

No. 774,842.

PATENTED NOV. 15, 1904.

A. B. HEMINGWAY.  
BURNER BOWL AND VALVE.

APPLICATION FILED MAY 18, 1904.

NO MODEL.

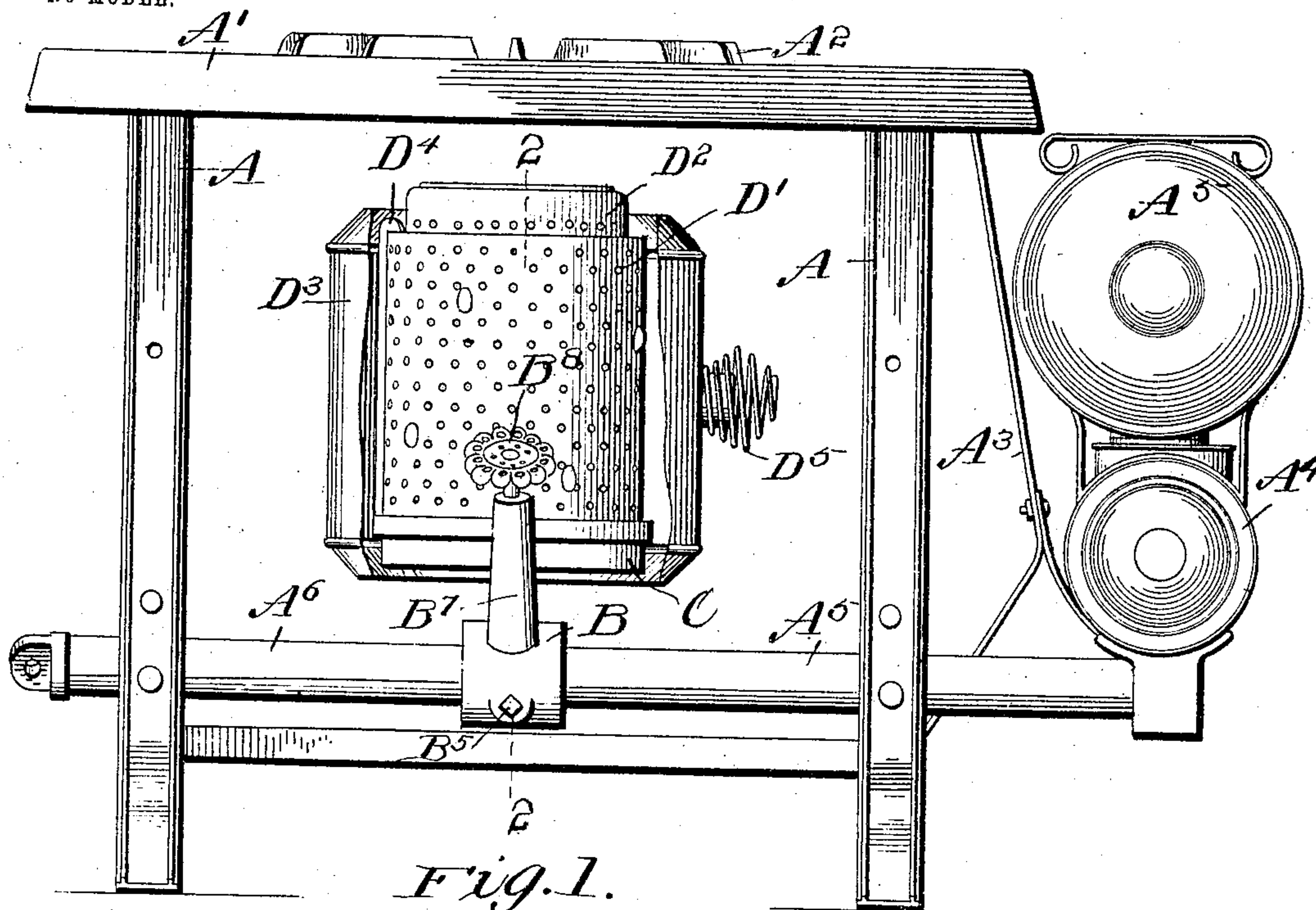


Fig. 1.

