

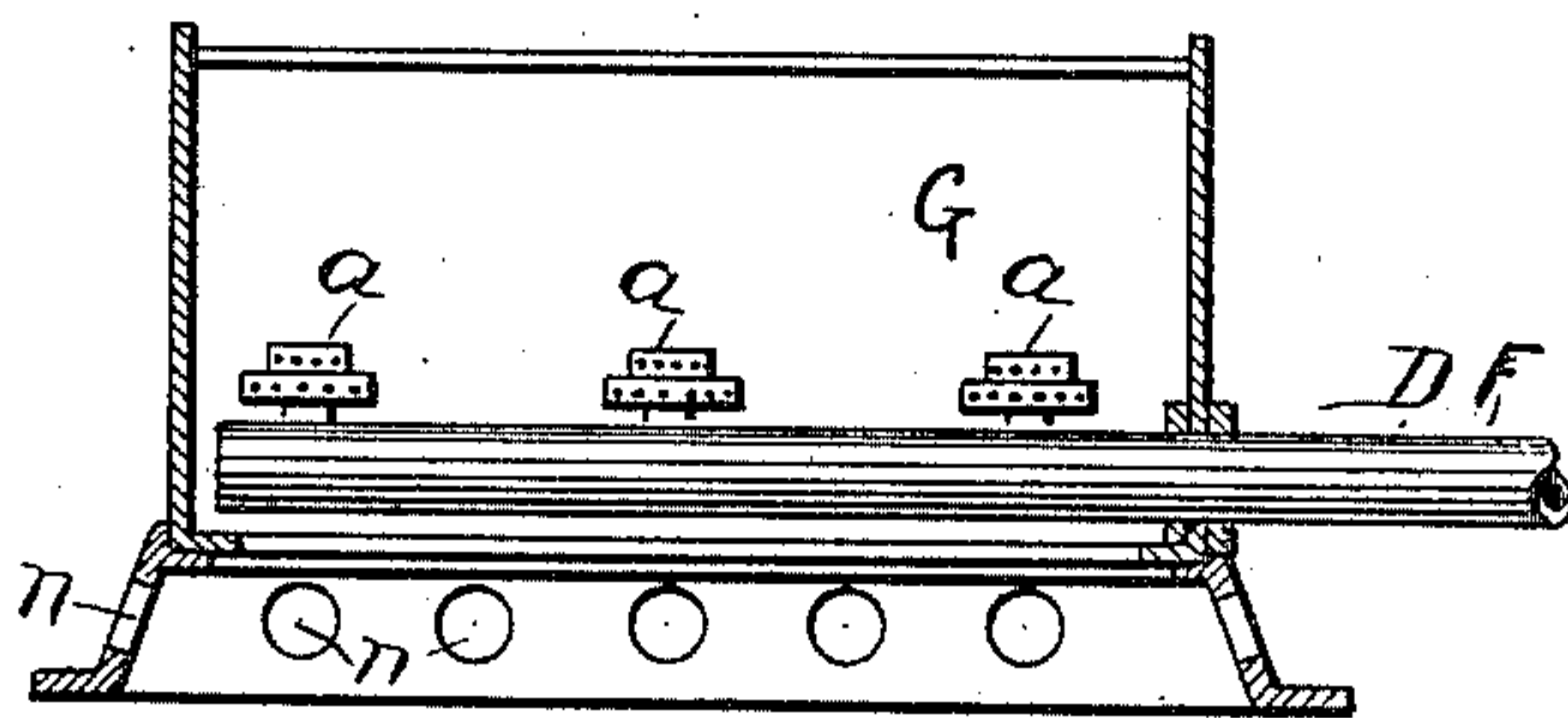
