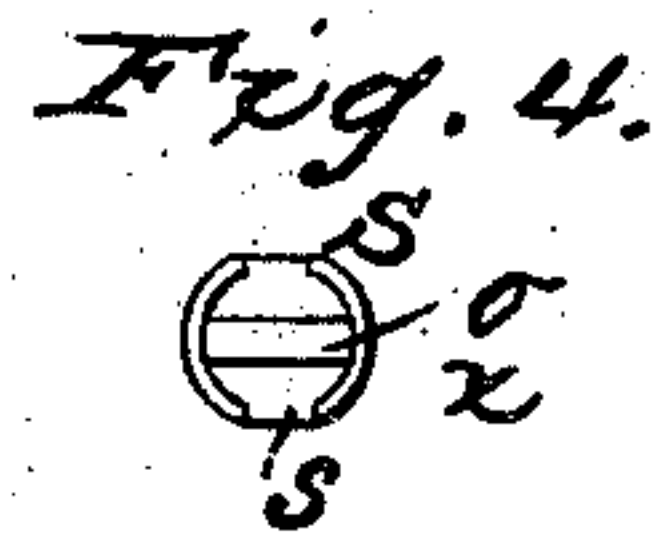
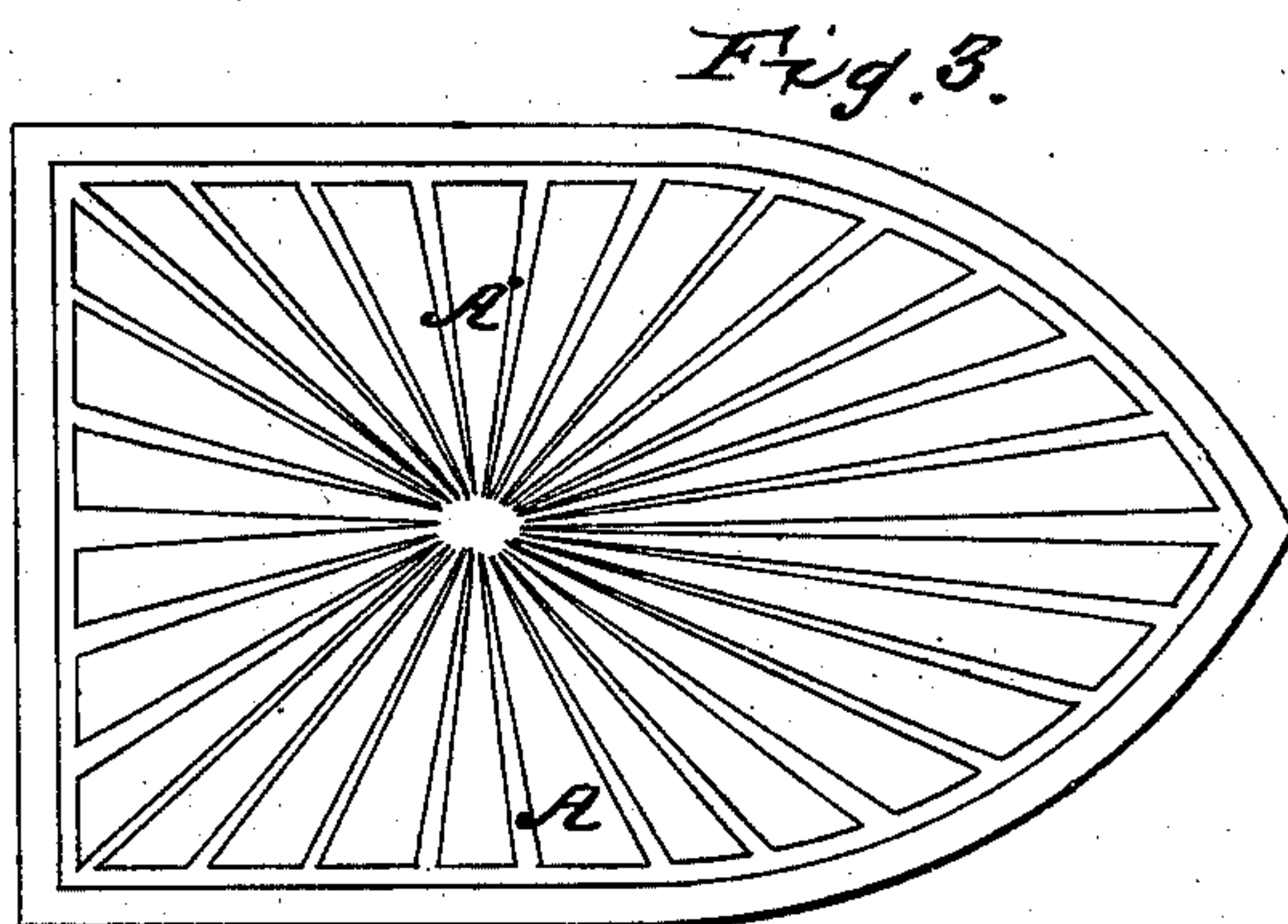
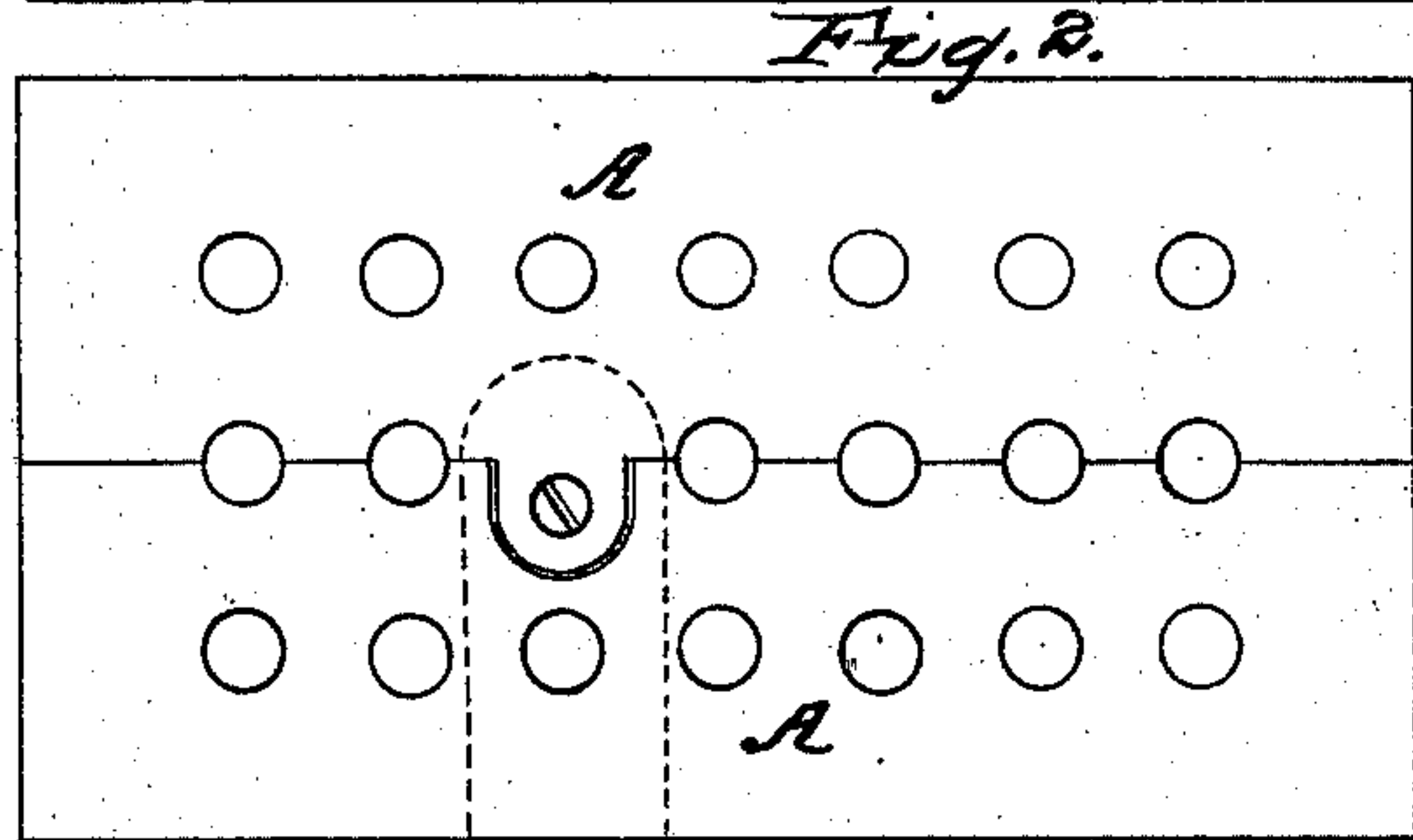
