

No. 680,367.

Patented Aug. 13, 1901.

T. D. STEWART.
FLAT IRON.

(Application filed Sept. 28, 1899.)

(No Model.)

Fig. 1.

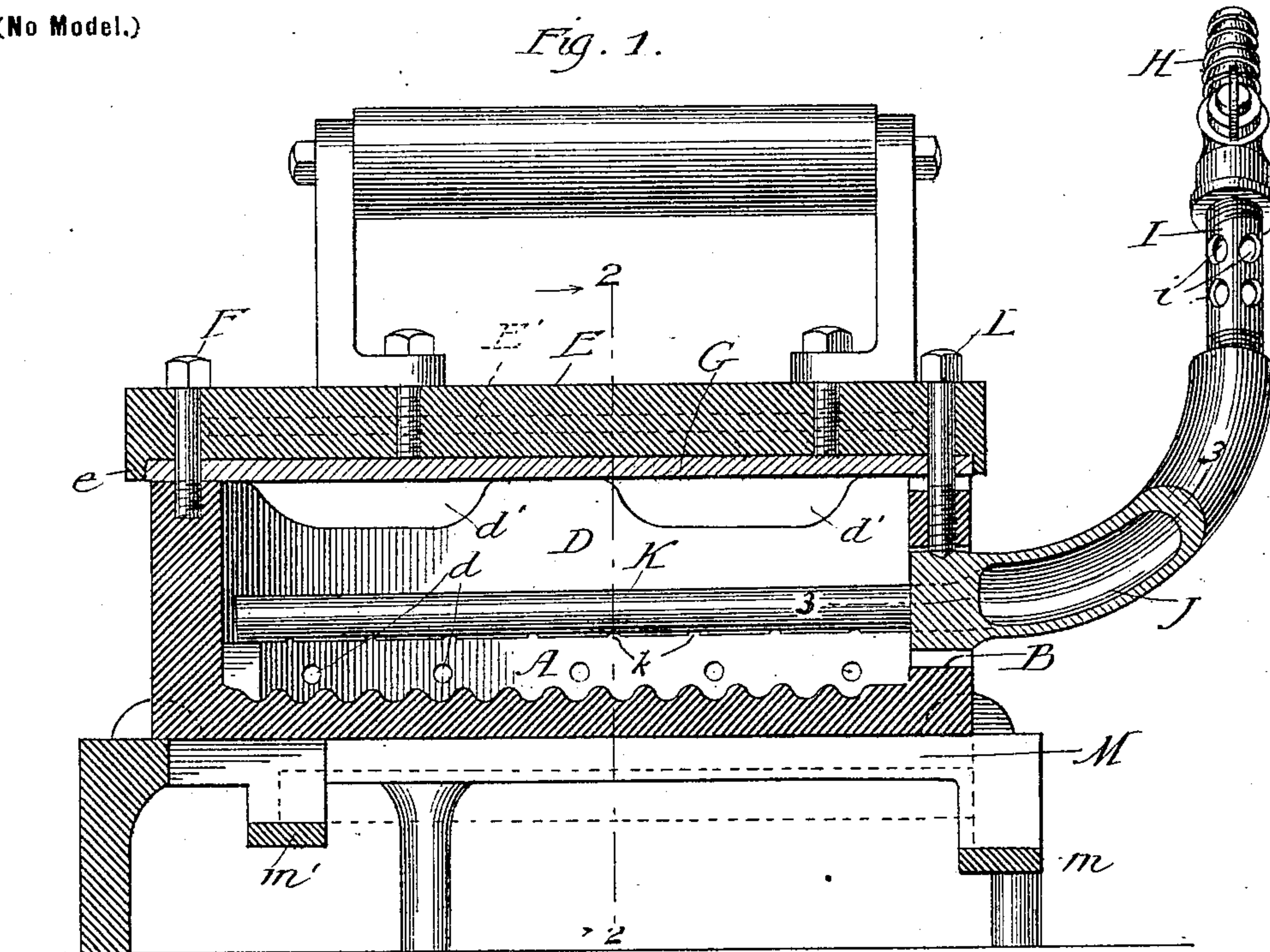


Fig. 2.