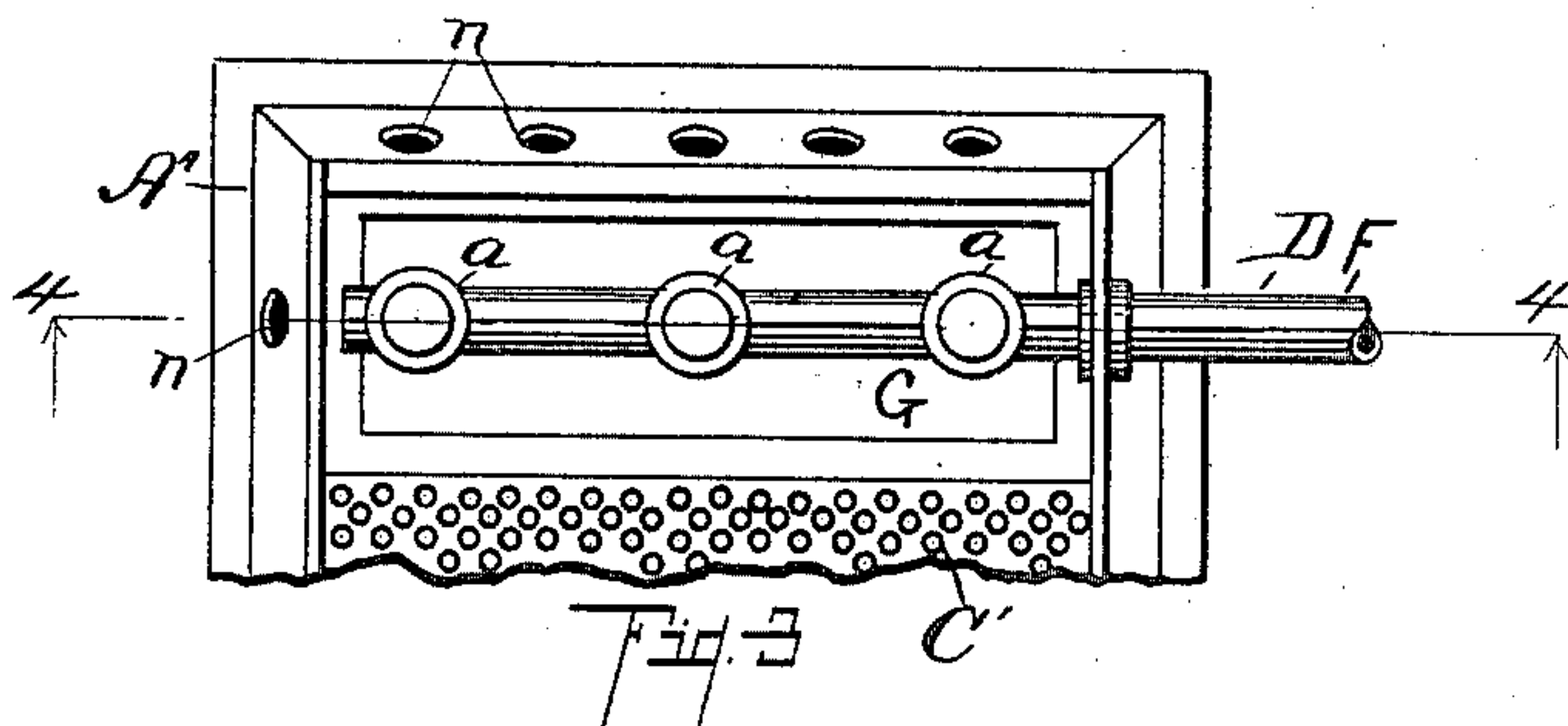
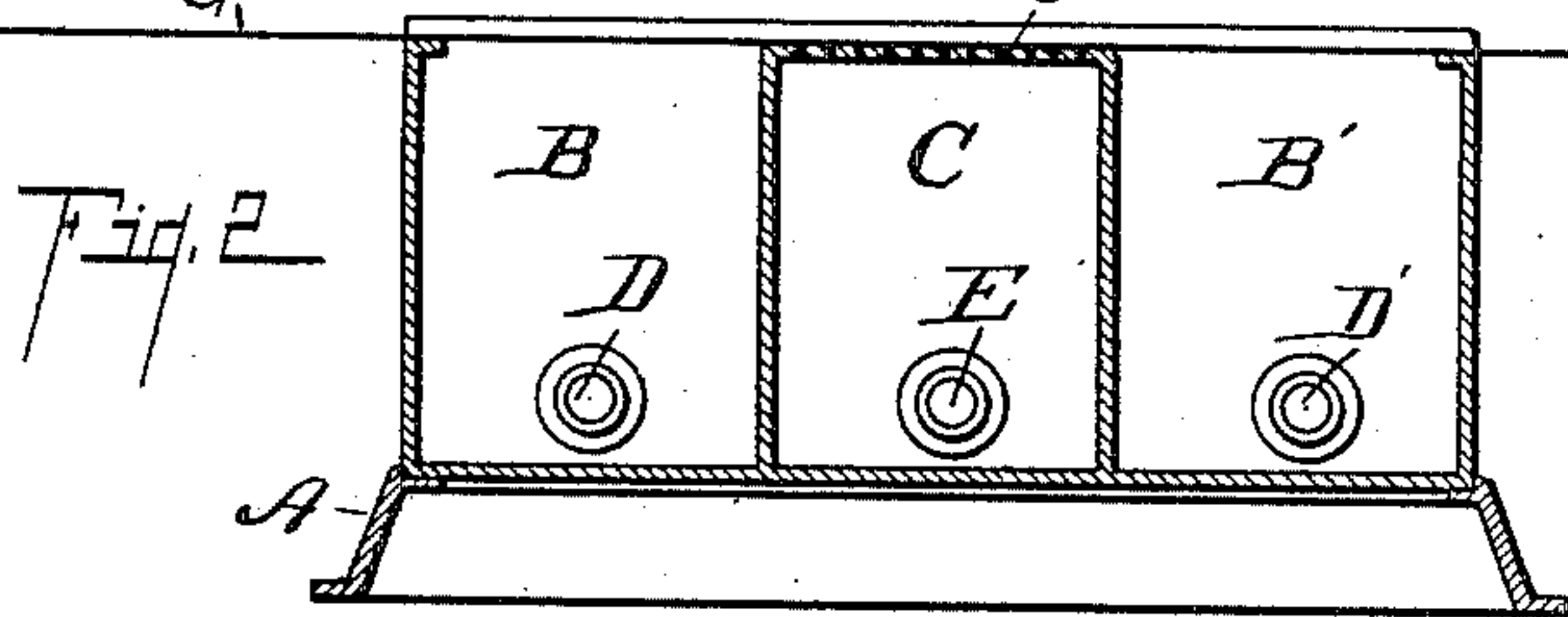
