

No. 684,253.

Patented Oct. 8, 1901.

J. D. HOUSTON.  
SPRING HOLDER FOR FLASKS.

(Application filed Nov. 21, 1900.)

(No Model.)

Fig. 1.

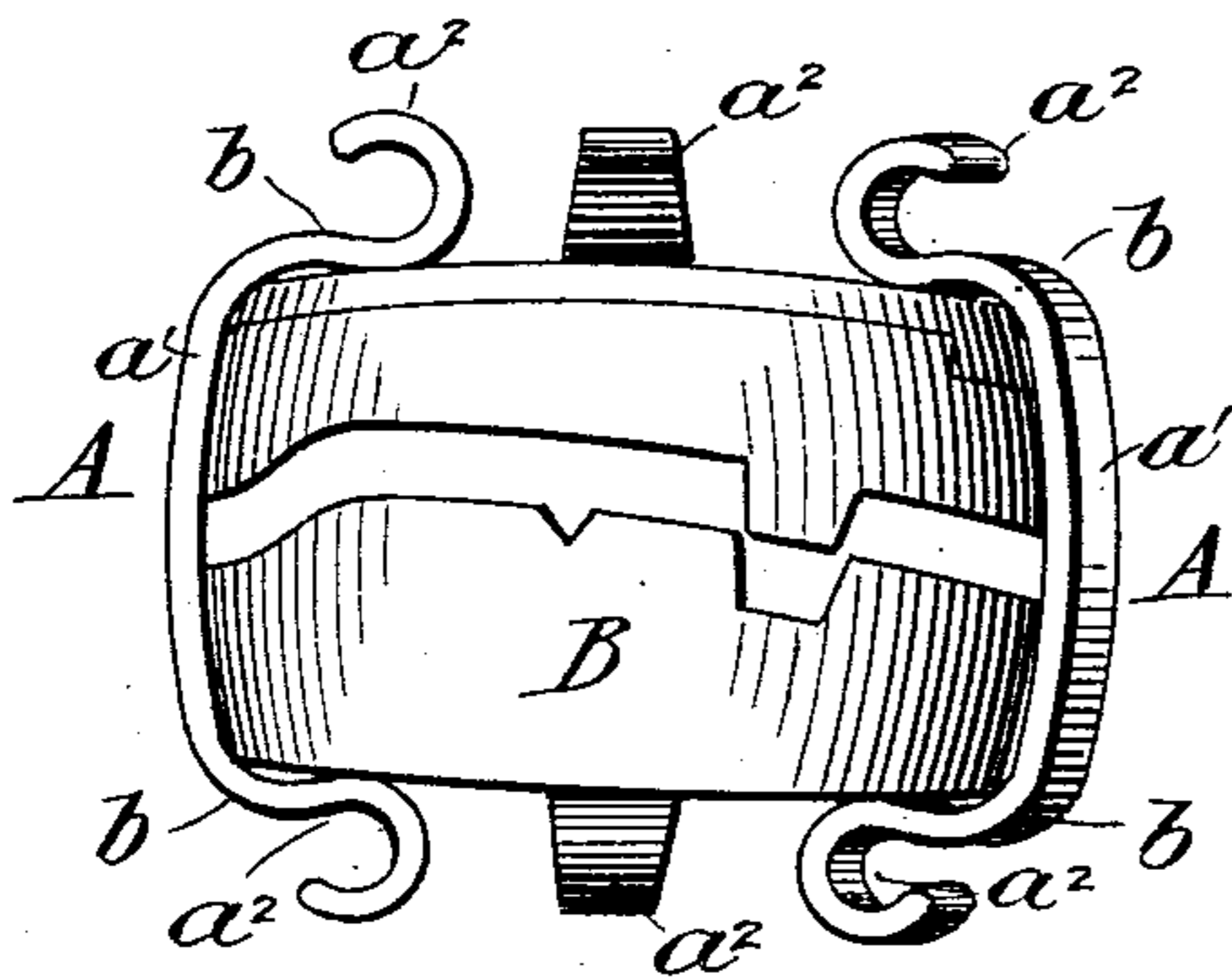


Fig. 2.