Fig. 2.

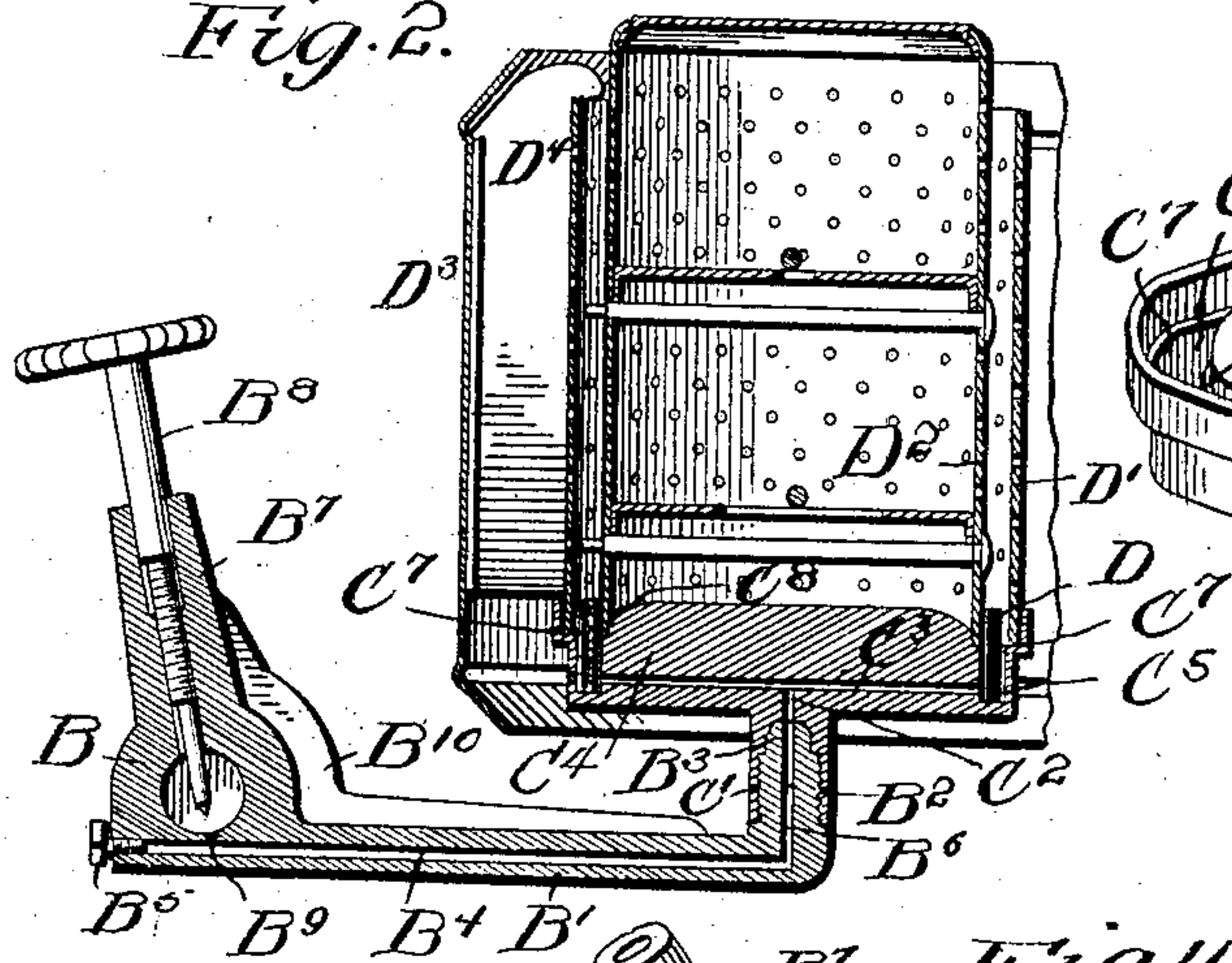


Fig. 3.