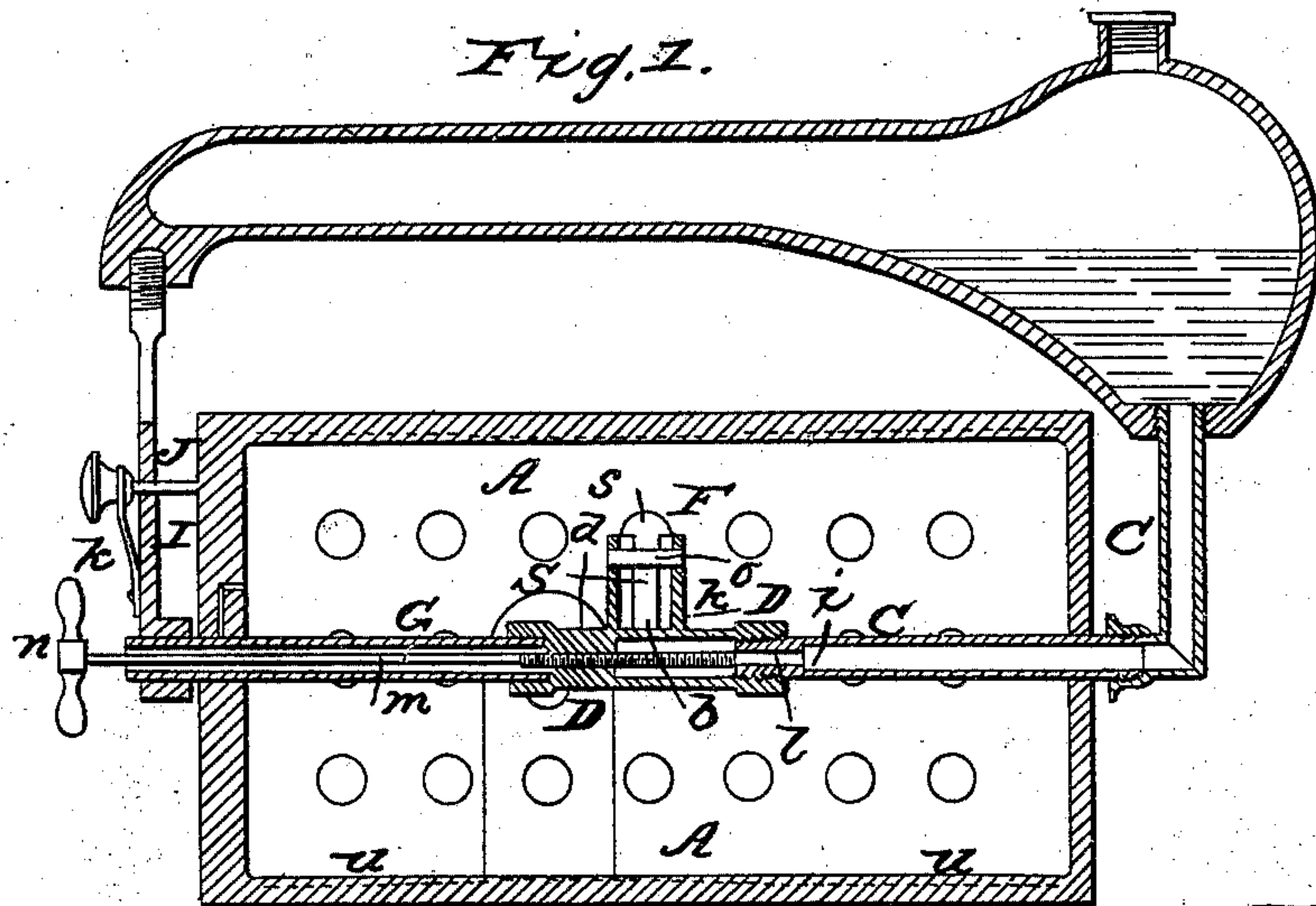


