



JOHN L. THOMAS, OF ALLIANCE, OHIO.

Letters Patent No. 83,108, dated October 13, 1868.

IMPROVEMENT IN STEAM-GENERATORS.

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, JOHN L. THOMAS, of Alliance, in the county of Stark, and State of Ohio, have invented a new and useful Improvement in Steam-Generators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which the drawing represents a vertical longitudinal section of a steam-boiler provided with my safety-apparatus.

This invention relates to regulating the height of water in steam-boilers.

And it consists in the construction of certain devices whereby the height of water and the steam-space are ascertained.

It also consists in an automatic arrangement for giving the alarm by a steam-whistle, as will be hereinafter described.

A is the boiler

B is a float in the boiler. The rise and fall of this float draws the chain C back and forth over the serrated wheel D, revolving that wheel and also the dial-wheel E.

F is the feed-water pipe.

G is a cock in that pipe, which is operated by the chain C.

h is a slotted lever on the cock G.

i is an adjustable plate on the lever h, by which the time of closing or opening the cock is increased or diminished, or by which the lever-purchase is lengthened or shortened.

J is a weight connected with the chain, by which the lever h is drawn down.

The chain is attached to the wheel E by a pin, as seen at k.

L is a fixed pointer on the stand m, which supports the wheel E.

On the face of this wheel are two tiers of figures, one tier over the other. The upper tier is intended to indicate the quantity of water in the boiler. The lower tier indicates the amount of steam-space in the boiler.

The periphery of the wheel D is serrated, to prevent the chain from slipping.

This wheel is supported by the stand n, which is hollow, as seen in the drawing, so that the alarm-whistle pipe o is connected with it, and passes down through it.

P is the safety-valve.

q is a cock in the safety-valve pipe o, to which a lever, R, is attached.

S is an adjustable pin, which is confined in a slot in the wheel D.

The lever R is made to stand in such a position that, when the pin is turned down to a certain point, by the falling of the float, it will be moved by the pin sufficiently to open the cock and let steam into the alarm-whistle, and give the alarm. This, of course, would not take place until the water in the boiler had fallen to a dangerous point.

The feed-water pipe F is connected with a reservoir, water-main, or force-pump, so that an equilibrium of pressure is produced in the reservoir or fountain and the boiler, and so that the water finds its way into the boiler by its own gravity, or it may be connected directly with the force-pump.

It will thus be seen that the position of the float governs the quantity of water which enters the boiler, and that the position of the float, and the amount of steam-space in the boiler, are indicated by the figures on the wheel E.

The automatic arrangement for giving the alarm would come into play only in extreme cases.

Having thus described my invention,

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

1. The combination of the float B, chain C, and weight J, with the serrated wheel D, graduated wheel E, adjustable plate i, slotted arm h, cock G, and pipe F, as herein set forth.

2. The arrangement of the pipe o, lever R, and adjustable pin S, with reference to the wheel D and whistle P, as herein described.

The above specification of my invention signed by me, this day of , 1868.

JOHN L. THOMAS.

Witnesses:

