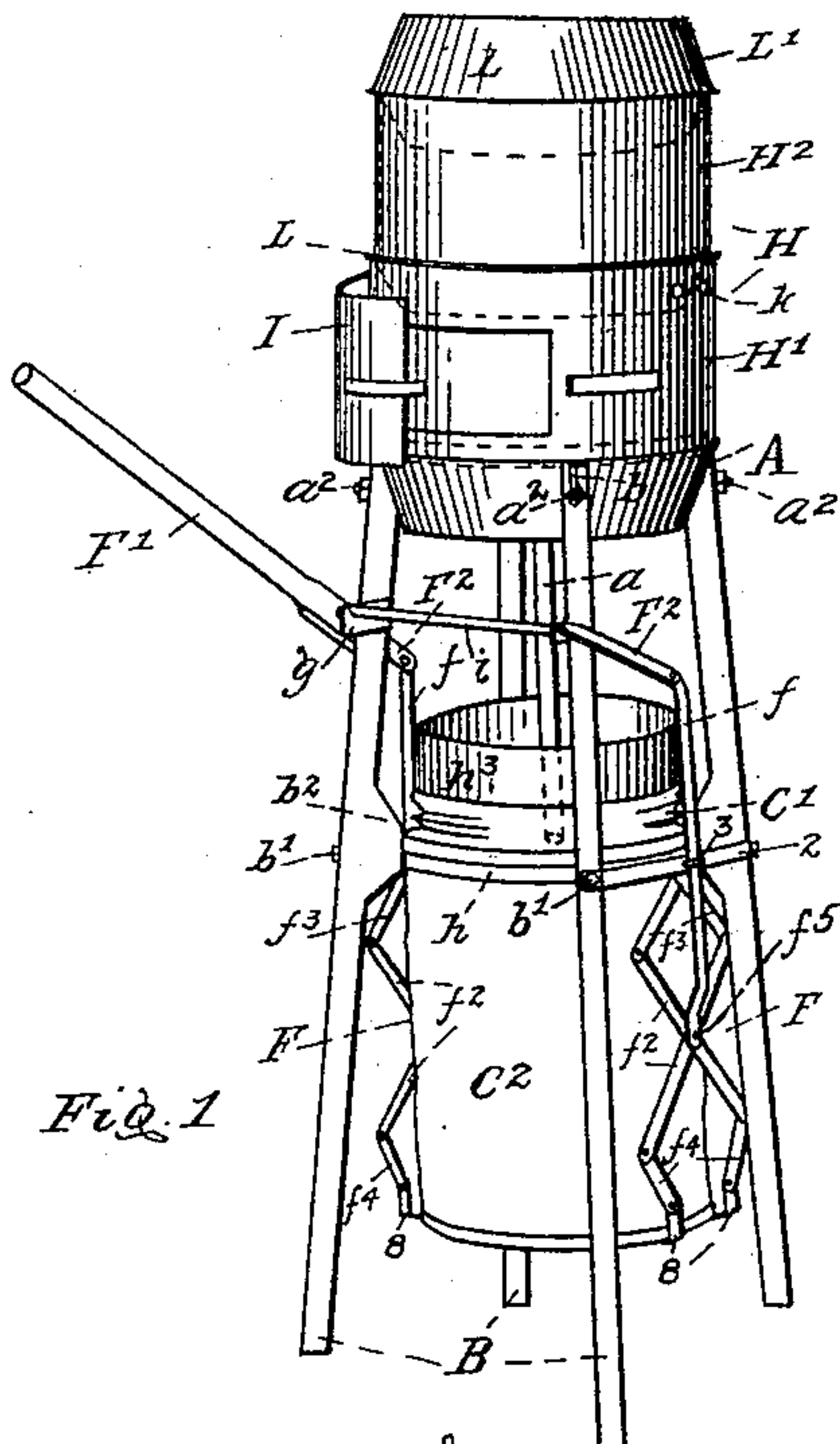


Fig. 1

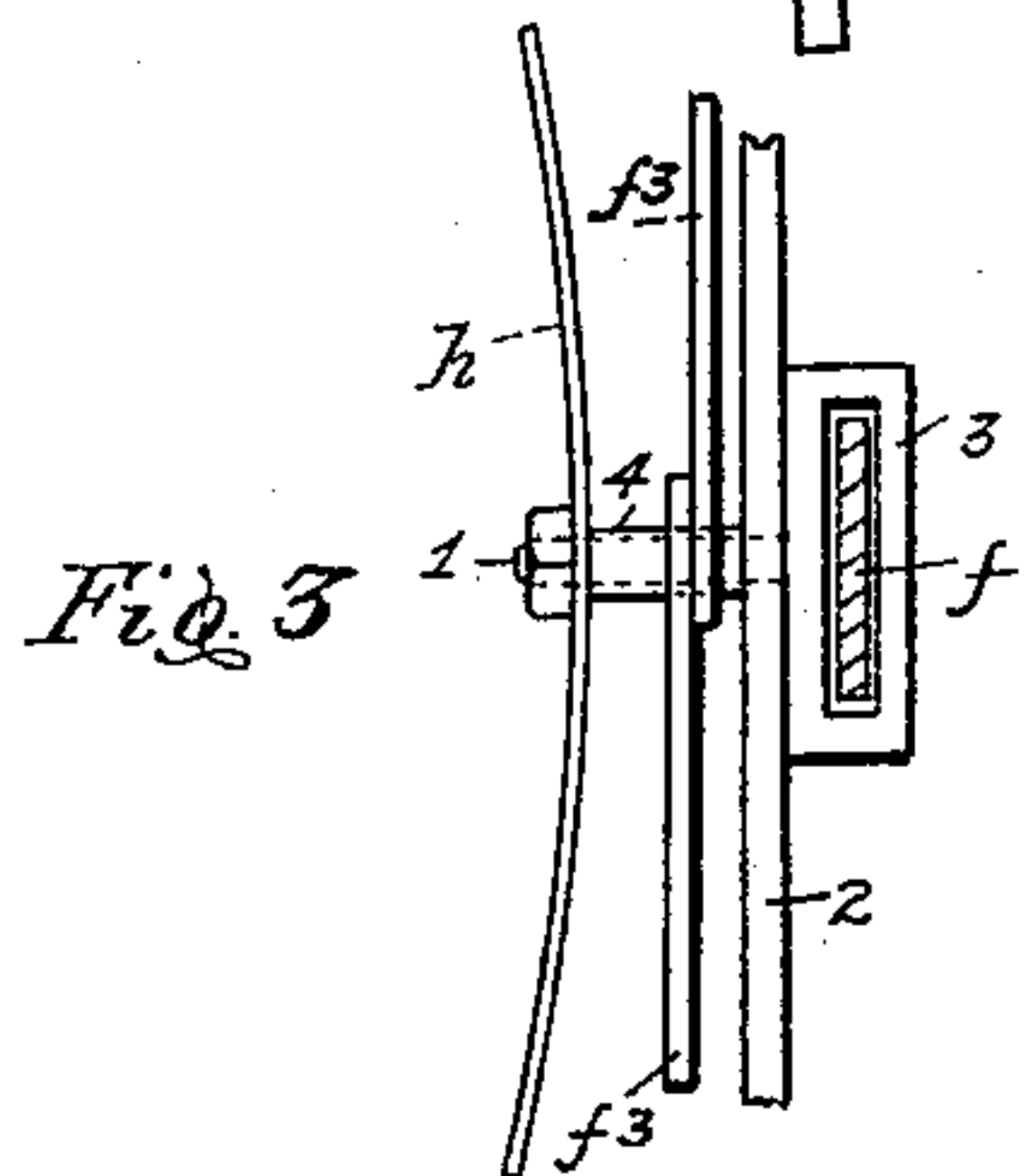


Fig. 3

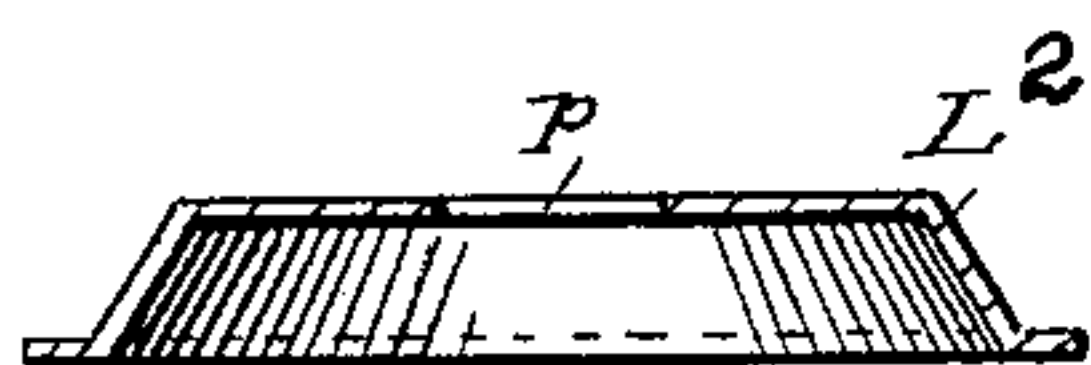


Fig. 4

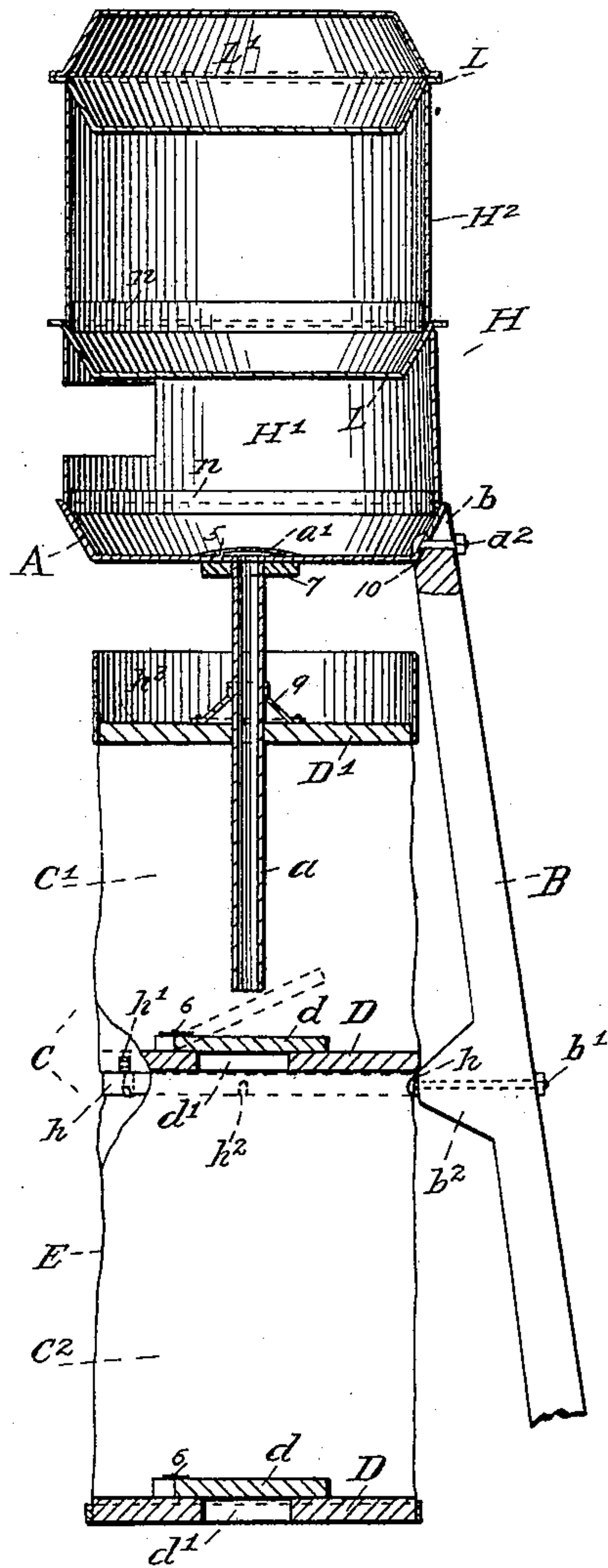


Fig. 2

Witnesses

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PORTABLE FIREPLACE.

SPECIFICATION forming part of Letters Patent No. 613,745, dated November 8, 1898.

Application filed April 20, 1897. Serial No. 632,967. (No model.)

To all whom it may concern:

Be it known that I, GOTTLIEB WEIBEL, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Portable Fireplaces, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in portable fireplaces; and the objects of my improvements are to provide a portable stove adapted for convenience in prospecting and traveling and to provide means for supplying a forced draft to the fireplace thereof for rapid cooking and adapt it for use as a forge when desirable. I attain these objects by the constructions, arrangements, and combinations of parts illustrated in the accompanying drawings and set forth in the following specification.

Referring to the drawings, Figure 1 is a perspective view of the entire device, indicating the upper air-chamber of the double bellows collapsed and the lower air-chamber inflated and adapted to supply a blast to the fireplace upon an operation of the lever; Fig. 2, a vertical section of the separable stove and the bellows thereunder, with the upper portion of one of the detachable supporting-legs attached; Fig. 3, a detailed view, on large scale, of the connecting-rod guide; and Fig. 4, a cross-section of a modified form of a dished cover for the separable stove.

Similar letters and figures of reference indicate like parts throughout the several views.

Referring to the accompanying drawings, forming a part of this specification, A indicates any suitable fireplace or hearth, which may be of any desirable size or form and may be adapted for support by suitable legs, as B, detachably secured thereto by bolts, as a^2 , which are received by slots b , whereupon the bolts may be tightened to clamp the legs B securely in place.