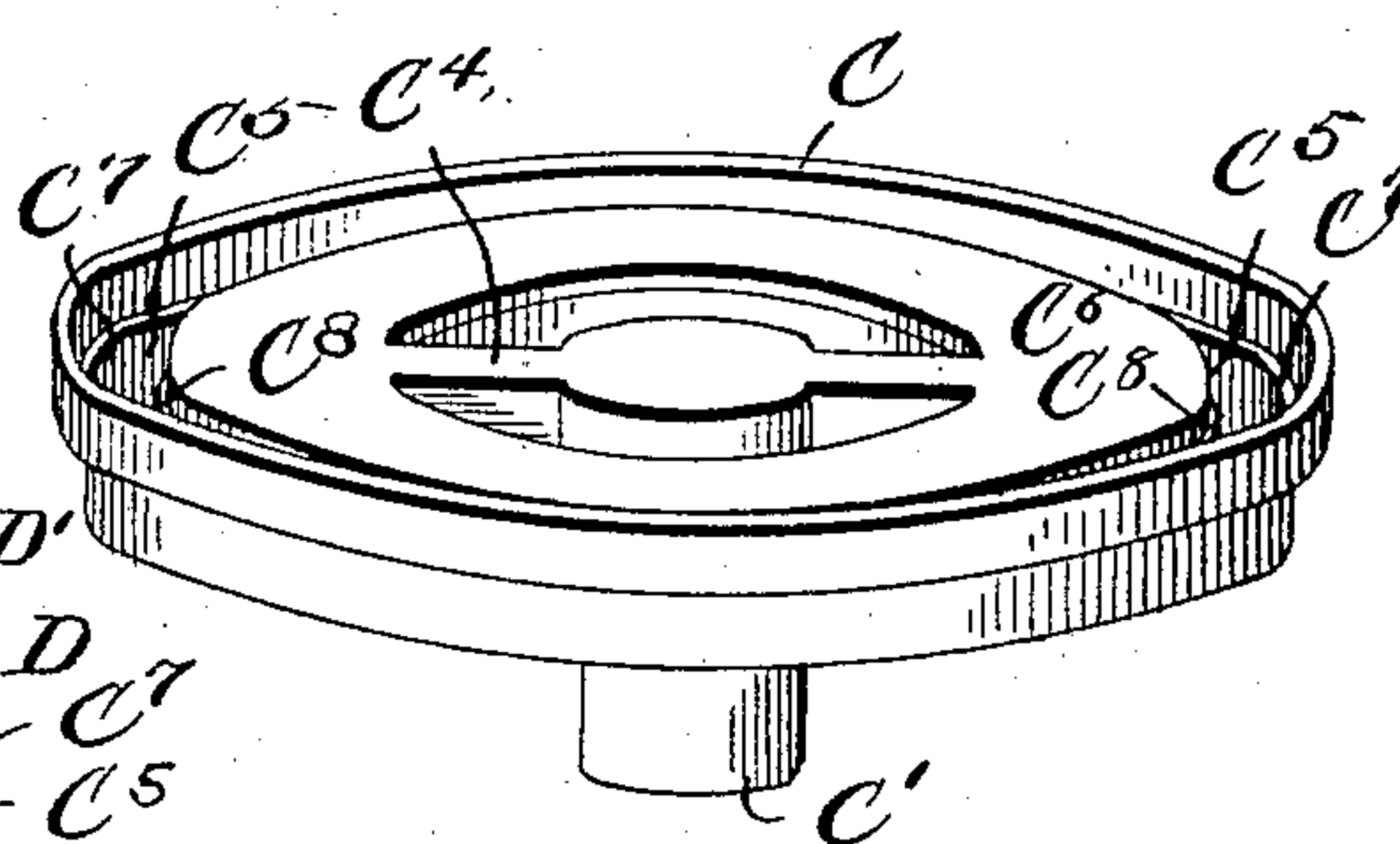
