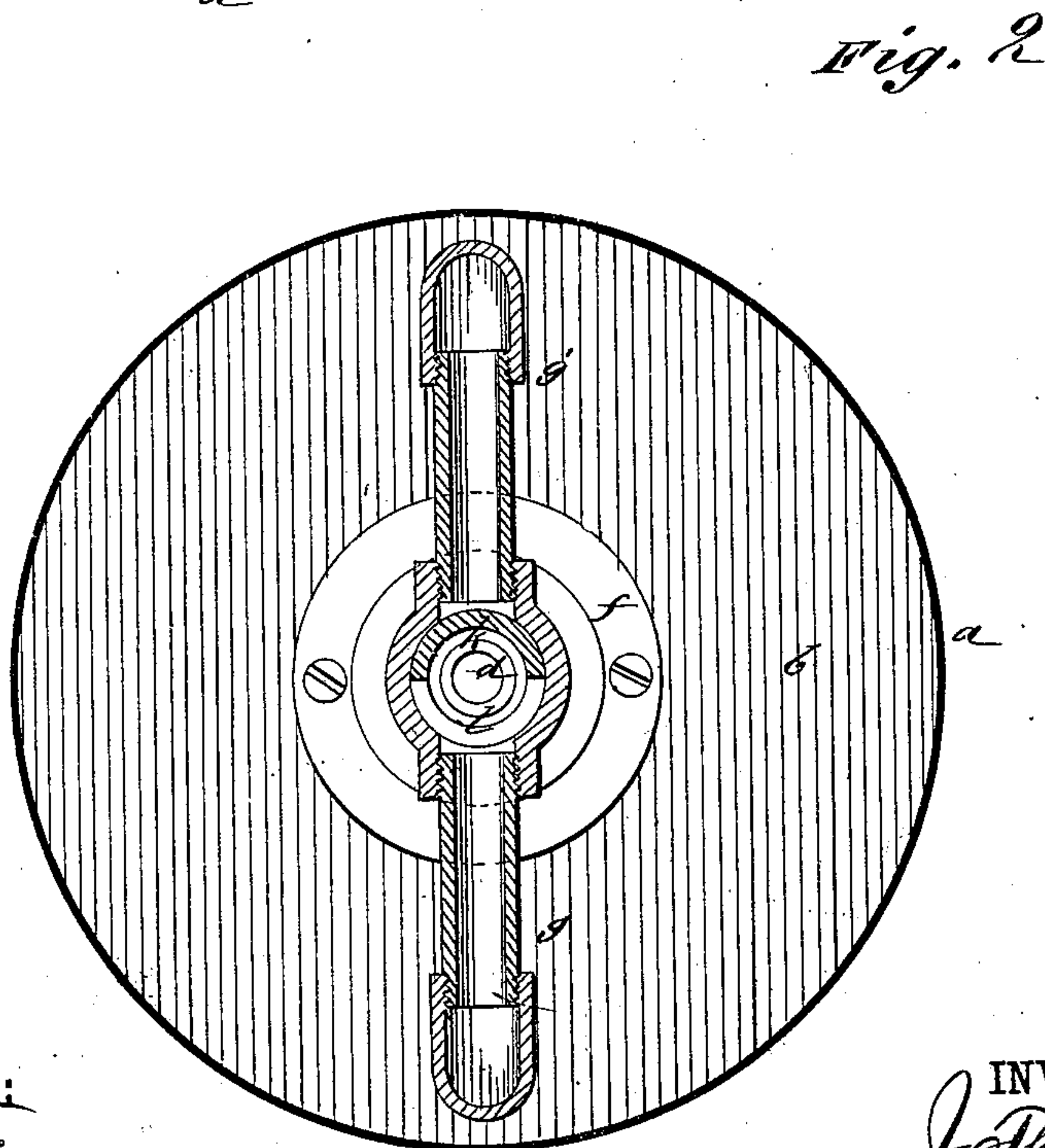