To guard against burning the upper ends of the legs B by heat from the fireplace A, strips, as 10, of non-heat-conducting material may be mounted thereon to contact the shell of the fireplace, as clearly indicated in Fig. 2.

To supply a forced draft to the fireplace A, I have preferably provided therebelow a

double bellows C, comprising collapsible air-chambers C' and C^2 , which may be supported by lugs b^2 , formed upon the legs B. This double bellows C is preferably constructed in cylindrical form and comprises a flexible casing E, which consists of canvas saturated with linseed-oil or other flexible material rendered impervious to air, and heads, as D and D' , which form the air-chambers C' and C^2 . The heads D of each of the air-chambers are supplied with an aperture d' , normally closed by a valve d , which is secured to the head by hinges 6, adapted to permit the valve to be raised by air-pressure.

A blast-conduit a is secured to and is adapted to deliver a forced draft to the fireplace A from the upper air-chamber C' , into which it enters through the head D' thereof, and is of sufficient length to permit of a reciprocation of the head thereon as the air-chamber C' is compressed and expanded in supplying the blast to the conduit, as will hereinafter be more fully explained, and to steady the head D' during the reciprocation thereof upon the conduit a the guide 9 is provided and is formed in conical shape to raise the bearing thereof on the conduit above the bearing of the head D' thereon, thus providing a double bearing, as clearly indicated in Fig. 2.

To attach the double bellows C to the lugs b^2 , a hoop h is provided and formed with a smaller diameter than the head D, which permits the head to rest thereupon when the hoop is supported by the bolts b' , which are introduced through the lugs b^3 and bind the hoop h between the heads thereof and the lugs, and slots h^2 permit the hoop to be raised upon loosening the bolts. To secure the bellows in place upon the hoop h , straps h' are provided and are secured to the head D and bent about the hoop.

To provide for the operation of the double bellows C, toggle-gearing F is introduced at opposite sides thereof and is pivoted to the hoop h and lower head D and comprise pivoted cross-links f^2 , hanging links f^3 , and steadying-links f^4 , pivoted together and adapted to movement by motion of the lever F' , which is connected thereto by the rods f , which are pivoted to the cross-links f^2 at the central point f^5 thereof. The lever F' is preferably provided with two arms F^2 , adapted to operate the toggle-

gearing F at each side of the bellows simultaneously and is fulcrumed by a pivot i , operating in bearings g , attached to the legs B. Thus a short alternating rectilinear motion of the rods f produces a similar, but much greater, movement of the lower head D, and I am thus enabled to produce a bellows of great capacity of blast with a limited movement of the operating-lever.

The lower head D is maintained in equilibrium during the upward movement by the steadying-links f^4 , which are preferably pivoted to the brackets f^5 , provided at each side of a diametrical center line of the lower head D.

It is obvious that an upward movement of the lower head D would expel the air contained in the chamber C^2 by raising the intermediate air-valve d , as indicated by dotted lines in Fig. 2. This would inflate and expand the air-chamber C' and also charge the blast-conduit a , and as the lower head D is returned to recharge the air-chamber C^2 through the lower aperture d' the gravity of the head D' would compress the air-chamber C' , close the intermediate air-valve d , and expel the contained fluid through the blast-conduit a , thus supplying the blast to the fire during the return of the lower head D to recharge the chamber C^2 and insuring a steady and continuous flow of fluid to the fire during the operation of the lever F'.

To increase the force of the blast expelled by the gravity of the head D', a rim h^3 is provided about the head that sand and gravel or like weighty material may be placed and retained thereupon to increase the weight thereof, and thereby expel the blast with greater velocity.

At the discharge end of the blast-conduit a may be provided a cap a' , in convex form, adapted to keep coals from dropping in the conduit and having perforations close to the edge for the discharge of the blast.

Upon the fireplace A may be mounted a separable stove-body H, comprising a lower shell H', of suitable sheet metal, provided with a doorway and a door I and draft-apertures k , a dished cover L thereon, a second shell H², of less diameter than the first, but of similar material, over said cover, and an oven L' thereon, formed by two dished covers L, and loose rings n may be introduced to steady the parts in place.

It will be clearly understood that a fierce fire might be provided in the fireplace A by employing the bellows above described, whereupon cooking could be rapidly accomplished and several articles cooked at once, as water might be boiled in the dished cover L and bread baked in the oven L' by the heat of the steam therefrom; or the shell H² might be removed and a dished cover L², Fig. 4, substituted for the cover L, whereupon any ordinary frying-pan or the like might be employed over the aperture p therein, or the parts might be differently arranged, according to the result

desired, and a steady fire might be maintained without the use of the bellows by the natural draft through the doorway and out of the apertures k .