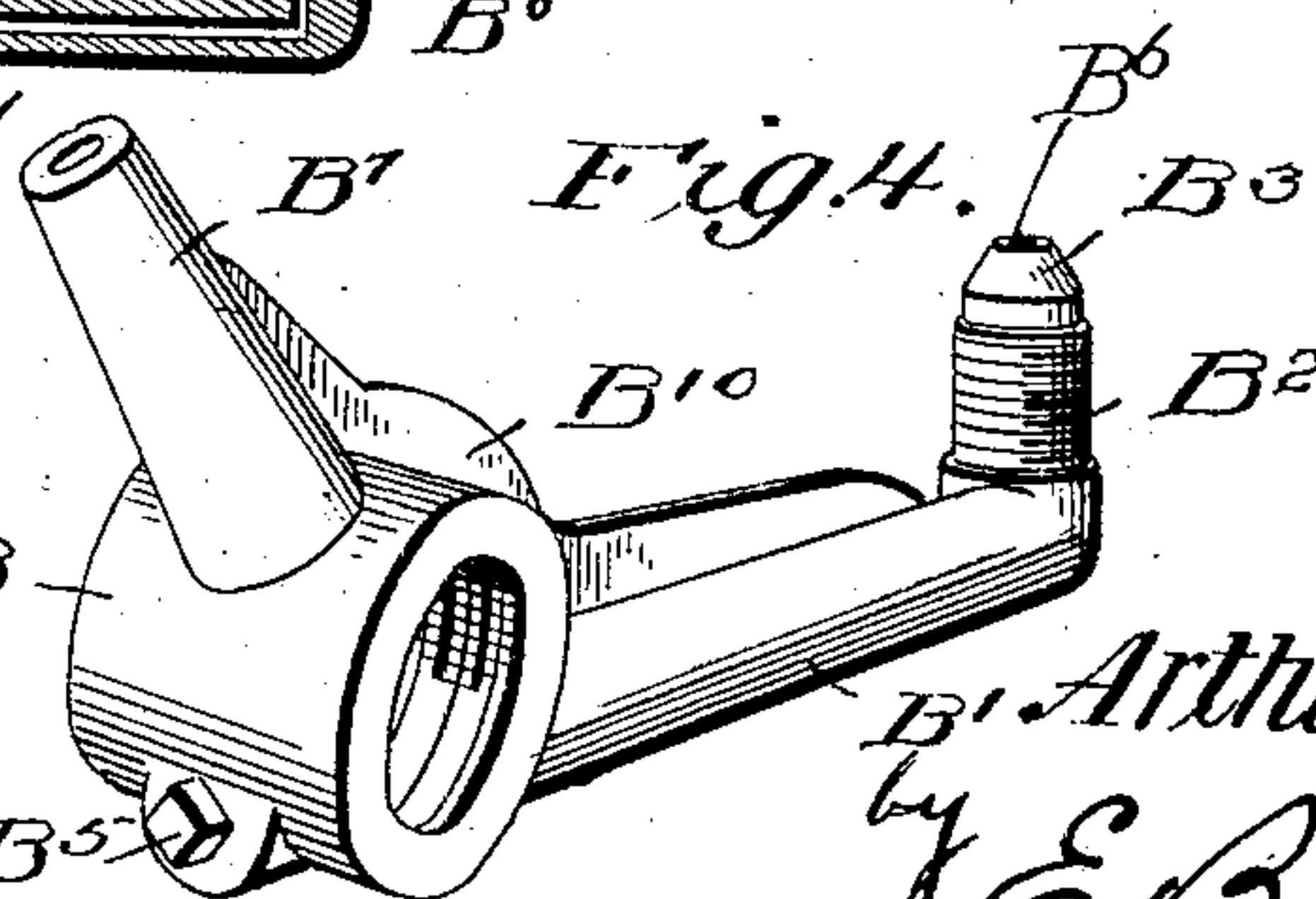