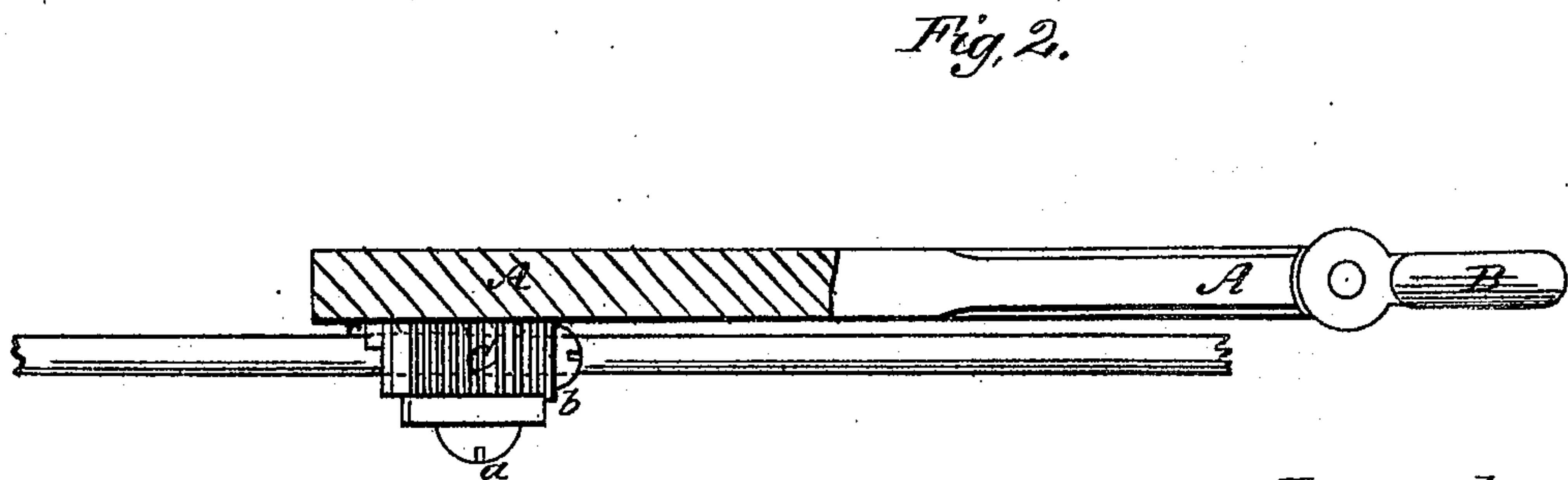
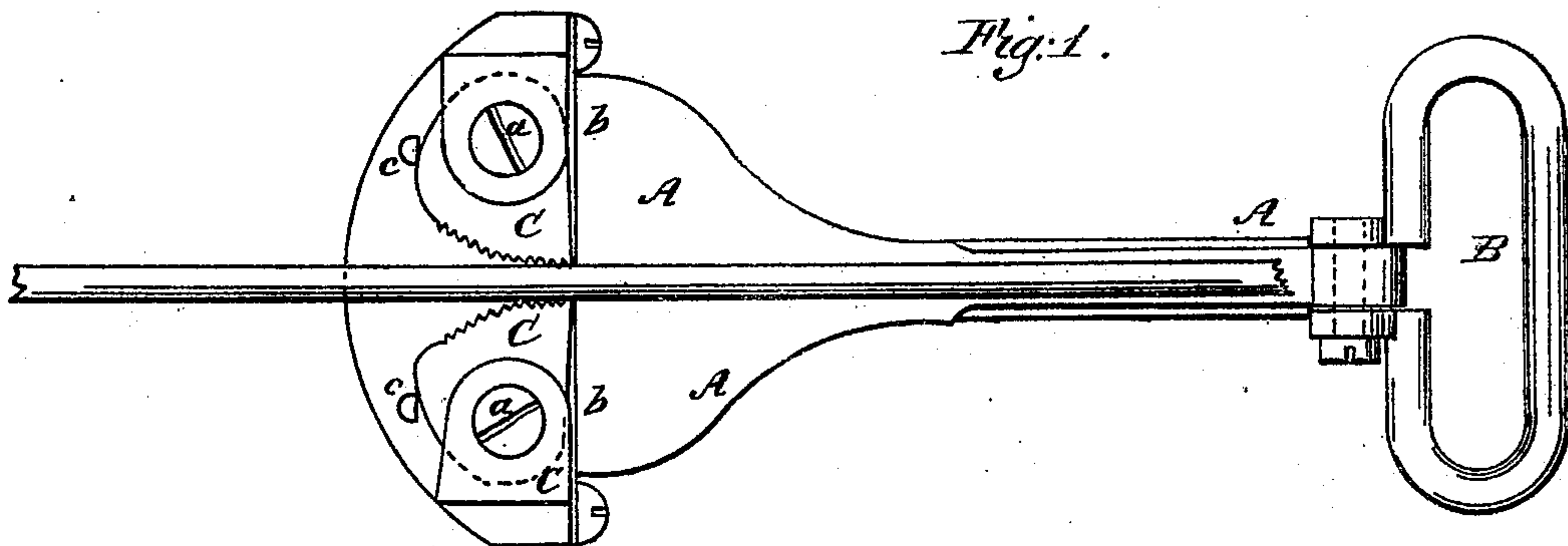
MORGAN LLEWELLYN,
FRANKLIN O. POWELL.

G. M. Thompson,

Wire-Stretching Tool.

N^o 83,109.

Patented Oct. 13, 1868.



Witnesses
J. A. Morgan
C. C. Cotton.

Inventor.
G. M. Thompson
per W. M. & Co
Attorneys.