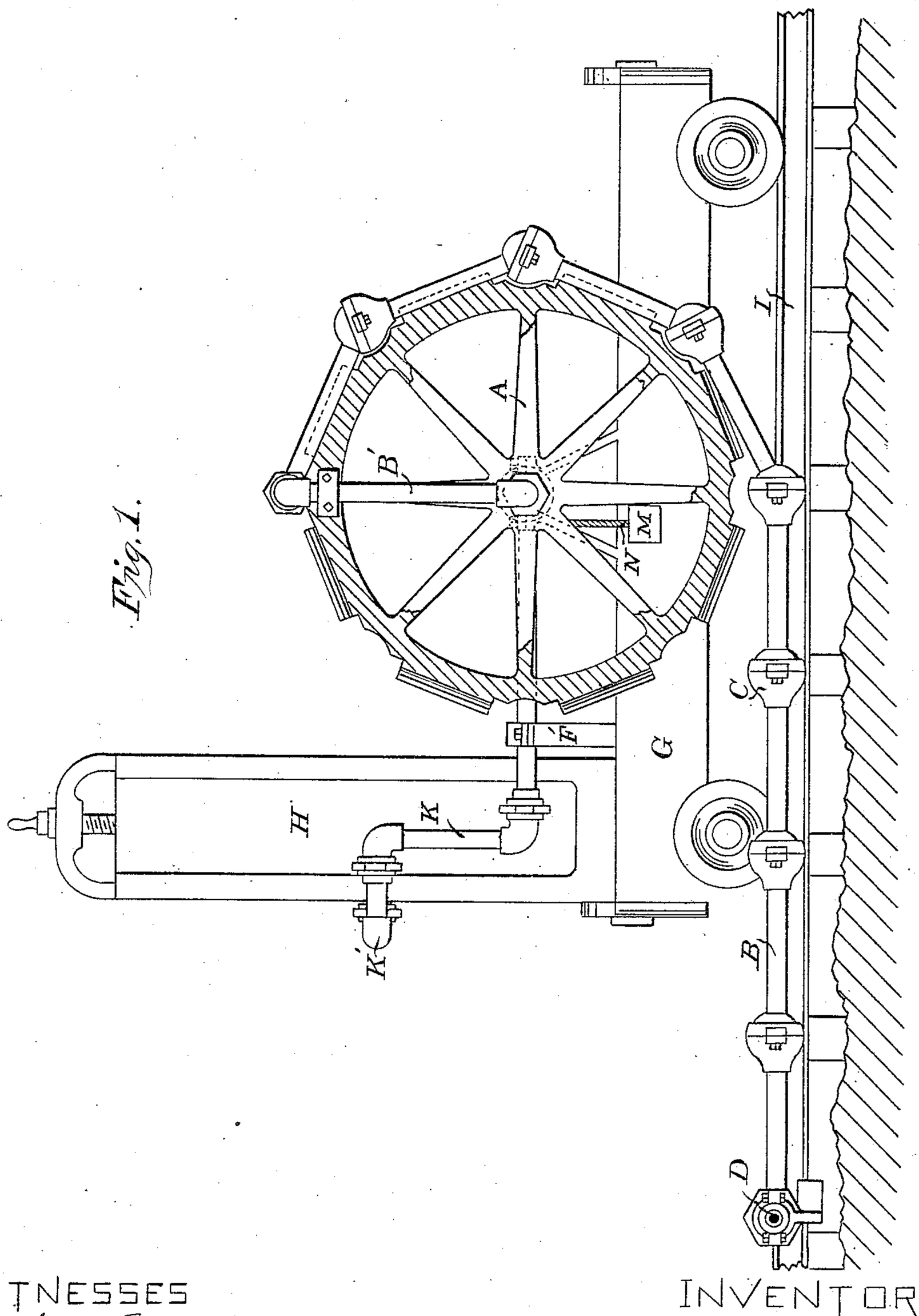
(No Model.) 2 Sheets—Sheet 1.

A. BALL.

CONVEYING STEAM.

No. 444,549. Patented Jan. 13, 1891.

Fig. 1.



WITNESSES
Arthur F. Middleton
Isadore Middleton

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ATTORNEY

(No Model.) 2 Sheets—Sheet 2.

