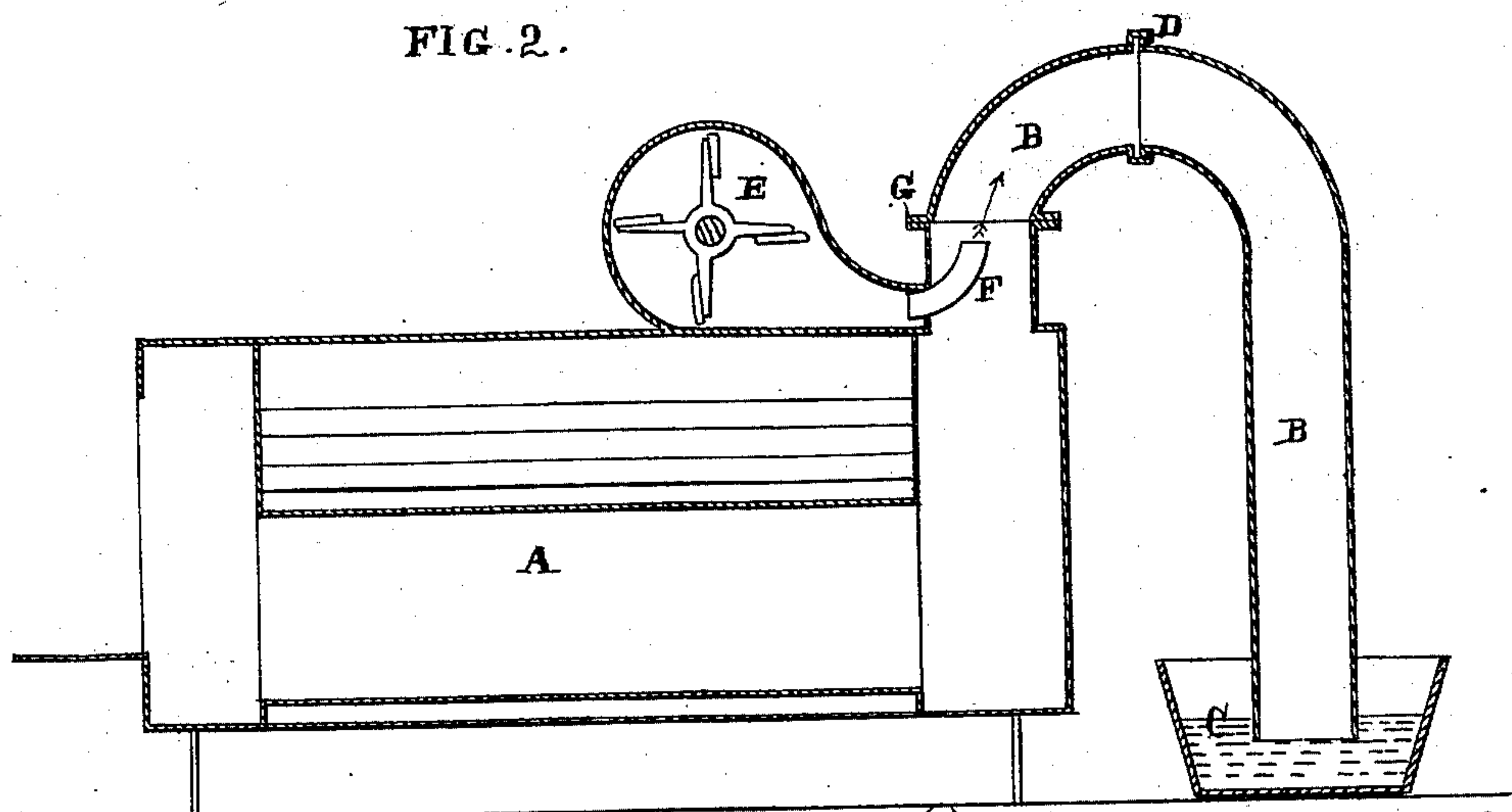
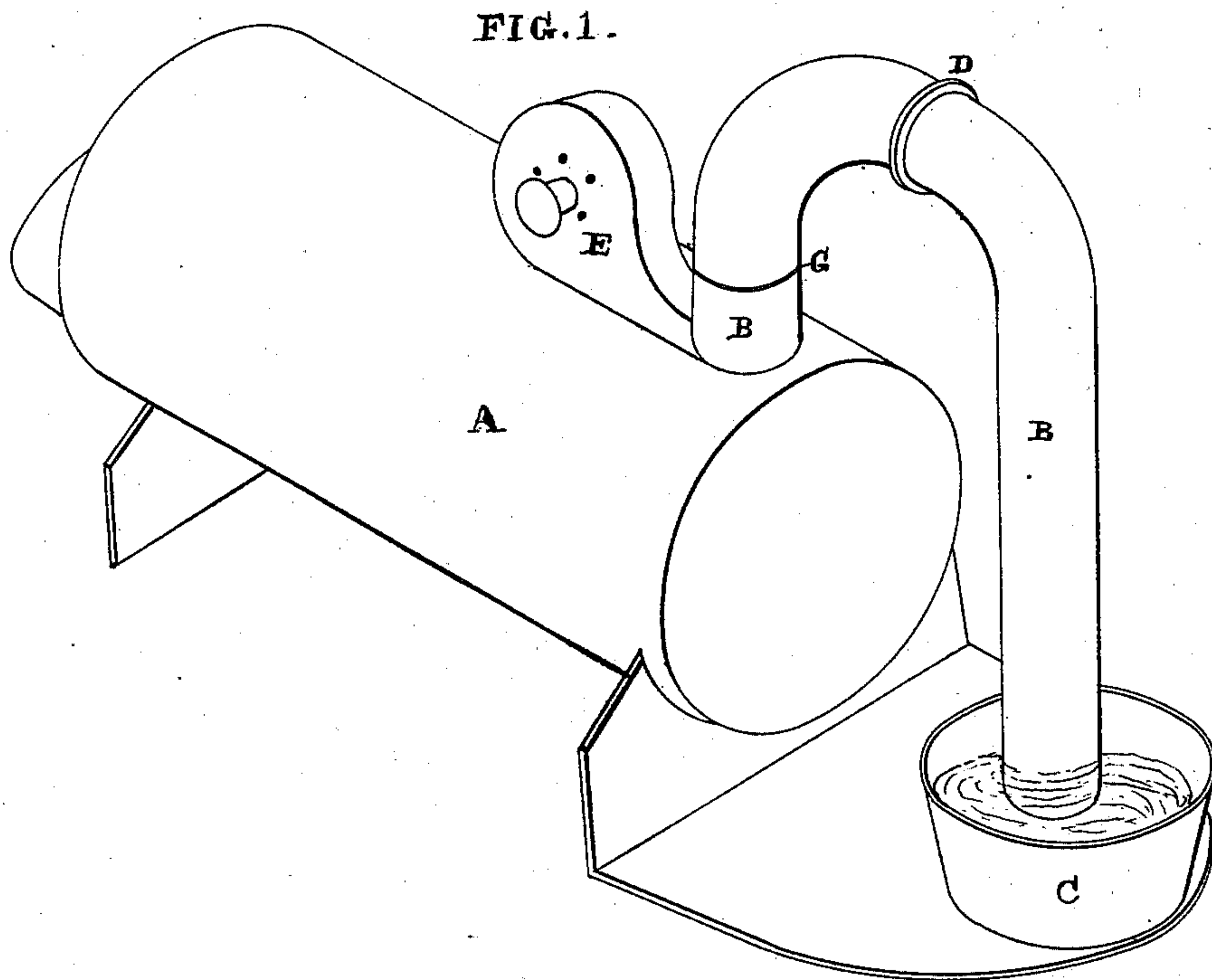


