

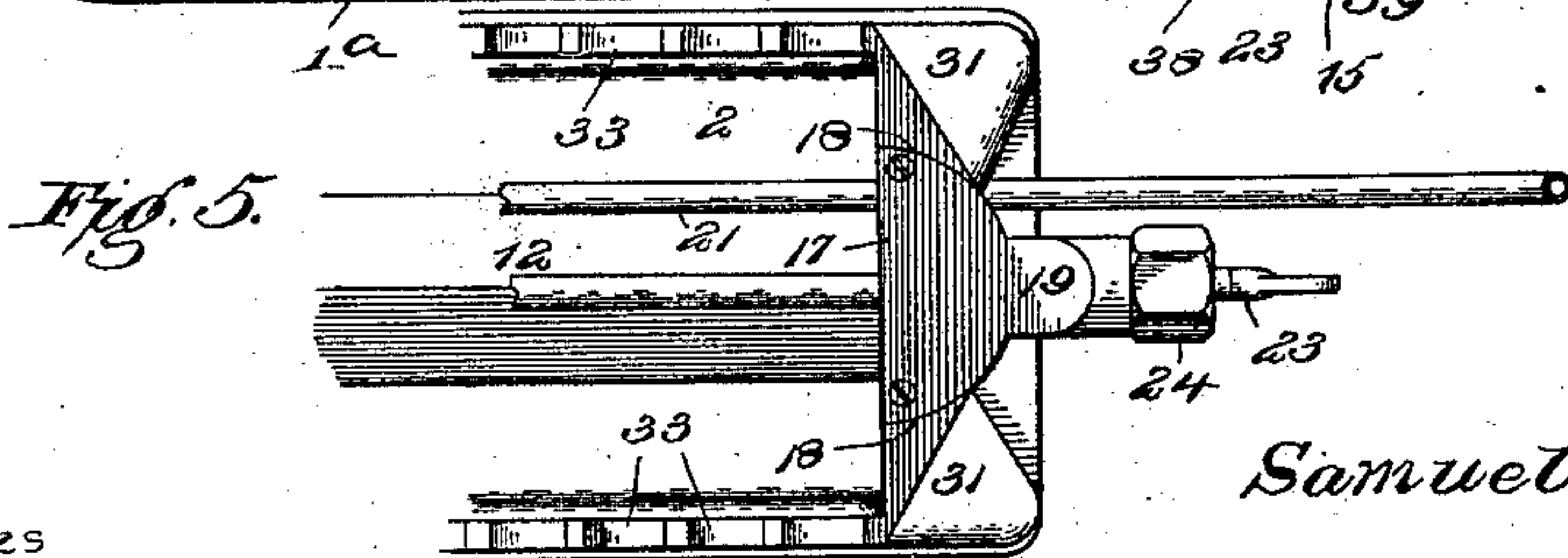
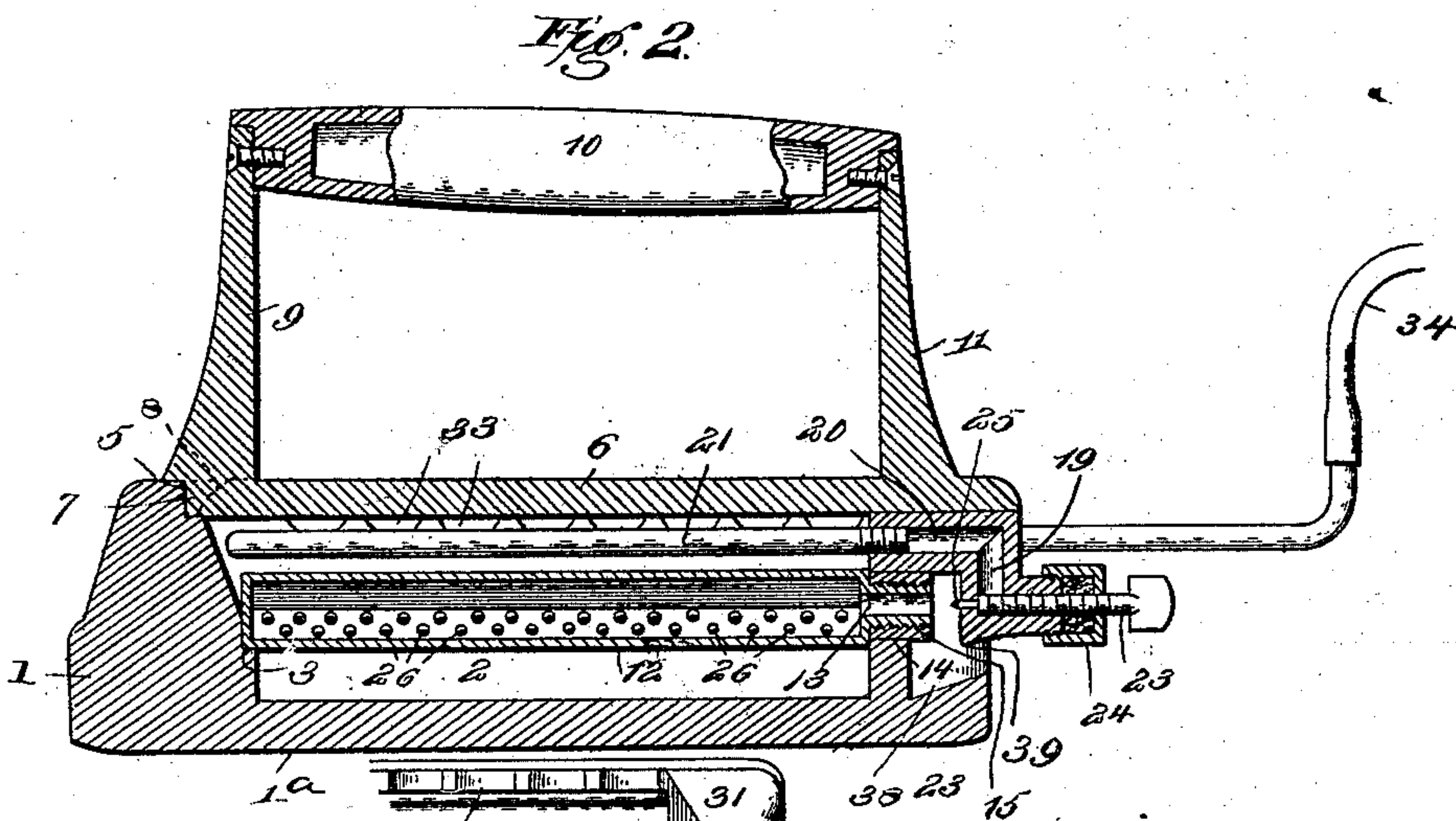