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ARTHUR B. HEMINGWAY, OF RICHMOND, VIRGINIA, ASSIGNOR TO  
SOUTHERN STOVE WORKS, OF RICHMOND, VIRGINIA, A PART-  
NERSHIP.

## BURNER-BOWL AND VALVE.

SPECIFICATION forming part of Letters Patent No. 774,842, dated November 15, 1904.

Application filed May 18, 1904. Serial No. 208,628. (No model.)

*To all whom it may concern:*

Be it known that I, ARTHUR B. HEMINGWAY, a citizen of the United States, residing at Richmond, in the county of Henrico, State of Virginia, have invented certain new and useful Improvements in Burner-Bowls and Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a burner-bowl and valve, and particularly to such a device for use in connection with the ordinary blue-flame vapor-burner.

The invention has for an object to improve the construction of the burner-bowl so as to obviate the use of any joints between the parts of the bowl which become very highly heated, and if joints exist leakage will occur, with the resultant disadvantages in a stove of this character, and for that reason a diametrically-disposed web is located within the space between the sides of the annular channel and provided with a feed-passage communicating with the side of said channel.

25 A further object of the invention is to provide an improved construction of valve-casting formed in one part, so as to avoid the use of joints, and to dispose the valve itself at a proper distance from the burner to prevent the injurious action thereon of the heat, while the connection between the casting and bowl comprises both a thread and a ground bearing, by which the most advantageous results are secured in this art.

35 Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

40 In the drawings, Figure 1 is a side elevation of a stove having my invention applied thereto, the burner-hood being broken away; Fig. 2, a detail vertical section on the line 2-2 of Fig. 1; Fig. 3, a detail perspective of the burner-bowl, and Fig. 4 a similar view of the valve-casting.

Like letters of reference refer to like parts in the several figures of the drawings.

The letter A designates the framework of the stove, which may be of any desired char-

acter, the top A' thereof being provided with the usual supports A<sup>2</sup> above the burner, while at the side of the frame a suitable support A<sup>3</sup> is provided to receive the feed-tank A<sup>4</sup> and also the removable reservoir A<sup>5</sup>, provided with the usual construction of cut-off common in this art.

Extending from the feed-tank A<sup>4</sup> is a feed-pipe A<sup>5</sup>, which communicates by the usual threaded connection with the body B of the valve-casting, while at the opposite side of this body a supporting-pipe A<sup>6</sup> may be threaded into the casting and mounted in the frame for properly supporting the valve-casting as well as the burner carried thereby. This casting is provided at one side of the body B with a feed-arm B', having at its free end an exteriorly-threaded post B<sup>2</sup>, provided with a ground conical bearing-surface B<sup>3</sup> beyond the threads thereon. The arm B' is provided with a feed-channel B<sup>4</sup>, bored through the casting and closed at one end by means of the removable tap-screw B<sup>5</sup>, by which access can be obtained to the passage for the purpose of cleaning the same. The post B<sup>2</sup> is also provided with a passage B<sup>6</sup>, extending downward and intersecting the feed-passage B<sup>4</sup>. The body B is also provided with a valve-sleeve B<sup>7</sup>, disposed at an angle away from the arm B', while this sleeve is interiorly threaded to receive the ordinary needle-valve B<sup>8</sup>, which coöperates with an opening B<sup>9</sup>, communicating with the passage B<sup>4</sup> and disposed in alinement with the opening through the sleeve B<sup>7</sup>, so that it may be bored at the time of finishing the sleeve. The sleeve and arm may, if desired, be connected by a strengthening-web B<sup>10</sup>, all of said parts being formed as an integral casting and bored in such manner as to cause the passages to intersect and to obviate the use of any jointed connections therein.

The post B<sup>2</sup> at the free end of the feed-arm is adapted to receive a bowl C, which is provided with a coupling C' for that purpose, having an interior threaded and ground bearing, as shown in Fig. 2, for the purpose of coöperating with similar parts upon the post, while this coupling is provided with a passage C<sup>2</sup>, communicating with a passage C<sup>3</sup>, disposed