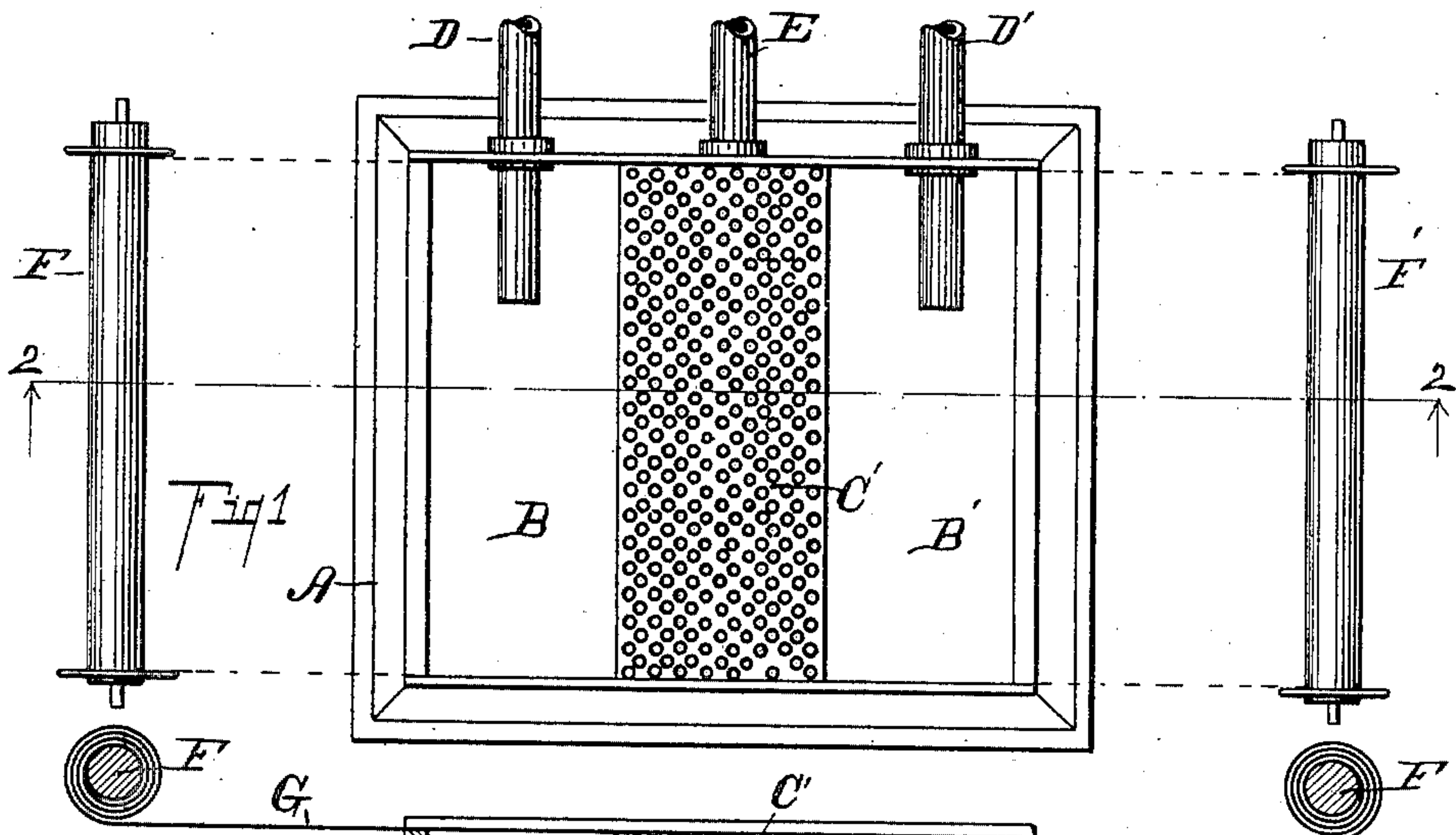
No. 661,261.