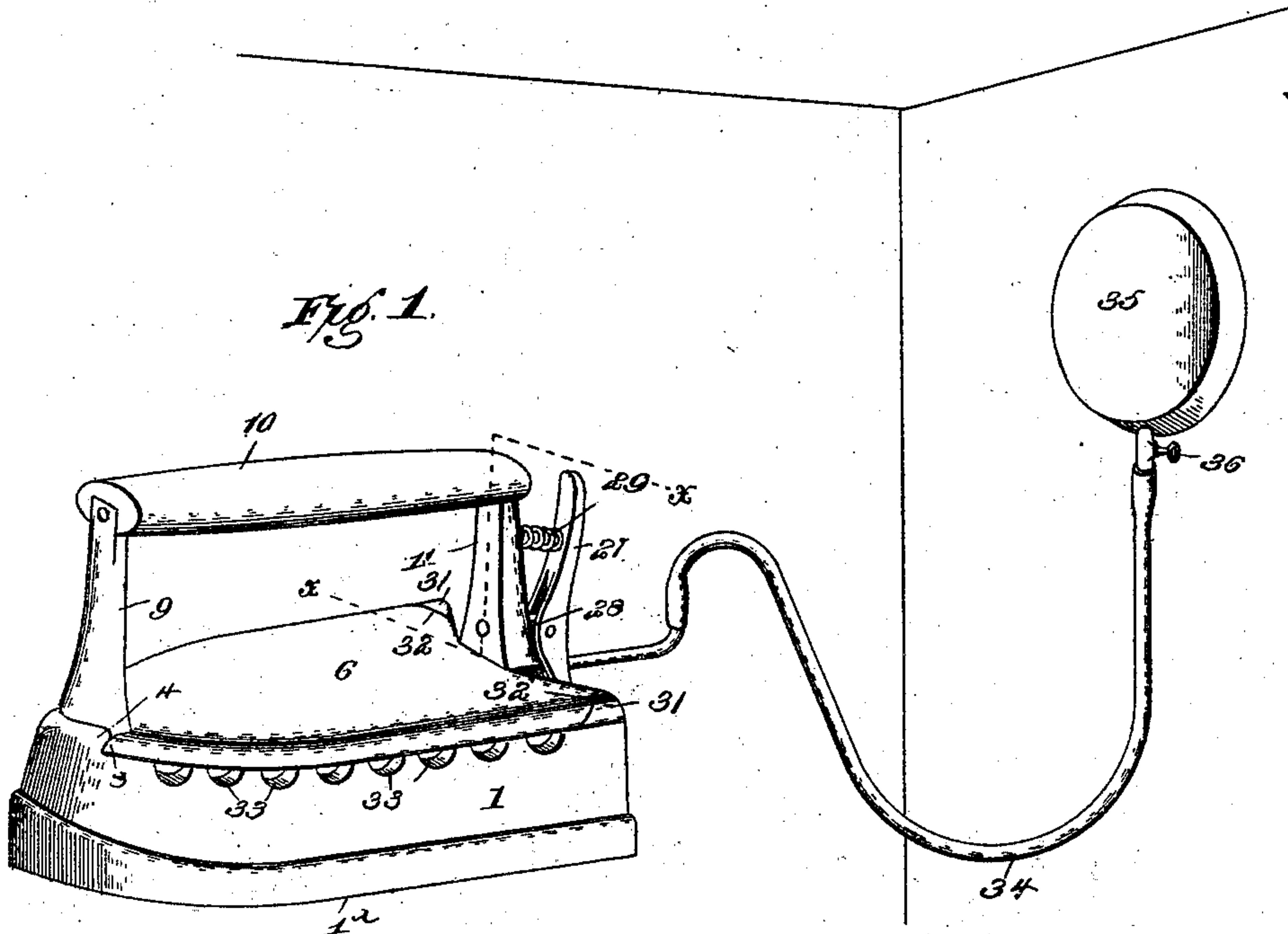
(No Model.)