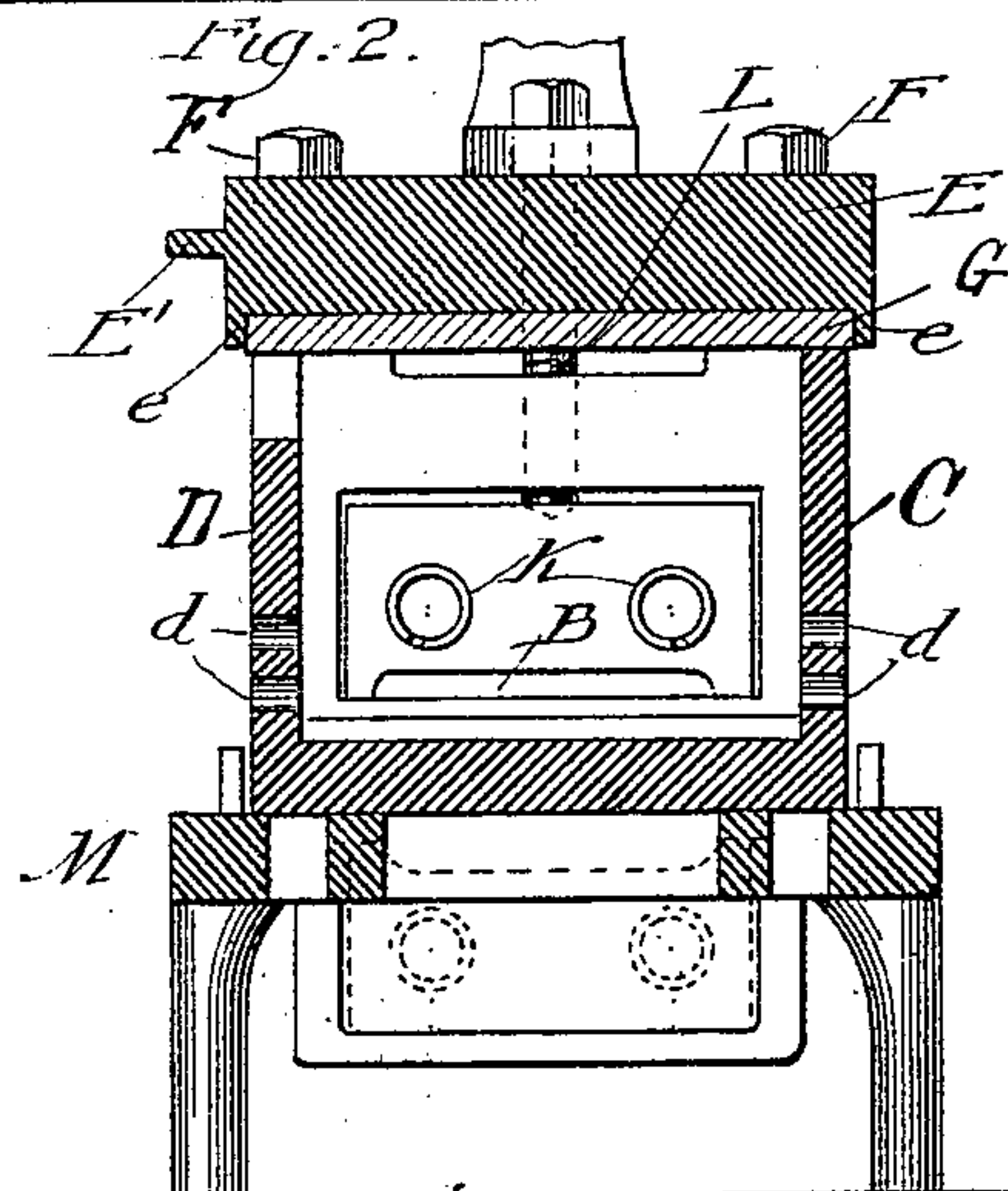