Patented Nov. 6, 1900.

A. GARLAND.
PROCESS OF TREATING CLOTH.

(Application filed Mar. 24, 1900.)

(No Model.)



Witnesses:

Alice Houghton

Otis C. Earl

Inventor,

Arthur Garland

By Fred L. Chappell

Att'y.

UNITED STATES PATENT OFFICE.

ARTHUR GARLAND, OF HOWELL, MICHIGAN.

PROCESS OF TREATING CLOTH.

SPECIFICATION forming part of Letters Patent No. 661,261, dated November 6, 1900.

Application filed March 24, 1900. Serial No. 10,106. (No specimens.)

To all whom it may concern:

Be it known that I, ARTHUR GARLAND, a citizen of the United States, residing at the village of Howell, in the county of Livingston and State of Michigan, have invented a certain new and useful Process of Treating Cloth, of which the following is a specification.

This invention relates to an improved process of sponging and treating cloth.

10 The object of the invention is to provide a substantially continuous process of steaming or sponging and drying cloth which leaves the cloth in perfect condition without raising the nap or marring the finish or causing
15 wrinkles, thoroughly shrunk and ready for use.

Prior to my invention the matter of sponging and properly shrinking cloth in tailors' establishments has been a matter of great
20 labor and annoyance, besides causing delays in the manufacture. By my improved process the cloth is rapidly treated, completely dried, and is shrunk without any uneven strains, forming an even web without wrinkles and of perfect finish when the process is
25 completed.

Further objects of invention will appear in the detailed description to follow.

30 The process is fully described in the following specification and the invention is clearly defined and pointed out in the claims.

I carry out my improved process on the apparatus described in my application filed on the 22d day of December, 1899, Serial No. 741,279, or by the apparatus which I illustrate
35 in the accompanying drawings, forming a part of this specification, it being immaterial by what apparatus or devices the process is performed or carried out. Other apparatus
40 might be employed.