at a right angle thereto and extending through a diametrically-disposed web C<sup>4</sup>, so as to discharge at the side of the annular channel C<sup>5</sup>, extending circumferentially of the body C<sup>6</sup> of the bowl. The web C<sup>4</sup> is formed as an integral casting with the remaining portions of the bowl, and by the use of the term "integral" it is intended to embrace any other form of connection by which a joint is avoided—such, for instance, as welding. The passage through this web is formed by drilling the bowl from side to side and suitably plugging or otherwise closing the opening through the outer wall of the channel C<sup>5</sup>. This channel is adapted to receive the usual wick D, while at one side thereof a shoulder C<sup>7</sup> is formed to support a perforated combustion-tube D', while the opposite side of the channel is provided with a shoulder C<sup>8</sup> to support the inner perforated combustion-wall D<sup>2</sup>, which walls are of the usual construction in blue-flame burners. Surrounding the combustion-walls is the ordinary protecting-hood D<sup>3</sup>, supported in position by means of wings D<sup>4</sup> engaging the upper portion of the outer combustion-wall, said hood being provided with any ordinary handle, as indicated at D<sup>5</sup>, for the purpose of removal when desired.

It will be seen that the form of bowl presented provides an integral construction, obviating the use of joints and adapted to be formed from a single casting bored with the feed-passages, as described, thus obviating the use of any connecting-joints from which the ordinary objectionable leakage occurs, owing to the intense heat, which in many instances reaches about 600° and causes in the use of the burner an expansion and contraction, rendering it difficult to effectually maintain a tight joint. Furthermore, the disposition of the web having the feed-passage discharging at the side of the channel secures the most desirable feed to the wick, while it thoroughly protects the fuel until discharged at the point of use, thereby preventing any premature ignition thereof from the heat of the burner. Another very important advantage secured by the wholly-inclosed feed-passages in the webs or arms of the burner is that by the intense heat produced by the burner and in part absorbed by the arms the fuel is preliminarily heated and partly vaporized, so that when it reaches the wick a more perfect combustion is secured. The valve-casting also obviates the use of any joints, and the threaded connection between the casting and bowl is such that the ground bearing prevents any leakage and communicates to the connected parts a substantially equal temperature. The casting also removes the valve a proper distance from the burner, so that it shall not be affected by the heat therefrom, and provides a

structure adapted to be formed from a single piece of material and bored in a simple manner to secure the most efficient results at the minimum of cost in construction. The valve-casting, also as shown in Fig. 4, is adapted to be connected at each end of the body thereof with a supply-pipe and gives ample thickness of material to provide a serviceable liquid-tight joint, located, by means of its horizontal arm, at such a distance from the burner as not to be heated, so as to cause leakage by contraction and expansion, and, furthermore, such a casting may be used singly or in a series upon one supply-pipe formed in short sections extending from one casting to another.

It will be obvious that changes may be made in the details of construction and configuration without departing from the spirit of the invention as defined by the appended claims.

Having described my invention and set forth its merits, what I claim, and desire to secure by Letters Patent, is—

1. A burner-bowl formed of a jointless casting comprising a solid annular heating-body, a centrally-disposed stem adapted to be connected with a fuel-supply, radial arms connecting said body and stem and provided with passages bored therein and through the body to communicate with said stem, and an annular outer wall thinner than and spaced from the body to form a surrounding trough.

2. An integral valve-casting comprising a body portion threaded for pipe connections at opposite ends, an outwardly-inclined valve-sleeve at the top of said body, a feed-arm extending horizontally from one side thereof for a distance greater than the semidiameter of a burner, and a burner connection disposed at an angle to and at the free end of said arm.

3. A burner-bowl comprising a jointless annular body having at its periphery an annular channel, a diametrically-disposed integral web extending from one to the other of the inner side walls of said body and located wholly within the vertical area of said body and provided with a feed-passage communicating with the inner side of said channel, a coupling disposed at an angle to said web and having interior threads, an integral valve-casting comprising a body portion, a valve-sleeve at the top thereof, a feed-arm extending horizontally from one side thereof, and a short burner connection disposed at an angle to the free end of said arm to receive said coupling and support the bowl above and adjacent to said arm.

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

ARTHUR B. HEMINGWAY.

Witnesses:

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P. L. ANDERSEN.