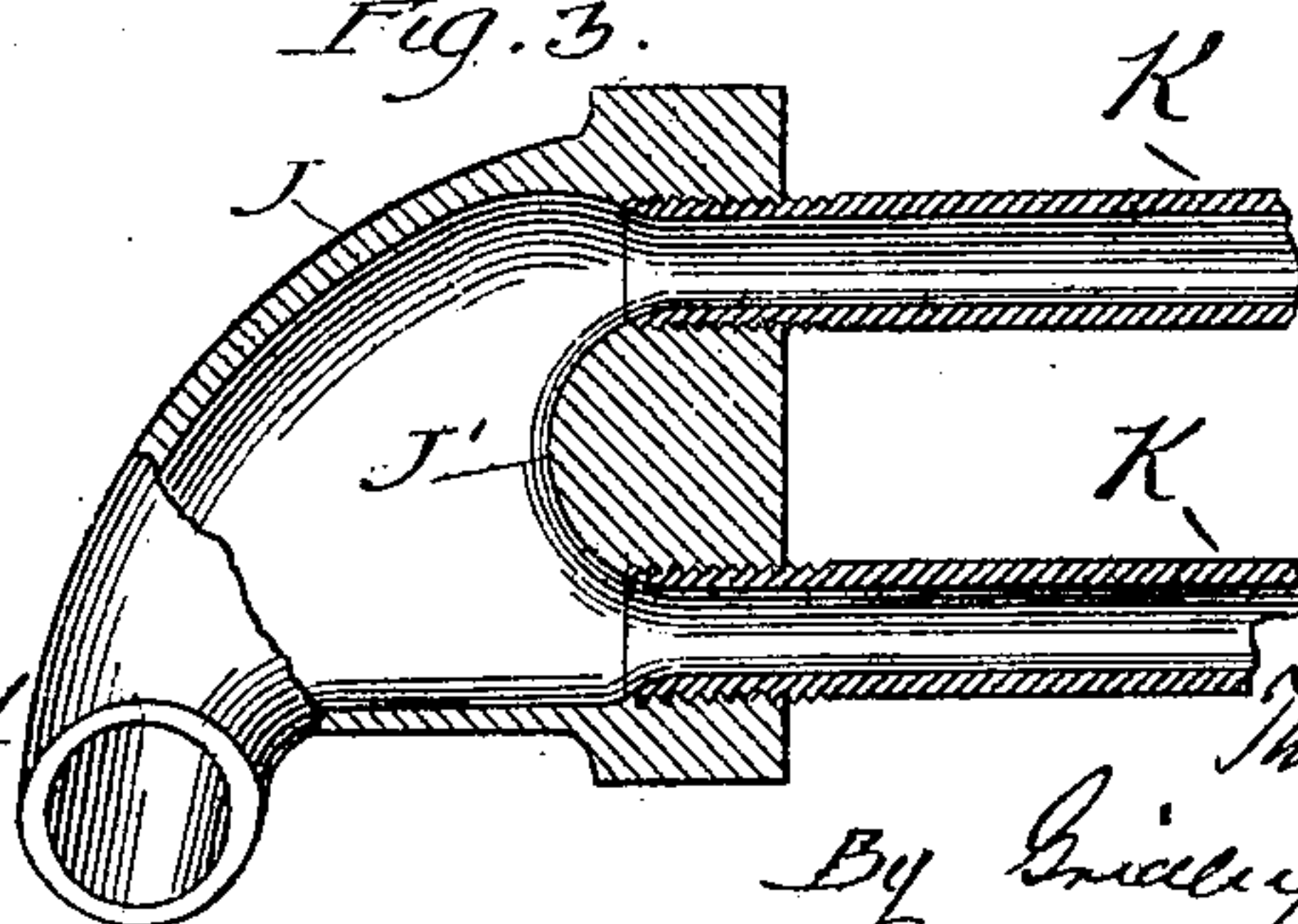