2 Sheets—Sheet 1.

S. R. SPRADLIN.  
SAD IRON.

No. 553,197.

Patented Jan. 14, 1896.



Witnesses

*John C. Shaw.*  
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*C. A. Snow & Co.*

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

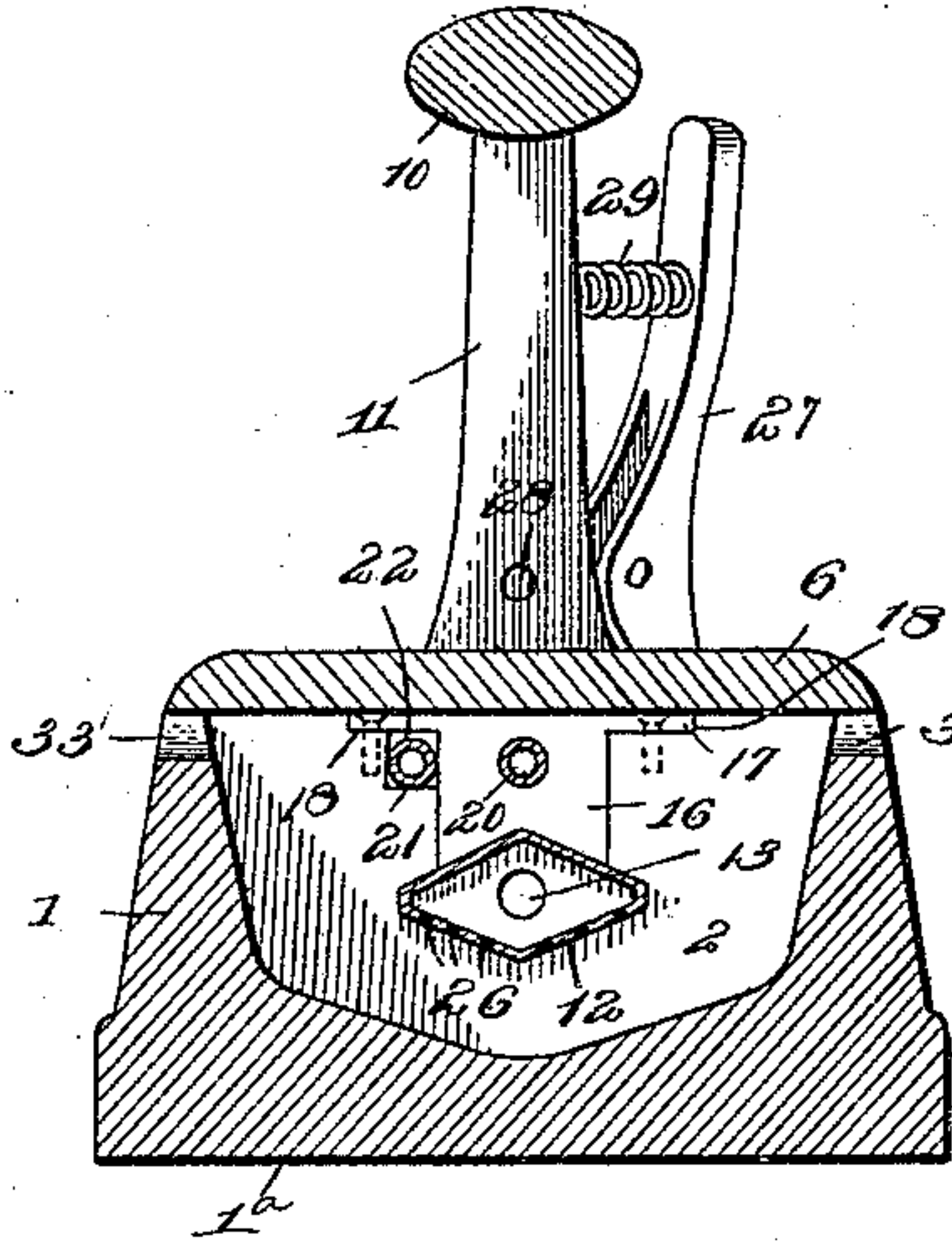


Fig. 4.

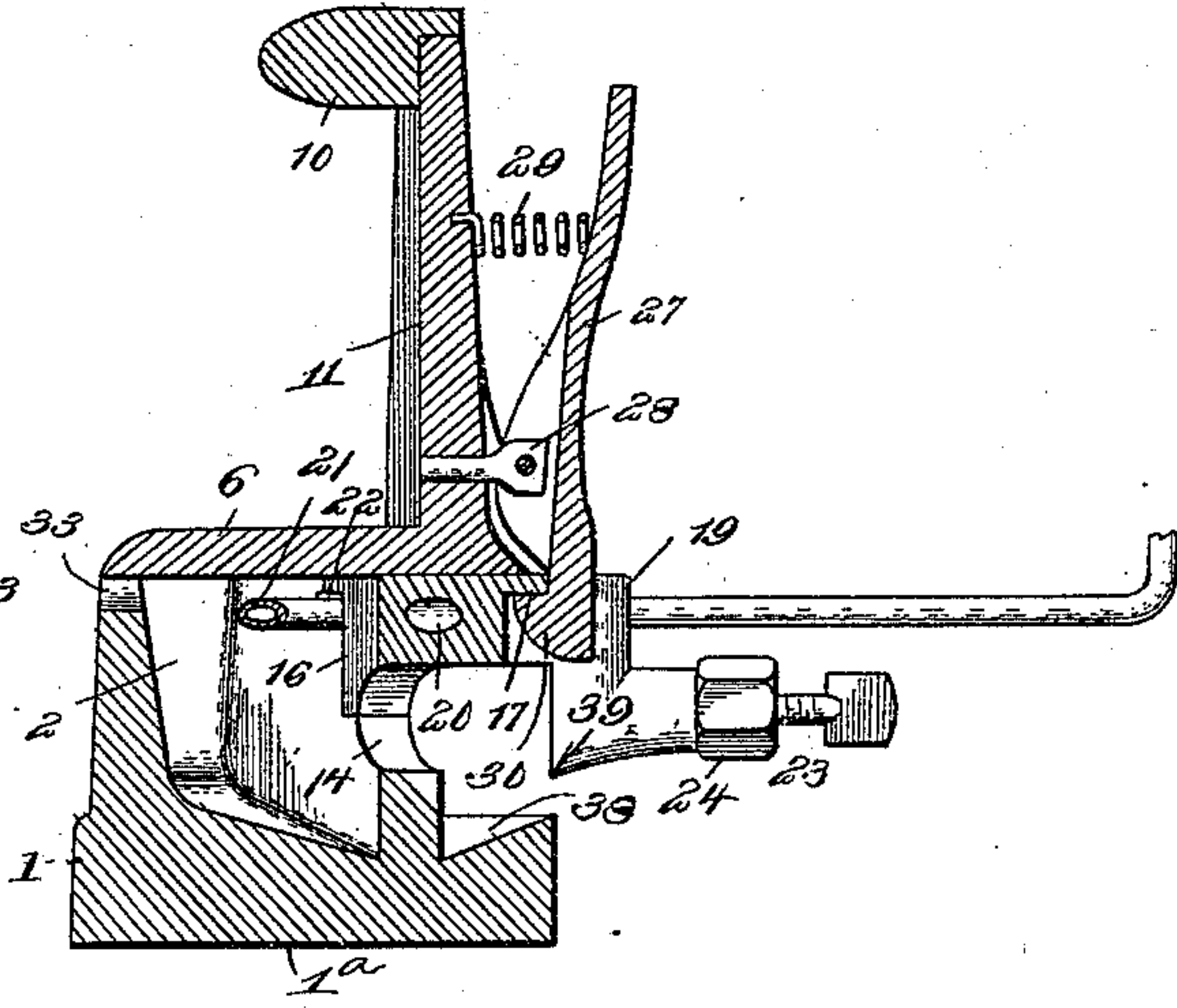


Fig. 6.