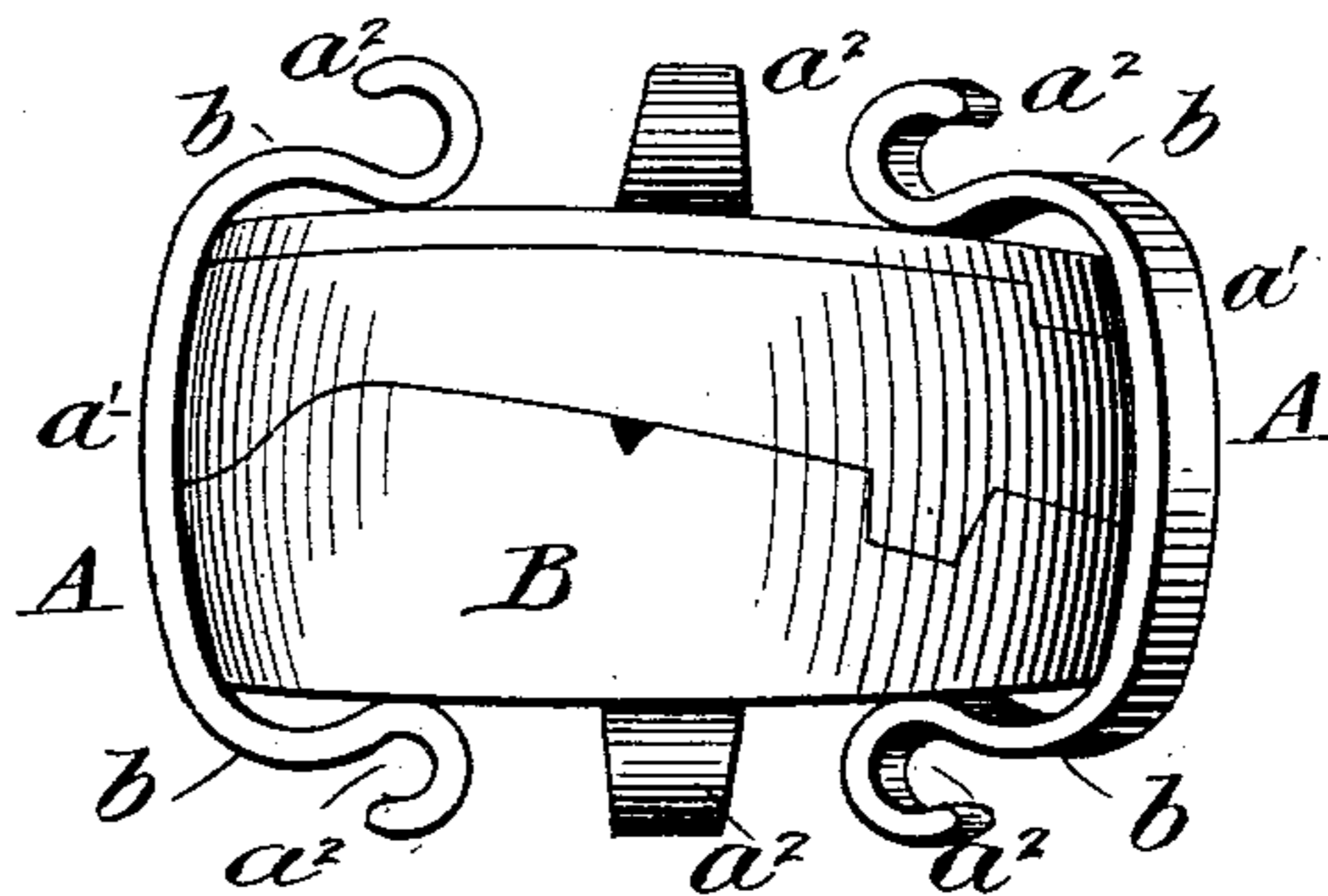