Fig. 3.



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UNITED STATES PATENT OFFICE.

THOMAS D. STEWART, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE RYDER MANUFACTURING COMPANY, OF BINGHAMTON, NEW YORK.

FLAT-IRON.

SPECIFICATION forming part of Letters Patent No. 680,367, dated August 13, 1901.

Application filed September 28, 1899. Serial No. 731,977. (No model.)

To all whom it may concern:

Be it known that I, THOMAS D. STEWART, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Flat-Irons, of which the following is a specification.

The present invention relates to that class of flat-irons that are heated by a gas-burner disposed within the body of the iron and connected by a flexible tube with some suitable gas-supply.

The object of the invention is to provide an improved iron of this class, and to this end I have devised the several features of novelty that are hereinafter fully described and in which the present invention resides.

In order that the invention may be fully understood, I will describe it with reference to the accompanying drawings, which are made a part hereof, and in which—

Figure 1 is a longitudinal section of an iron and a rest therefor embodying the invention. Fig. 2 is a transverse section thereof on the line 2 2, Fig. 1. Fig. 3 is a section of the burner on the line 3 3, Fig. 1.

The body of the iron is made of two castings, one of which is hollow and comprises the bottom A, the rear wall B, and the side walls C and D, which converge and meet at the front of the iron, and the other of which consists of a plate E, which is secured to the hollow casting by means of bolts F. Interposed between the hollow casting and the plate E is a sheet G, of asbestos or other material which is a non-conductor of heat, the plate E being provided with a downwardly-presented marginal flange *e*, which surrounds the margin of the non-conducting sheet G and protects it, the flange *e* being, however, out of contact with the hollow casting. Near the bottom the side walls C and D are provided with perforations *d* for the escape of heat, but which are too small to permit the passage of any flame. The major portion of the products of combustion escapes through openings *d'* at the top of the wall D. In order to prevent the products of combustion escaping through these openings from coming in

contact with the hand of the user, the plate E is provided above said openings with a horizontal flange E', which serves to deflect the issuing products of combustion and direct them away from the hand of the user. The inner surface of the bottom A is corrugated for the purpose of providing a maximum area for the absorption of heat from the burner.

The burner is of the Bunsen type and comprises a pipe H for the discharge of gas into a neck I, provided with openings *i*, through which the issuing current of gas draws a sufficient quantity of air to form a combustible mixture, a combined mixing and heating chamber J, and a burner proper, K, which preferably takes the form of a tube or tubes having perforations *k* in their under sides, so that the flame is directed downward against the corrugated bottom of the iron. The burner is inserted through an opening in the rear wall of the iron and is held in place therein by a set-screw L, having a tapering point, which engages a depression in the top side of the mixing and heating chamber J. This chamber J consists of a hollow casting, the cavity of which gradually enlarges toward the gas-outlet, its interior surface being without any angular or abrupt shoulders or projections that would tend to impede the progress of the current of gas and air passing through it or tend to cause it to eddy within the chamber. It is constructed upon a gradual curve terminating at its upper end in a practically vertical position when viewed from the side and at its lower end in a practically horizontal position. Through its front wall is formed one or more threaded openings, the number depending upon the number of burners proper, K, that are to be used, and each of these burners is screwed into one of these openings. The bore of the tube forming the burner is flared at its intake end, as shown more clearly in Fig. 3, and its flaring surface is flush and merges with the curved inner surfaces of the mixing and heating chamber. Regardless of the number of burners K that are used the mixing and heating chamber is preferably enlarged laterally in the vicinity of its outlet opening or openings, so as to pro-

vide a chamber of greater capacity than the capacity of the burner K, and thus temporarily arrest the mixture of gas and air in the chamber and enable it to become thoroughly
5 mixed and to a certain extent heated. Where more than one burner K is used, the intervening portion J' of the front wall of the chamber is made of convex shape, as shown in Fig. 3, so as to avoid an abrupt flat sur-
10 face against which the mixture would otherwise strike and by which it would be broken up into irregular currents. In addition to the upward and downward curvature of the mixing and heating chamber it is also curved
15 or deflected laterally or toward one side of the iron, as shown in Figs. 2 and 3, in order that it will not be in the way of the arm of the operator.

The burner as a whole is removable from
20 the iron, and when it is desired to do so it may be arranged on the iron-rest M, with the perforations k presented upward, and in this use of it the burner and rest constitute, in effect, a gas-stove. To this end the rear side
25 of the rest is depressed, as shown at m , to form a seat for the mixing and heating chamber J, and the front portion of the rest is provided with a similar seat m' for the forward end of the burner proper, K, this arrange-

ment of the burner being indicated by dotted 30 lines in Figs. 1 and 2.

What I claim as new, and desire to secure by Letters Patent, is—

1. A flat-iron having a hollow body and a burner disposed therein, said burner having 35 a combined mixing and heating chamber, said chamber being curved upward and downward so that its upper end is practically vertical while its lower end is practically horizontal, and provided with an outlet for gas, 40 said chamber being also gradually enlarged toward its outlet, substantially as set forth.

2. A flat-iron having a hollow body, and a burner disposed therein, said burner comprising the gas-pipe H, the neck I having air- 45 openings, the mixing and heating chamber J curved upward and downward and also toward one side, said chamber being provided at its lower end with an outlet for gas and being enlarged toward said outlet, and the 50 tube K communicating with the outlet of the mixing and heating chamber and provided with openings for the discharge of the gas, substantially as set forth.

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Witnesses:

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