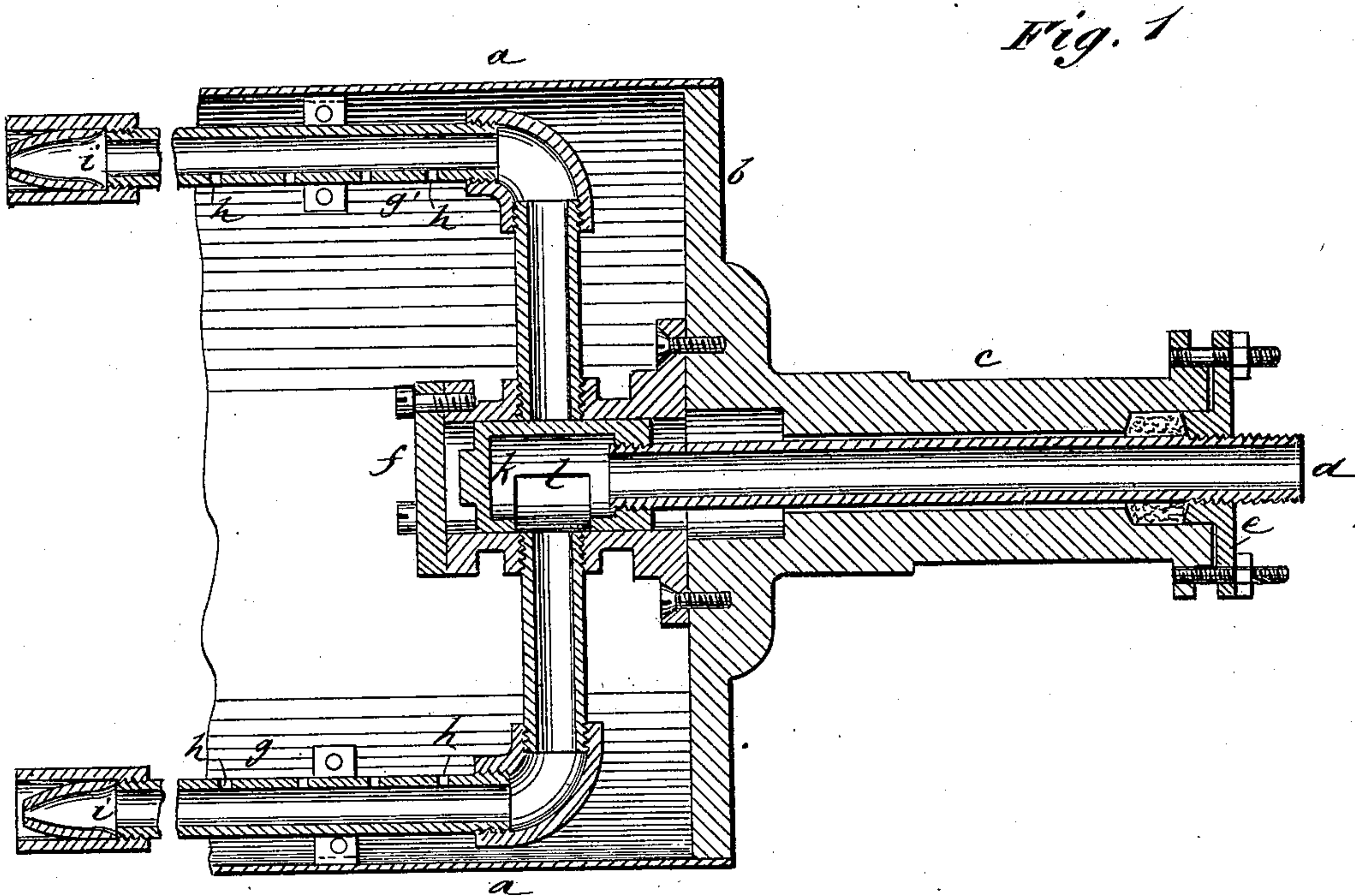