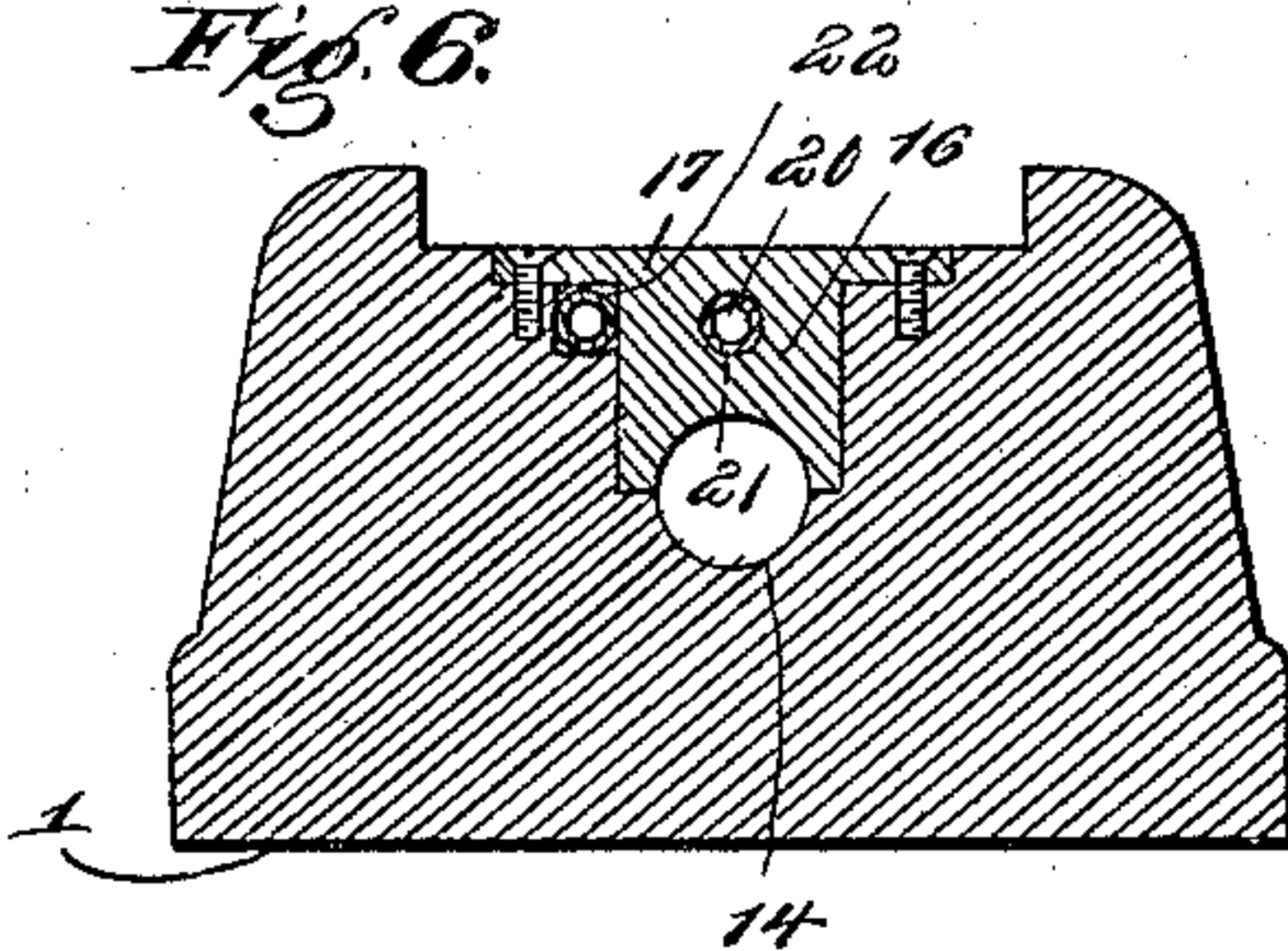


Fig. 8.