S. M. JOHNSON.
Sod Iron Heater.

No. 81,377.

Patented Aug. 25, 1868.



Witnesses:
M. H. Becker
Edward Viehlmy

Inventor:
S. M. Johnson
by Forbush & Hyatt atty.

United States Patent Office.

S. M. JOHNSON, OF LOCKPORT, NEW YORK.

Letters Patent No. 81,377, dated August 25, 1868.

IMPROVEMENT IN SAD-IRON HEATERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, S. M. JOHNSON, of Lockport, in the county of Niagara, and State of New York, have invented certain new and useful Improvements in Reversible Sad-Irons; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure I is a longitudinal vertical section.

Figure II is a side elevation, with the handle detached.

Figure III is a plan of one of the inner corrugated surfaces of the iron.

Figure IV is a plan of the burner.

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

The invention is designed as improvements on the invention patented by me, December 10, 1867, to which Letters Patent, numbered 72,047, reference is made for a particular description thereof.

The invention consists—

First, of an improved construction and arrangement of the burner and vapor-generating chamber.

Second, in the arrangement of the valve, for regulating the flow of the hydrocarbon-liquid near the burner, and operating it from the outside, by means of a rod extending through the axis of the iron.

Third, constructing the inner surface of the smoothing-faces of the iron with radial corrugations to facilitate a more uniform heating of the smoothing-surfaces.

In the drawings, A A represent the reversible iron, with two smoothing-faces, and formed in two portions, which are united at the sides by means of a screw, as shown in Fig. II. B is the handle and reservoir for containing the gasoline or other hydrocarbon-liquid to be employed in heating the iron. C is a pipe, descending from one end of the reservoir, and bent so as to pass horizontally into the iron at one of its ends. It may be formed in a single piece or not, as preferred. This pipe connects near the centre with one end of the casting D, forming the vapor-generating chamber *e* and burner F. To the other end of this casting is attached a hollow rod or pipe G, which extends through the opposite end of the sad-iron, and forms, with the pipe C, the axis on which the iron turns while being reversed.

The end of the axis is connected with the handle by a rod, I, provided with a pin, J, and a spring, *k*, for securing and retaining the handle in place after the iron has been reversed. The inner end of the pipe C is provided with a contracted conical orifice, *i*, in which fits the conical end, *l*, of a rod, *m*, which extends through rod G, and forms the valve or stop-cock for regulating the supply of the liquid to the vapor-chamber *e*. This rod is provided with a thread which screws through the end, *d*, of the casting D, and has at its outer end a thumb-piece, *n*, by which the same is turned.

If properly constructed, no stuffing-box will be required to prevent the flow of the liquid along the thread of the valve-rod, although one may be employed if desired.

The burner consists of a short vertical tube, *z*, extending from the centre of the casting D, and arranged so as to be in the centre of the iron, with a cross-wire, *o*, near the upper end, and provided with vertical slots *s*, or other openings, at opposite sides, for the free admission of air to the vapor as it escapes from a small orifice, *r*, at the bottom of the burner.

The vaporous liquid is first ignited at the orifice *r*, which soon heats the tube of the burner and the chamber *e* by radiation. The heat in this chamber causes the vaporization of the liquid as it enters the same, from whence the vapor escapes, and after a proper admixture of air, the combustion thereof takes place at the top of the burner. The cross-wire serves as a conductor of the heat to the tube of the burner, and thence to the vaporizing-chamber.

The opposite inner surfaces of the smoothing-faces of the iron are formed with radial corrugations *u u*, connecting at the centre, and increasing in depth and width as they diverge, as most clearly shown in Fig. III.

Where the smoothing-faces of the iron are made of a uniform thickness, the contact of the flame at the centre produces an increased temperature at that point.

The object of the corrugations *u* is to overcome this objection. By means of them the outer portions of

the face can be made much thinner than at the centre, and still be sufficiently stiff and unyielding on account of the ribs formed by these corrugations.

The diminution in the thickness of the metal, in connection with the conducting-channels, for the heat which the corrugations form, causes the outer portion to become sooner heated, and as consequence thereof, a more uniform and equalized temperature produced throughout the whole face than would otherwise be attained.

The slots *s*, in the tube of the burner, being formed in the sides at right angles to the direction of motion in using the iron, the flame is not extinguished by the motion of the iron, as it might be if they were formed at the front and rear of the tube. The cross-wire *o* also renders the flame less liable to extinguishment.

It likewise divides the flame, and imparts a slight divergence to the branches, so as to cause them to impinge the surface of the iron at an inclination, and thereby prevent that reflux of the flame which results when the flame strikes at right angles, and, as a consequence thereof, a more perfect combustion is the result, and an avoidance of the smoking that would otherwise ensue.

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

1. The valve *l m*, arranged with the burner F and hollow rod G, substantially in the manner and for the purpose set forth.

2. The burner F, consisting of the tube *x*, provided with slots *s s*, and radiating-wire *o*, in combination with the vaporizing-chamber *e*, arranged as and for the purpose specified.

3. The radial corrugations *u u*, arranged with the burner F, substantially as shown and described.

S. M. JOHNSON.

Witnesses:

JAY HYATT,
J. C. COOK.