J. THORPE.  
 Rotary-Boiler for Boiling and Steaming Paper-Stock.  
 No. 206,277.      Patented July 23, 1878.



WITNESSES:  
*C. Neveu*  
*C. Sedgwick*

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 BY *Munn & Co*  
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# UNITED STATES PATENT OFFICE.

JOHN THORPE, OF FORT MILLER, NEW YORK.

## IMPROVEMENT IN ROTARY BOILERS FOR BOILING AND STEAMING PAPER-STOCK.

Specification forming part of Letters Patent No. **206,277**, dated July 23, 1878; application filed June 6, 1878.

*To all whom it may concern:*

Be it known that I, JOHN THORPE, of Fort Miller, in the county of Washington and State of New York, have invented a new and useful Improvement in Rotary Boilers for Boiling and Steaming Paper-Stock Material, &c., of which following is a specification:

In boiling and steaming paper-stock material, it is usual to place the material in a boiler tightly closed, and the boiler is hung on bearings and revolved, to keep the mass in motion. Steam is admitted by pipes leading to the inside of the boiler, for the purpose of mixing up and agitating the material as well as boiling and steaming. It is necessary that the material should be uniformly and thoroughly steamed or boiled, to render it in proper condition for making paper-pulp.

The object of my invention is to accomplish the purposes above named in a more uniform and thorough manner, and with a great saving of time over the means heretofore employed.

I employ a boiler mounted on axles in suitable bearings and with the steam-supply pipe passing through the center of one or both of the axles and into the end of the boiler. Two distributing steam-pipes pass from the end of the supply steam-pipe and extend lengthwise of the boiler, near the sides thereof, and at opposite sides, so that as the boiler turns the distributing-pipes turn with it, and one or the other of them is in the material at all times. A cut-off is placed at the end of the steam-supply pipe, and the motion of the boiler is availed of to permit the steam to enter the distributing-pipe that is submerged in the material and cut it off from the other distributing-pipe.

In the drawing, Figure 1 is a vertical section of one end of a rotary boiler with my improvement attached. Fig. 2 is a cross-section through the end of the steam-supply pipe and valve.

Similar letters of reference indicate corresponding parts.

*a* is the shell of the boiler, and *b* the head. *c* is the axle on which the boiler revolves, and this axle *c* is shown as made in one piece with the head *b*. *d* is the steam-supply pipe, pass-

ing through the hollow axle *c*, and there is a stuffing-box, *e*, at the end of the axle *c*, through which the pipe *d* passes. The pipe *d* enters a short distance into the boiler, and terminates within the steam-cylinder *f*, which is bolted fast to the head *b* of the boiler.

*g g'* are the steam-distributing pipes, which are bolted to the shell *a* of the boiler, at opposite sides, and are connected with the steam-cylinder *f*. The pipes *g g'* extend the whole length of the boiler, and are provided with perforations *h h*, to admit steam to the boiler, and at the ends of these pipes *g g'* there are cone plugs *i* that enable the distributing-pipes to be blown out, to clear them of fine pieces of stock.

*k* is a cut-off, formed as a small cylinder, with an opening at *l*. This cut-off is screwed fast upon the end of the steam-pipe *d*, and is contained within the steam-cylinder *f*.

The operation is as follows: The paper-stock or other material is placed within the boiler, through a man-hole or in any other manner, and the boiler closed. The boiler is then revolved by the usual means, and steam is admitted to the supply-pipe *d* and passes into the cylinder *f*. The boiler, in its revolution, carries with it the distributing-pipes *g g'*, and the steam-cylinder *f* turns upon the cut-off *k*, bringing the ends of the pipes *g g'* alternately opposite the opening *l* in the cut-off *k*, thus gradually cutting off the steam from one distributing-pipe and admitting it gradually to the other. The opening *l* is upon the under side, so that the steam is always passing into the pipe that is in the liquor or material contained within the boiler.

If there was but one distributing-pipe, the steam would be blown into space whenever, by the revolution of the boiler, that pipe was out of the material, and there would be a waste of time and steam.

The pipes *g g'* act as agitators, stirring and lifting the material and allowing the steam to permeate the whole mass.

There may be a steam-supply pipe at each end of the boiler, with a cut-off and distributing pipes, as described, in which case the pipes *g g'* need not extend the whole length of the boiler.

I do not limit myself to the precise construction of the parts as herein set forth, as they may be varied without departing from my invention. The form of cut-off may be changed, and other devices substituted to accomplish the same object.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The distributing-pipes  $g g'$ , in combination with the supply-pipe  $d$  and a cut-off, substantially as and for the purposes set forth.

2. The steam-supply pipe  $d$ , passing through

the hollow axle of the boiler, the steam-cylinder  $f$ , revolving with the boiler and carrying the distributing-pipes  $g g'$ , and a cut-off to admit steam to the distributing-pipes alternately, combined and arranged substantially as set forth.

3. The cone plugs  $i$  at the ends of the distributing steam-pipes, for the purposes set forth.

JOHN THORPE.

Witnesses:

GEO. W. LEWTHWAITE,  
JOHN WAGMAN.