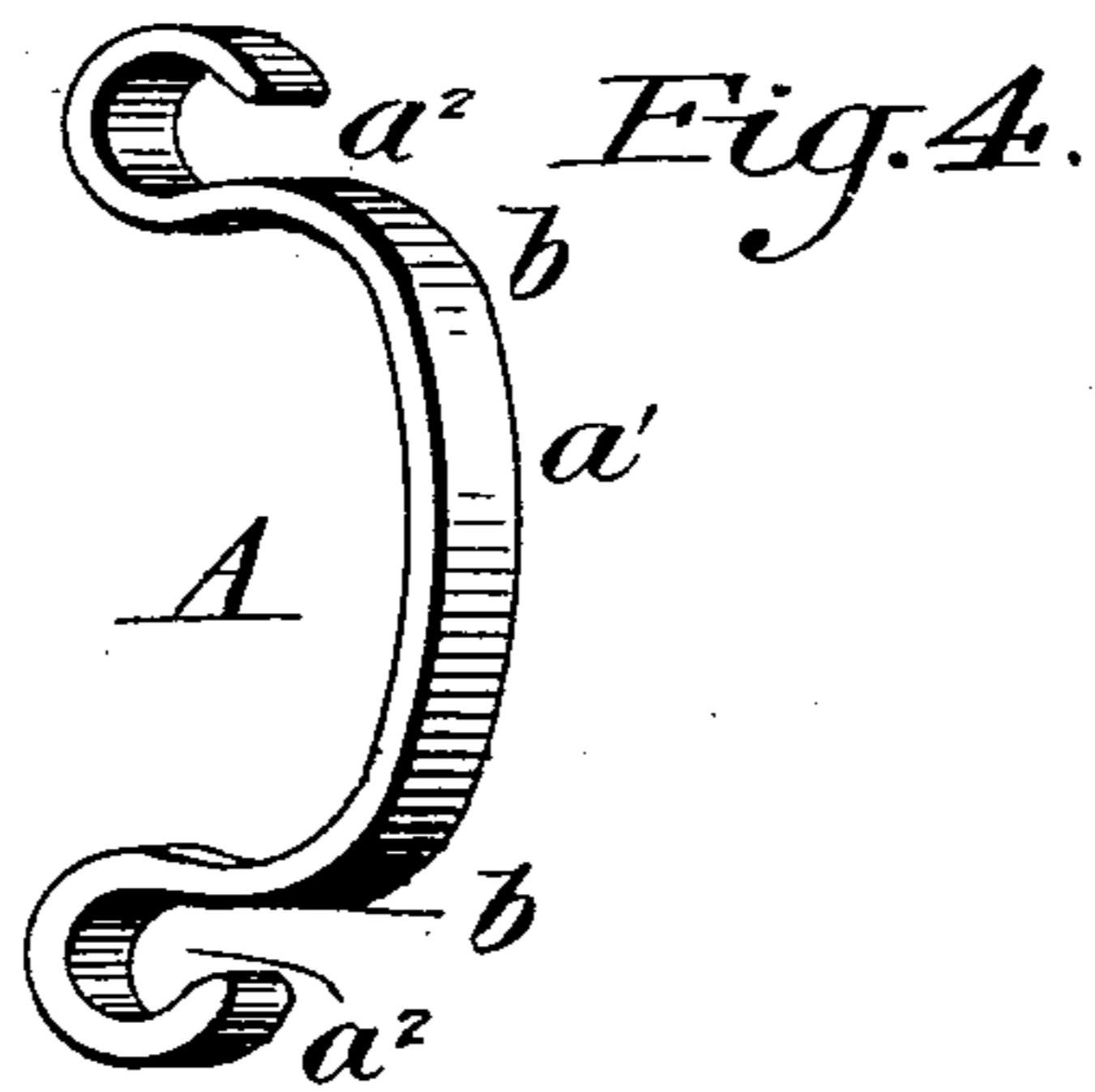