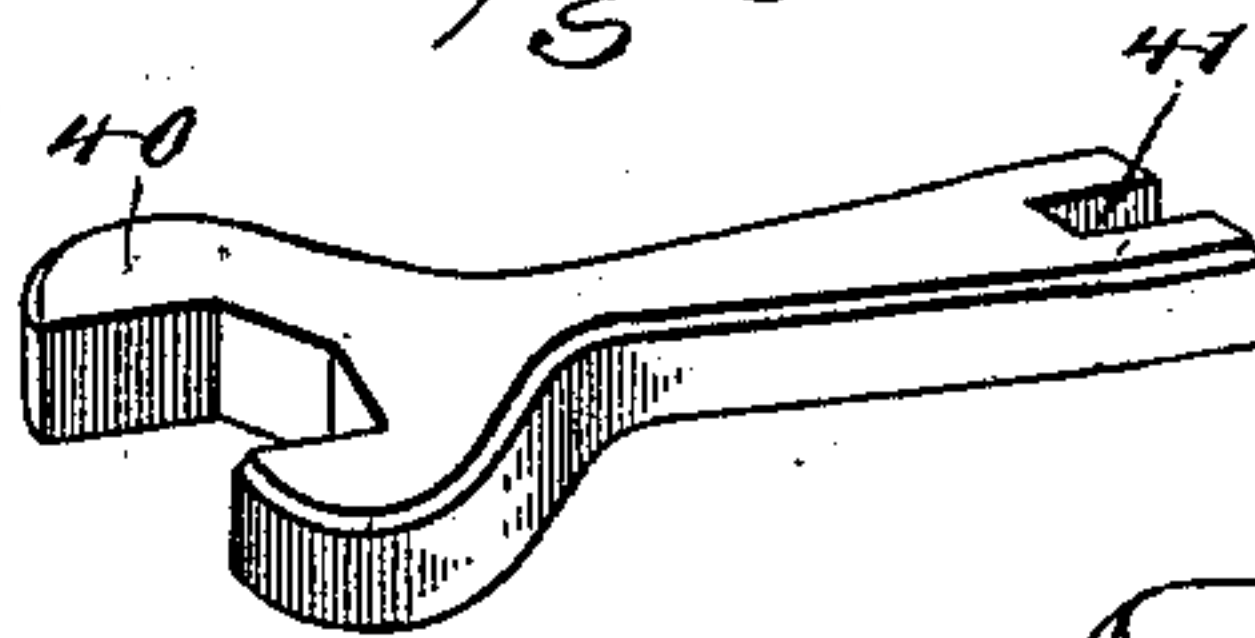


Fig. 9.

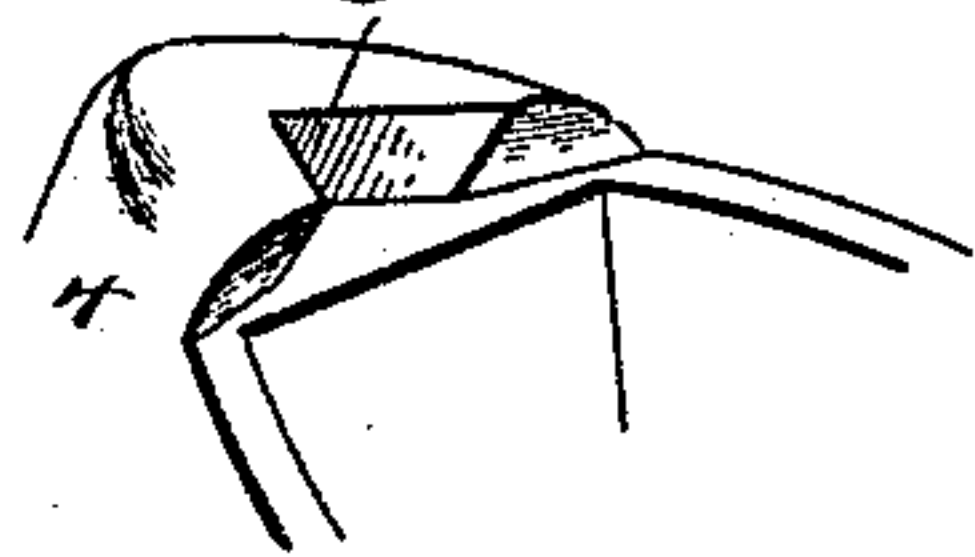


Fig. 10.