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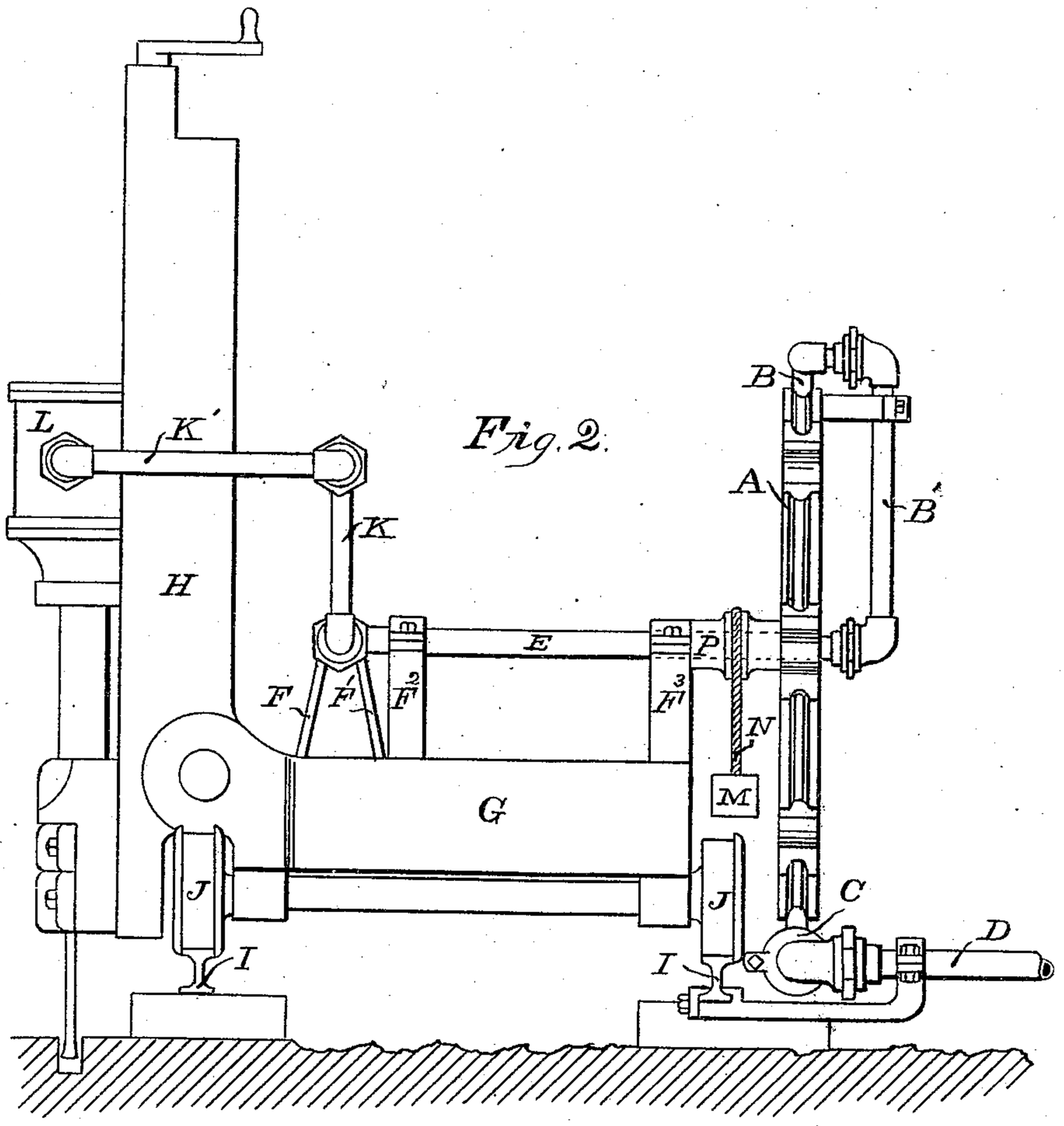
Fig. 2.



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UNITED STATES PATENT OFFICE.

ALBERT BALL, OF CLAREMONT, NEW HAMPSHIRE, ASSIGNOR TO THE SULLIVAN MACHINE COMPANY, OF SAME PLACE.

CONVEYING STEAM.

SPECIFICATION forming part of Letters Patent No. 444,549, dated January 13, 1891.

Application filed September 19, 1889. Serial No. 324,393. (No model.)

To all whom it may concern:

Be it known that I, ALBERT BALL, a citizen of the United States, residing at Claremont, in the county of Sullivan and State of New Hampshire, have invented certain new and useful Improvements in Conveying Steam, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

The principal novelties of the invention consist in mounting a reel upon the gang-drill rock-channeling machine, and upon which the different sections of the flexible jointed pipe will be automatically wound and unwound as the machine approaches and recedes from the main steam-conducting pipe, all as I will now describe.