In the drawings Figure 1 is a detail plan view of the essential parts of an apparatus for carrying on my improved process, partially in diagram. Fig 2 is a longitudinal detail
45 sectional elevation on line 2 2 of Fig. 1. Fig. 3 is a detail plan view of a modification. Fig. 4 is a transverse detail sectional elevation taken on line 4 4 of Fig. 3.

50 In the drawings all of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and

similar letters of reference refer to similar parts throughout the several views.

A represents a suitable casing, which is divided into compartments B C B', which are
55 open at the top, the central compartment C being covered by a suitably-perforated plate C'. Pipes D D' lead into the compartments B B', respectively, and deliver heated dry air into these compartments, to pass upwardly
60 from the same.

E is a steam-pipe delivering the live steam into the central compartment C. Rolls F F' are in each end of the casing, and any fabric
65 to be treated is passed slowly onto the casing, becoming thoroughly heated and incidentally dried over the first compartment B by the heated air rising at that point. It then passes over the central compartment, where
70 it is quickly and thoroughly penetrated by the steam owing to its heated condition. This has the effect of thoroughly penetrating the fabric owing to the fact that the fibers are loosened up by the heat over the first
75 chamber, and being warmed by that heat the steam quickly permeates the entire fabric and does not become condensed on the surface to cause an undue amount of moisture. When the steam at the center chamber C
80 rises evenly through the fabric at every point over the section, the fabric is then moved forward until this portion passes over the section B'. As the fibers are thoroughly opened
85 by the heat and as only live steam is passed through, there is very little moisture in the fabric, which is almost instantly dried by moving the fabric gradually across this device by means of the rollers F F', or otherwise. It is observed that the fabric is first heated
90 and expanded by the air rising. While it is thus heated, steam passes through it, acting on every part, and then while the fabric is still warmed by the steam it passes over the second chamber, where a current of air rises through
95 the same, making the process continuous, and the shrinking of the fabric is thoroughly effected without unnecessarily dampening the cloth or subjecting it to any strains, or allowing it to be wrinkled or folded in the damp
100 condition, which has the effect of leaving the cloth in a more or less wrinkled condition.

In Figs. 3 and 4 I show a modification of

the apparatus. A' is the base, the end chambers G, corresponding to the chambers B B' of the preferred structure containing burners *a a*, which are supplied with fuel through the pipe F. The central chamber is the same as in the principal structure and is not detailed in these views. In these structures the current of heated air and products of combustion is induced by the burners *a a*, and the air enters through apertures *n* in the base, so that the air is thoroughly heated as it passes upwardly.

I desire to remark in this connection that experiment shows that the cloth could be passed immediately onto the steam portion and then onto the drying-chamber, but that the process is very much retarded by not having the cloth thoroughly dry and heated when it receives the steam, for it will be necessary in order to secure the proper effect to continue the action of steam until the cloth or fabric is thoroughly heated, so that only the dry live steam is retained in its fibers. If the cloth is cold and its fibers have not been opened up by heat on the start, the steam does not penetrate the same readily and the action of the steam is greatly retarded. I mention this to show the advantage of heating the cloth in advance and expanding the fibers to receive the steam; but this result may be accomplished by continuing the steaming longer, so that the steaming accomplishes the same effect by the protracted heating until nothing but dry steam passes that is accomplished in the first instance; but by this method in the

first instance a considerable quantity of steam will be condensed within the cloth and it will be necessary to continue the action of the steam for a much longer period.

Where light fabrics are treated, they can of course be passed along on a carrier, which would be similar to the fabric G, illustrated in the drawings, which can be of light cotton, as it would serve merely as a support.

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

1. The method of treating cloth which consists, first in subjecting the same to a current of heated air or gases; second, while the cloth is still heated, subjecting the same to the action of live steam until it is thoroughly heated and acted upon by the same, and then subjecting the same to a current of heated air or gases to drive off the residue of steam and dry the cloth.

2. The process of treating cloth which consists in subjecting the same to the action of live steam until the fabric is thoroughly heated and expanded, and then subjecting the same, while it is still heated, to a current of heated gases to drive out the steam and thoroughly dry the fabric.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

ARTHUR GARLAND. [L. S.]

Witnesses:

WILLIAM E. BEACH,
EDWARD J. DREWRY.