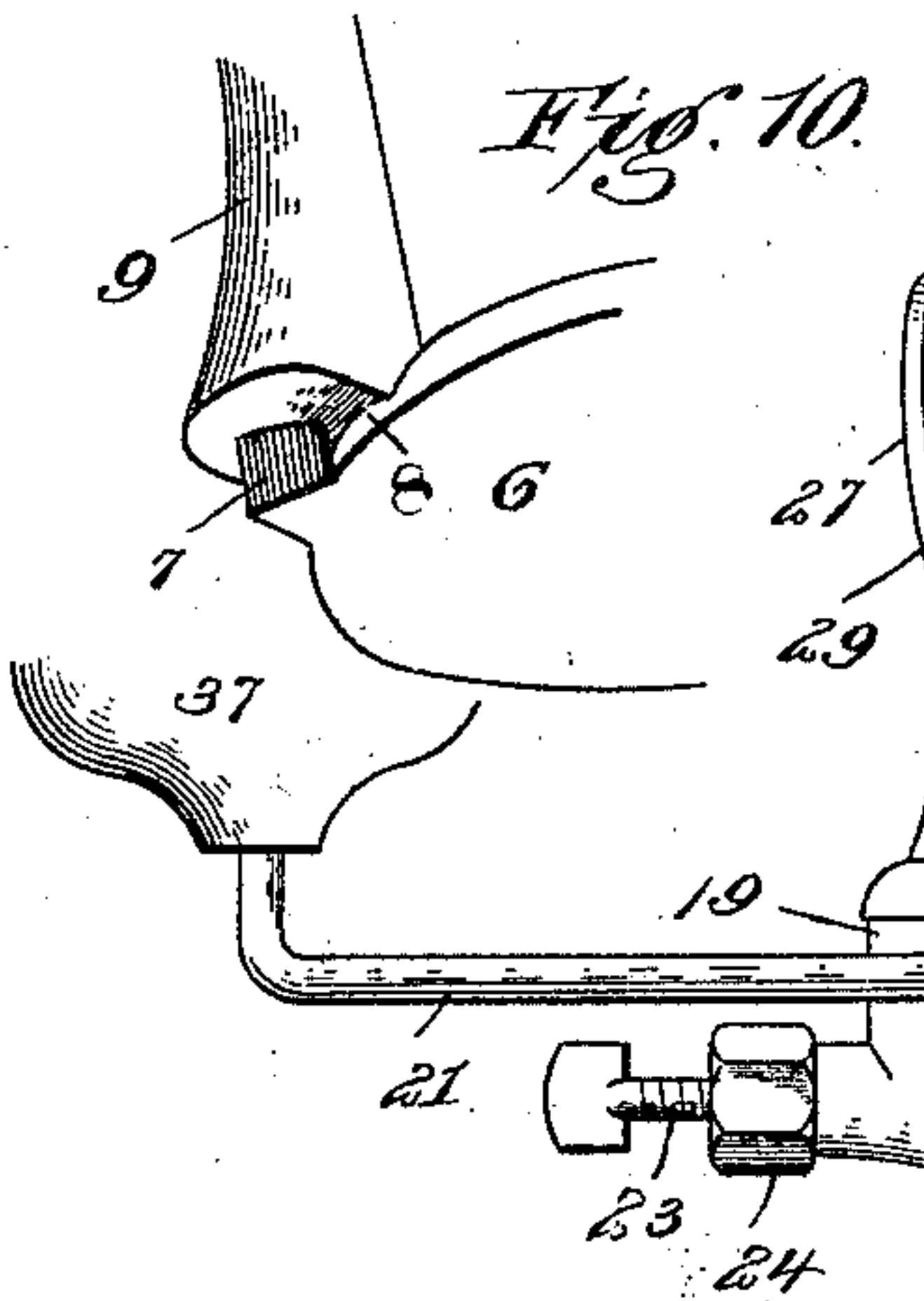
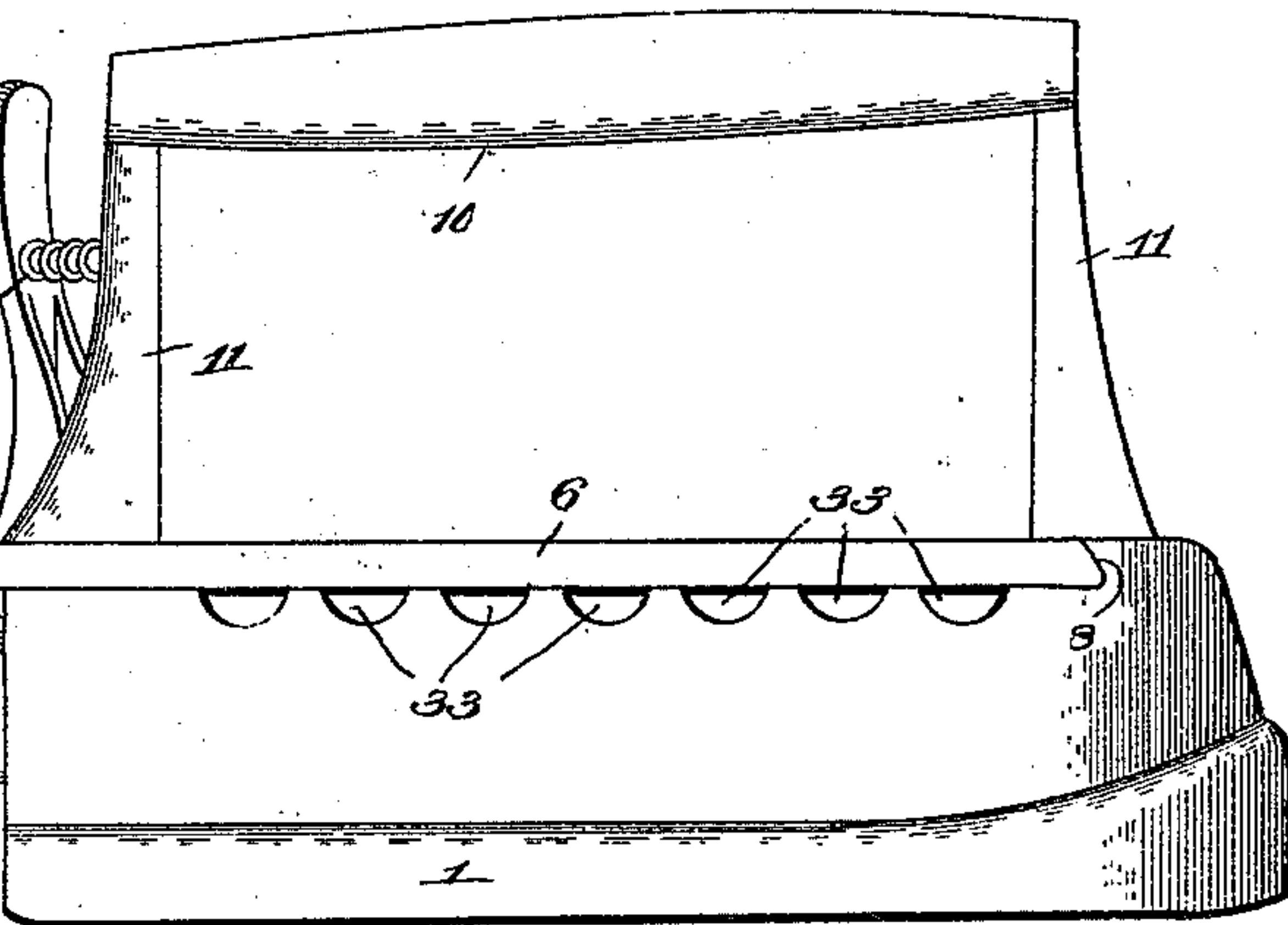


Fig. 7.



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# UNITED STATES PATENT OFFICE.

SAMUEL ROSCOE SPRADLIN, OF NORTH TOPEKA, KANSAS.

## SAD-IRON.

SPECIFICATION forming part of Letters Patent No. 553,197, dated January 14, 1896.

Application filed December 28, 1894. Serial No. 533,222. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL ROSCOE SPRADLIN, a citizen of the United States, residing at North Topeka, in the county of Shawnee and State of Kansas, have invented a new and useful Sad-Iron, of which the following is a specification.

The invention relates to an improvement in sad-irons of that class which are heated by a fluid-burner located within them, it being necessary, of course, to form them hollow, so as to be capable of receiving the fluid-burner.

The object of the invention is to improve the construction of these devices and provide one which will be capable of more effectively ironing the clothes, and one which, at the same time, may be used without interference with the operation of the heating apparatus.

It is also my object to make the device less cumbersome than is the case with other devices of its kind.