For a better comprehension of my invention attention is invited to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of my invention, partly in section; and Fig. 2 an end elevation of the same, also partly in section.

In both of the views corresponding parts of the device are represented by identical letters of reference.

G represents the base of one of my improved rock-channeling machines, such as I have described in several Letters Patent granted to me, and which is mounted upon wheels J, traveling on the tracks I I. At one side of this machine is pivoted a standard H, which carries the operating-engine L, so that the frame can be swung laterally on its pivot and thereby change the plane of movement of the drills. I do not limit myself, of course, to this gang-drill rock-channeling machine, as my invention is applicable to any of the other channeling-machines now on the market.

Upon the main frame of the machine, and securely fastened upon two standards F^2 F^3, I mount a conducting-pipe E, which extends some distance to one side of the machine. Upon that portion of this conducting-pipe outside of the standard F^3 is placed a sleeve P of the reel A. In order that this reel may be as light as possible it is made with spokes, as I have shown. This reel is provided with a grooved periphery for the reception of the sections of the conducting-pipe B, and is further provided with recesses for the reception of the enlarged flexible joint C of each section of the pipe. The particular construction of these swivel-joints C is immaterial to the main spirit of my invention, and can be of any of the well-known forms.

One end of the jointed pipe B is connected with a main supply-pipe D by means of a swivel-joint and which leads to the boiler. This pipe D is rigidly held to the track I by means of a support fixed to the track in such a way as to be easily moved when desired, so that the relative position of the supply-pipe D with relation to the track I can be changed at pleasure. The other end of the jointed pipe B is connected by means of a swivel-joint to a connecting-pipe B′, which is in turn connected to an axial pipe E by means of a swivel-joint, and which is supported on the reel by means of a bracket, as shown. The other end of this pipe E is rigidly connected to a right-angle pipe, which is firmly held upon supports F F′.

In the arrangement of the rock-channeling machine I have shown in the drawings this right-angled pipe is swivelly connected to a short connecting-pipe K, which is in turn connected to another pipe K′ leading to the engine. It will be understood, however, that the arrangement of the conducting-pipes leading from the axial pipe E to the engine is varied according to the construction of the rock-channeling machine that is to be used, and if the machine is incapable of adjusting the plane of the gang-drills it will be evident that there will be no necessity of swiveling these connecting-pipes. In order that there may be always a strain between the reel and the jointed pipe B, I provide the reel with some means for automatically winding the pipe B thereon as the machine is brought near the main conducting-pipe B. This may be either a coiled spring, or it may be a weight such as I have shown at M M.

The operation of the machine is as follows: Steam passes along the main conducting-pipe G, through the flexible jointed pipe B, through the connecting-pipe B′, thence through the axial pipe E, and finally through the right-

angle pipe and connecting-pipes K K to the engine, which it operates. As the machine is moved away from the main conducting-pipe D, the flexible pipe B is unwound from the reel A, which rotates with it, and this causes the weight M to be elevated, so that as the movement of the machine is reversed the reel is caused to turn by means of this weight, and the flexible pipe will be wound up thereon, all as will be evident to any one skilled in the art to which my invention relates. As the machine approaches the pipe D, and when the reel is directly over the said pipe, the flexible pipe B will be entirely wound on the reel. Then as the machine moves past the main conducting-pipe D the reel is unwound and the weight M is elevated. In this way it will be seen that the flexible pipe B will be wound and unwound on the reel with the movements of the machine entirely automatically.

It will be evident that rubber hose can be substituted in place of the swivel-jointed pipe, if desired.

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

1. The combination of a gang-drill rock-channeling machine having an engine thereon, a boiler adjacent to but independent of said channeling-machine, a reel on said channeling-machine and having suitable notches in its periphery, and a metallic swiveled pipe leading from said boiler and wound around said reel, so that the enlarged joints of said pipe will fit normally in said notches, substantially as herein set forth.

2. The combination of a reel A, axial pipe E, connected with the engine, metallic swivel-pipe B, connected with the boiler, a radial pipe B′, connecting the metallic swivel-pipe and the axial pipe, substantially as set forth.

3. The combination of the main conducting-pipe D, metallic swivel-pipe B, radial pipe B′, axial pipe E, right-angle pipe and connections with the engine, reel A, over which the metallic swivel-pipe passes, and a weight M, secured to said reel for reversing the same, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ALBERT BALL.

Witnesses:

GEO. O. BALL,

ARTHUR I. GOODELL.