When desirable to pack the article for transportation, the bolts a^2 are loosened and the rods f disconnected and removed with the brace-rods 2, whereupon the dished covers are nested and the shell H² slipped into the shell H'. The bellows is then collapsed after removal from the legs B and is placed in the dished covers, and after the legs B are detached from the fireplace A the dished covers and the bellows fit therein and the fireplace, with contents, slips diametrically into the telescoped shells H' and H². The legs B and lever F' are then tied together and the entire device is packed into two small bundles of very light weight.

It is obvious that the separable stove-body may be removed from the fireplace A, which can then be used as an ordinary forge. I am thus able to provide a most desirable article for prospectors, which can be cheaply constructed and readily set up and knocked down and arranged in compact form for transportation.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, having a suitable fireplace, a stove-body therefor comprising a plurality of shells of unequal diameter and covers for the shells, the lower of said shells having a doorway and a door and suitable draft-apertures, said shells adapted to telescope when said stove-body is collapsed; substantially as set forth.

2. In a device of the class described having a suitable fireplace, a separable stove-body therefor comprising a plurality of shells of unequal diameter and dished covers for the shells; said shells adapted to telescope when said stove-body is collapsed; substantially as set forth.

3. A combined forge and stove, comprising a supported fireplace, means for supplying a forced draft thereto and a separable stove-body thereon comprising a plurality of shells of unequal diameter and dished covers for the shells, said shells adapted to telescope when said stove-body is collapsed; substantially as set forth.

4. A combined forge and stove, comprising a supported fireplace, means for supplying a forced draft thereto and a separable stove-body comprising a plurality of shells of unequal diameter and dished covers therefor, said shells adapted to telescope when said stove-body is collapsed and the lower one of said shells having a fire-door and draft-apertures; substantially as shown and described.

5. A portable combined forge and stove, comprising a supported fireplace, means for supplying a forced draft thereto and a separable stove-body comprising a plurality of shells, the lower of greater diameter than the

upper, dished covers and steadying-rings for the shells, said shells adapted to telescope when said stove-body is collapsed; substantially as set forth.

5 6. A portable combined forge and stove, comprising a supported fireplace, a bellows thereunder and a blast-conduit therebetween, toggle-gearing to operate said bellows comprising hanging links, steadying-links and
10 diagonal crossed links pivoted together and to the hanging and steadying links and a separable stove-body over said fireplace; substantially as set forth.

7. A portable combined forge and stove,
15 comprising a supported fireplace, a bellows thereunder and a blast-conduit therebetween, toggle-gearing to operate said bellows comprising hanging links, steadying-links and diagonal crossed links pivoted together and
20 to the hanging and steadying links and a separable stove-body thereon comprising a plurality of shells with dished covers thereon and steadying-rings therein; substantially as set forth.

25 8. A portable stove, comprising a supported fireplace, a lower shell thereon having a door and suitable draft-apertures, and a steadying-ring therein upon said fireplace, a dished cover on said shell a second shell of less diameter than the first steadied on said cover
30 and a plurality of dished covers thereover, said shells adapted to telescope when said stove is collapsed; substantially as set forth.

9. A forge comprising a supported hearth,
35 a blast-conduit thereto, a double bellows thereunder, consisting of a flexible casing, a sustained intermediate head, a movable lower

head with an air-valve to each, and an upper head adapted to reciprocate upon said conduit, and toggle-gearing intermediate said
40 intermediate and lower heads comprising hanging links, steadying-links and diagonal crossed links pivoted together and to the hanging and steadying links and means to operate said toggle-gearing; substantially as
45 set forth.

10. In a forge, having a double bellows to provide a forced draft thereto and comprising a flexible body, opposite movable heads therefor and an intermediate stationary head
50 therein, toggle-gearing intermediate said heads comprising hanging links, steadying-links and diagonal crossed links pivoted together and to the hanging and steadying links and means to operate said gearing to collapse
55 and expand said bellows; substantially as set forth.

11. In a forge, having a bellows provided with a movable head, the means for operating said bellows comprising hanging links supported from a stationary pivot, steadying-links pivoted to said head with a space between the pivots, cross-links pivoted together centrally and to the ends of opposite hanging and steadying links and means to operate said
60 links from said central pivot, substantially as set forth.

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

GOTTLIEB WEIBEL.

Witnesses:

FRANK E. ADAMS,
ALBERT W. STEPHENSON.