To these ends the invention consists in a sad-iron having a body portion hollow throughout its interior and having an open upper side covered by a removable lid or top and having therein a peculiarly-constructed heating apparatus, the characteristic features of which are a longitudinally-extending burner-tube, over the top of which a generating-pipe is extended. The terminal of this generating-pipe is in communication with a valve which is arranged to direct the vaporized fluid into the burner-tube, the said valve being of a peculiar construction, hereinafter specified.

All of these features of construction will be fully described hereinafter and finally embodied in the claims.

In the drawings, Figure 1 represents a perspective view of a sad-iron constructed after the manner of my invention. Fig. 2 is a longitudinal and vertical section thereof. Fig. 3 is a cross-section looking rearwardly. Fig. 4 is a detail section illustrating in particular the catch for holding the top of my device in place, and taken on the line *xx* of Fig. 1. Fig. 5 is a detail plan of a portion of the sad-iron. Fig. 6 is a detail section of the same portion. Fig. 7 is a view illustrating a modification. Fig. 8 is a perspective view showing a wrench which I have devised for use in connection with my improvements. Figs. 9 and 10 are

detail perspective views illustrating the construction of a portion of the top plate of my invention and the adjacent portion of the body.

The body 1 of my improved sad-iron is formed of cast metal, preferably steel, and comprises a polishing-surface 1<sup>a</sup> and hollow interior 2. The iron tapers to a point at the front, as is usual, and has its interior formed with a shoulder 3, which is located at the front portion of the iron, and which operates as will be described hereinafter. The upper front portion of the iron has formed thereon the shoulders 4, and these have the central notch 5 therein.

6 indicates the top or cover for the body of the iron, and this is shaped in conformity with the shape of the iron and has at its front portion a nose 7 adapted to fit within the notch 5, while the beveled front ends 8 are respectively adapted to lie under the shoulders 4. By these means a snug connection is formed between the parts. Arising vertically from the front of the top 6 is the arm 9, which projects forwardly from the front end of said top, so as to lie over the upper sides of the shoulders 4. The upper extremity of the arm 9 is mortised into the front end of the handle-bar 10, and this handle-bar has its rear end similarly secured to the arm 11, arising vertically from the corresponding end of the top 6.

12 indicates the burner-tube, which is preferably diamond-shaped in cross-section and which has a closed front end, the same being seated upon the shoulder 3, formed at the inner front side of the body portion 1. The rear end of the burner-tube 12 is provided with a reduced inlet-tube 13, which is seated within a semicircular depression 14 formed in the rear side of the body portion 1. This inlet-tube 13 is provided with a threaded sleeve 15, which is mounted on it so as to be capable of being adjusted longitudinally by screwing it on the threads and which has for its purpose to increase the longitudinal length of the tube 13 for a purpose hereinafter described.

The valve for commanding the flow of vaporized fluid or gas into the burner-tube 12 comprises a saddle 16, which is mounted upon the reduced inlet-tube 13, and which has



at its upper side the semicircular plate 17, arranged with its plane edge parallel with the rear side of the body 1 of the iron, and with its curved edges seated in correspond-  
 5 ingly-shaped recesses 18 formed in said rear side of the body portion. Communicating with the saddle 16 is the rearwardly-extending tube 19, which bends downwardly and thence horizontally and rearward. This tube  
 10 communicates with a longitudinal passage 20 formed in the saddle 16.

21 indicates the generator-tube, which has its outlet end fitted into the passage 20 and therefore in communication with the tube  
 15 19, and which is formed within the body portion 1 as a loop, it being extended forwardly and thence rearwardly and through an opening 22 formed in the rear side of the body portion 1, from whence it proceeds, as will be  
 20 hereinafter described, to the oil or fluid tank.

23 indicates a needle-valve, which is screw-threaded and which operates in a cap 24, mounted upon the outer end of the tube 19. This valve 23 extends horizontally through  
 25 the lower horizontal portion of the tube 19 and has at its front end a very much reduced portion or needle proper, 25. This needle proper operates within a correspondingly shaped and proportioned opening formed in  
 30 the front extremity of the lower horizontal portion of the tube 19. Thus by screwing the valve 23 so that the reduced portion 25 will move in and out of this opening said opening may be opened and closed, as is common in  
 35 all needle-valves.

The reduced portion 25 of the valve 23 is long enough to extend entirely through the opening in the pipe 19, thereby making the  
 40 said reduced portion capable of filling said opening and performing the twofold function of closing the same and of preventing it from becoming clogged with dirt and other foreign matter. The cap 24 is for packing the valve 23 and for preventing the gas or vapor from  
 45 escaping.

It will be seen that the vapor from the tube 21 upon the opening of valve 23 will pass through the opening in pipe 19 and escape under pressure, so as to be directed into the  
 50 inlet-tube 13 of the burner 12. During this passage from the tube 19 to the tube 13 the gas will gather and carry with it a certain portion of atmosphere, which is necessary to the effective combustion of the gas, as will  
 55 be understood. Now, in order to make the amount of atmosphere which is carried into the burner variable, so that this will be under the control of the operator, the sleeve 15 is provided and mounted upon the tube 13,  
 60 so as to be capable of adjustment thereon, whereby the tube 13 may be extended longitudinally and whereby the distance between the opening in pipe 19 and the mouth of said tube may be regulated, with a result which  
 65 will be obvious. The burner-tube is provided on its under side with the perforations 26,

which have for their purpose to permit the escape of the gas, and it is at this point that the gas is ignited and consumed.

It will be observed that the jets from the  
 70 burner-tube will be directed downwardly and outwardly diagonally from said tube, so that they will engage the bottom of the body portion of the iron and thence be deflected upwardly around either side of the burner, so  
 75 as to effectively heat both the bottom and sides of the iron.

The part of my device which carries the valve is held securely in place by screws passing down through the semicircular plate 17  
 80 and into engagement with the rear side of the body of the iron. This makes the said section rigid on the body portion and enables the top 6 to be firmly connected thereto, and consequently to the body portion, through  
 85 the medium of the spring-catch 27, which is fulcrumed to a stud 28 fixed to the arm 11 of the top 6.