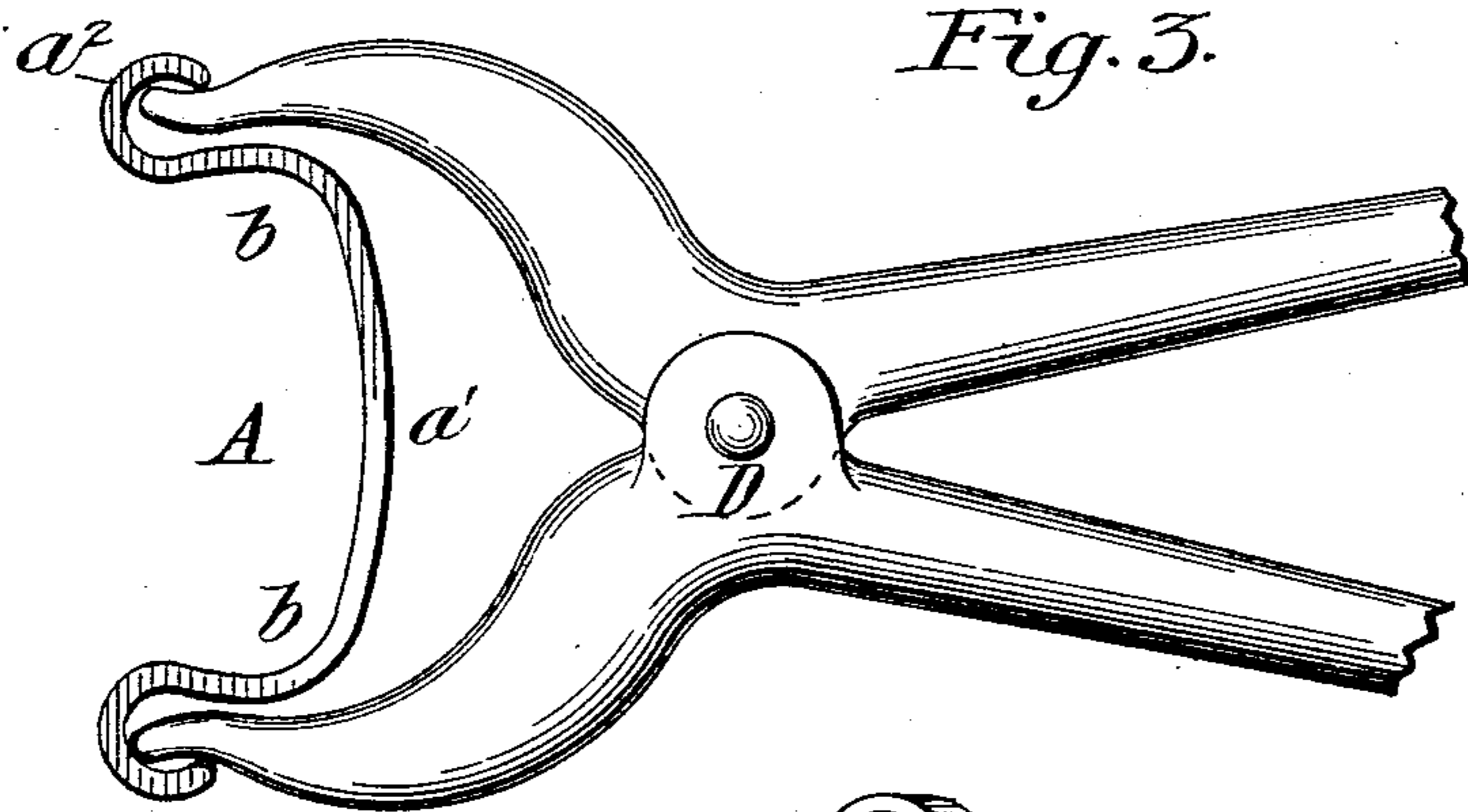