J. W. PEARCE.  
Spark-Controlling Stack for Boilers.  
No. 223,605.      Patented Jan. 13, 1880.



Witnesses

*Geo. H. Strong.*  
*Frank A. Proak*

Inventor

*John W. Pearce*  
*By Dewey & Co.*



# UNITED STATES PATENT OFFICE.

JOHN W. PEARCE, OF SUISUN, CALIFORNIA.

## SPARK-CONTROLLING STACK FOR BOILERS.

SPECIFICATION forming part of Letters Patent No. 223,605, dated January 13, 1880.

Application filed April 21, 1879.

*To all whom it may concern :*

Be it known that I, JOHN W. PEARCE, of Suisun, county of Solano, and State of California, have invented a Spark-Controlling Stack for Boilers; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in apparatus for controlling or extinguishing the sparks which are ejected from the stack or escape-pipe of engine furnaces and boilers; and it consists of a novel combination of a curved pipe leading from the smoke-box into a receptacle containing water, and in the combination, with this pipe, of a fan-blower which discharges its blast into the stack to assist the draft.

The stack is constructed with a swivel-joint, which allows it to be turned to one side or upward, so as to provide a clear draft when the boiler is cold and on first starting a fire.

The water-receptacle may have a direction-flue extending upward, to assist in discharging the smoke, as will be more fully described by referring to the accompanying drawings, in which—

Figure 1 is a view of my apparatus and boiler. Fig. 2 is a longitudinal section through the pipe and blower.

A is the boiler of an engine to which my apparatus is to be connected. It may be used with any class of boiler, but it is more especially valuable in connection with straw-burning or field engines and those using light fuel, which is likely to cause fire in the harvest-fields or in other places where they may be employed.

B is the stack of my engine, and I curve or arch it so that its outer end will open downward toward the ground or base upon which the boiler stands, as shown. C is a tank of any suitable shape or construction, holding water, and it is placed below the end of the stack B at a sufficient distance to receive and quench all the sparks without choking or clogging the draft. This tank may have a netting placed over its top to arrest any sparks which might not be quenched, but it will

probably not be needed. It may be found advisable to extend a bonnet or hood upward from this tank in some cases, so as to give direction to the smoke and steam, and prevent it from being spread about so low as to cause annoyance to those about the engine.

The pipe or stack has a swivel-joint, D, formed in the center of the curve, so that the lower part may be turned upward when a fire is to be started, and sufficient draft for that purpose thus obtained, after which it may be turned down.

The draft is ordinarily kept up by means of a rotary fan or blower, E, which is placed upon the top of the boiler, or in any other suitable place, and a pipe, F, from it conveys the blast to the stack, as shown.

A horizontal joint at G enables me to shift this stack to the rear or to either side of the boiler, as convenience may require, and by the use of the water-tank and fan all sparks are quenched and kept low down, where they can be easily controlled without destroying or impairing the draft.

I am aware that swivel or rotating joints have been used in tubes and pipes for the purpose of giving a varying direction to the fluid passing through them, and therefore do not claim such broadly; but,

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

In a straw-burning furnace, A, the curved smoke pipe or stack B, said pipe having the swivel-joints at D and G, arranged as shown, whereby the discharge end of the pipe or stack may be directed downward, upward, or to either side, in combination with the fan E and nozzle F, by which the draft is increased and the sparks and burning cinders are forced into the water-vessel C, substantially as shown and described.

In witness whereof I have hereunto set my hand.

JOHN W. PEARCE.

Witnesses:

GEO. H. STRONG,  
FRANK A. BROOKS.