29 indicates a spring which bears against the upper end of the catch 27 and against the  
 90 corresponding portion of the arm 11, whereby the lower end of the catch is pushed inwardly and the hook 30 thereof caused to take under or engage with the rear side of the plate 17. This securely and effectively holds the top in  
 95 place at the rear side of the iron, while the front side is prevented from becoming disengaged by means of the shoulders and co-operating devices described hereinbefore.

31 indicates two shoulders which are ar-  
 100 ranged one at each side of the iron and at the rear portion thereof and are integral with the body portion, they being formed with diagonally-disposed edges, which bear against corresponding edges 32 on the top 6.  
 105

Formed in the upper edges of the sides of  
 110 of the body portion are the notches 33, which are extended continuously throughout the sides and which form openings for permitting the escape of hot air and for ventilating pur-  
 115 poses generally, as is common in this class of irons.

The generator-tube 21 is connected to a rubber tube 34, which must be, of course, flexible, and which will be in practice about six  
 120 feet in length. This tube extends upwardly to a tank 35, which will be hung in an elevated position against the wall or some other elevated object. By these means the oil, or the fluid from which the gas is made, is fur-  
 125 nished to the burner under the necessary pressure.

36 indicates a valve by which the flow from the tank 35 may be regulated.

Fig. 7 illustrates a modified arrangement  
 130 of the tank 35, wherein it is connected to the iron by rigid means, so as to form a part thereof and so as to move in unison therewith. This is effected by connecting to the tube 21 a tank 37, which is capable of receiv-  
 135 ing the oil and holding it so that the oil may be fed to the burner. The tank of this form



must be considerably smaller than the tank 35, since it would otherwise be too heavy for practical purposes. This arrangement may be used when it is not desired or convenient to employ the other form, and in practice an iron will be provided with both devices.

38 indicates a dish-shaped concavity which is formed in the body of the iron by extending the bottom thereof rearwardly and by curving the rear side forwardly, as may be seen by reference to the drawings. This concavity is provided for receiving the drip which may escape through the pipe 19 in the shape of unvaporized fluid. To facilitate or rather to insure the delivery of this drip into the receptacle referred to above, the bend at the lower portion of the tube 19 is extended to form a projected portion or nose 39, which projects directly over the concavity 38 and directs the escaping fluid into the same.

In the use of my invention the tank 35 or 37, as the case may be, is filled with the fluid from which the gas is to be derived. This may be any gas-producing fluid and does not need specification here. Supposing now that it is desired to heat the device for ironing, the valve 23 should be opened and the oil allowed to run down into the cavity 38. When a sufficient quantity of oil has been placed in this cavity it should be ignited, and the flame therefrom will arise and heat the valve-casing and its adjacent parts, so as to vaporize the oil, which will subsequently escape through the opening in the pipe 19 in the shape of gas. From this point it will be ejected into the pipe 12 and will escape through the burner-openings thereof, where it may be ignited to heat the iron.

As the flame from the pipe 12 arises, it will engage with and heat the generator-tube 21 throughout the length thereof, thus taking the place of the ignited oil in the concavity 38, said concavity being only used for this purpose in the operation of starting the appliance. Thus it will be seen that the concavity 38 forms a device capable of performing a two-fold function—namely, of serving as a drip-cup to catch the accidentally-escaping oil and as a cup for receiving the oil which is to be used in starting the burner.

Fig. 8 illustrates a wrench which I have found to be useful in connection with my sad-iron, and it comprises a part 40, capable of screwing the cap 24, whereby it may be tightened as the exigencies of the occasion may require, and a part 41, which is formed to receive the head of the valve-spindle 23 in the manipulation thereof. It may be desirable to use this device when operating the apparatus, since the parts may be too hot to permit handling them with the fingers.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the prin-

ciple or sacrificing any of the advantages of this invention.

Having described the invention, I claim—

1. A sad iron comprising a hollow body open at its top, and having an inner shoulder at its front end and a recess in the upper edge of its rear side, a diamond-shaped burner located in the hollow body and supported at its front end upon the said inner shoulder, and having its rear end reduced, forming an inlet tube and seated in the said recess, a saddle mounted upon the reduced inlet end of the burner and having a plate at its upper end which is seated in a depression formed in the top edge of the said rear wall, and having a rearwardly and downwardly extending tube terminating in a horizontal valved extension opposite the said inlet tube of the burner, a sleeve mounted upon the reduced end of the burner and adapted to be moved to and from the valved extension of the saddle, a generator tube disposed within the hollow body above the diamond shaped burner and having connection with and supported by the saddle, and a cover for closing the open side of the hollow body, having a handle and detachably connected with the said body, substantially as set forth.

2. The herein shown and described sad iron, comprising a hollow body open at its top side and having a series of notches in the upper edges of its sides, and having an inner shoulder at its front end and a semi-circular recess in the upper edge of its rear side, and having a concavity in the outer wall of the said rear side, a diamond-shaped burner supported at its front end upon the inner shoulder and having an inlet tube at its rear end which is fitted in the said semi-circular recess, a saddle mounted upon the inlet tube of the burner and having a plate at its upper end which is secured within a recess in the upper edge of the said rear side, said saddle having a passage and a rearwardly and downwardly extending tube terminating in a horizontal extension fitted with a valve opposite the inlet tube of the burner, a generator tube having communication with the passage of the saddle and adapted to have connection with a suitable source of oil supply, a cover removably fitted to the open side of the hollow body and having a handle, and a sleeve mounted upon the inlet tube of the burner and confined between the semi-circular recess and the said saddle, and adapted to be adjusted over the concavity and toward and from the horizontal extension of the saddle tube, substantially as described for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

SAMUEL ROSCOE SPRADLIN.

Witnesses:

ISAAC J. GRAHAM,  
R. K. GRAHAM.