Fig. 3.



Witnesses:  
O. C. Pillman  
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Inventor:  
James D. Houston  
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# UNITED STATES PATENT OFFICE.

JAMES D. HOUSTON, OF NEBRASKA CITY, NEBRASKA.

## SPRING-HOLDER FOR FLASKS.

SPECIFICATION forming part of Letters Patent No. 684,253, dated October 8, 1901.

Application filed November 21, 1900. Serial No. 37,227. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES D. HOUSTON, a citizen of the United States, residing at Nebraska City, in the county of Otoe and State of Nebraska, have invented a new and useful Improvement in Spring-Holders for Flasks, of which the following is a specification.

My invention relates to improvements in spring-holders for flasks used by dentists in making artificial dentures or teeth, and more particularly to that class of flasks which are designed to be automatic in operation by means of springs or similar devices applied to the several parts of the flask and which are designed to automatically close the several parts when the rubber contained therein has been reduced to a plastic state.

The primary object of my invention is to produce an improved device for this purpose which will be simple in construction and efficient in operation.

With this end in view the invention consists, essentially, of an "automatic flask-spring," substantially as shown in the accompanying drawings and hereinafter more fully described, and particularly pointed out in the appended claims.

In the drawings forming a part of this specification, Figure 1 is a side elevation of a flask provided with my flask-springs and illustrating the several parts in their operative position. Fig. 2 is a similar view showing the position of the parts after the springs have performed their function. Fig. 3 is a plan view of the spreading-pliers for applying the springs to the flask, with a sectional view of the spring, illustrating the manner in which it is inserted in the pliers. Fig. 4 is a detail perspective view of the spring.

Referring to the drawings, A designates the spring, formed of a continuous piece of metal and consisting of a main body portion  $a'$ , which is preferably slightly curved, as shown, and bent intermediate the middle and end portions thereof into substantially semicylindrical shape, forming two spring-arms  $b$ . After being bent to form the oppositely-disposed spring-arms  $b$  the ends are each bent to form loops or hooks  $a^2$ , the purposes of which will be hereinafter explained.

The manner of attaching the springs to the flask is as follows: The flask is first supplied

with the requisite amount of rubber and the parts are placed in proper position, as shown in Fig. 1. The tips of the jaws of a pair of spreading-pliers D are then inserted into the loops or hooks  $a^2$  of the spring, as shown in Fig. 3, and the oppositely-disposed spring-arms  $b$  are then sprung outwardly, thus increasing the intervening space between the tips of the spring-arms. The spring is then applied to the flask B, in the manner shown in Fig. 1, by means of the spreading-pliers and released and the pliers removed. It will therefore be apparent that the oppositely-disposed spring-arms  $b$  of the springs will exert a strong inward pressure to the several parts of the flask B and that when the same has been placed in the vulcanizer and the rubber contained therein has been reduced to a plastic condition the several parts will be automatically forced together and the edges of the same firmly united, as shown in Fig. 2.

Heretofore in place of my automatic flask-springs bolts were used and the flask placed in boiling water for several minutes and removed, the bolts screwed down only a little at a time, and the flask replaced in water as before, and so on until the edges of the several parts of the flask were brought together, after which it was placed in a vulcanizer and allowed to heat to  $320^{\circ}$  and remain for a time in order to harden the rubber. It will be readily seen that this process requires considerable time and labor. With a flask equipped with my automatic flask-springs this process is rendered unnecessary, and one has simply to pack rubber in the flask, place the springs in the position shown in Fig. 1, and place the whole case in the vulcanizer at once. As the temperature rises to  $280^{\circ}$  the rubber becomes plastic and the springs automatically close down and bring the edges of the several parts of the flask together, as shown in Fig. 2, thereby molding the rubber to the form of the model inside.

The operation and advantages of my invention will be manifest to those versed in the character of work to which it appertains, and numerous modifications may be made without departing from the spirit and scope of my invention.

Having thus described my invention, what

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

1. A spring for flasks, the same consisting of a continuous piece of metal bent to form a slightly-curved main body portion, and then bent, midway between its middle and ends, into substantially semicylindrical shape forming oppositely-disposed spring-arms, and having their free ends bent outwardly to form loops or hooks adapted to receive the tips of the jaws of a pair of spreading-pliers whereby the said spring-arms may be sprung outwardly when the spring is placed upon the flask, substantially as shown and for the purpose set forth.

2. In a spring for flasks, a continuous piece of metal bent to form a curved main body por-

tion and bent, intermediate the middle and end portions thereof, to form oppositely-disposed spring-arms each bent outwardly at their free ends to form oppositely-disposed simicylindrical-shaped hooks adapted to receive the tips of the jaws of a pair of spreading-pliers whereby the said spring-arms may be sprung outwardly when the spring is placed upon the flask, substantially as shown and described and for the purposes specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES D. HOUSTON.

Witnesses:

HENRY SCHWAKE,  
OSCAR DAMMAN.