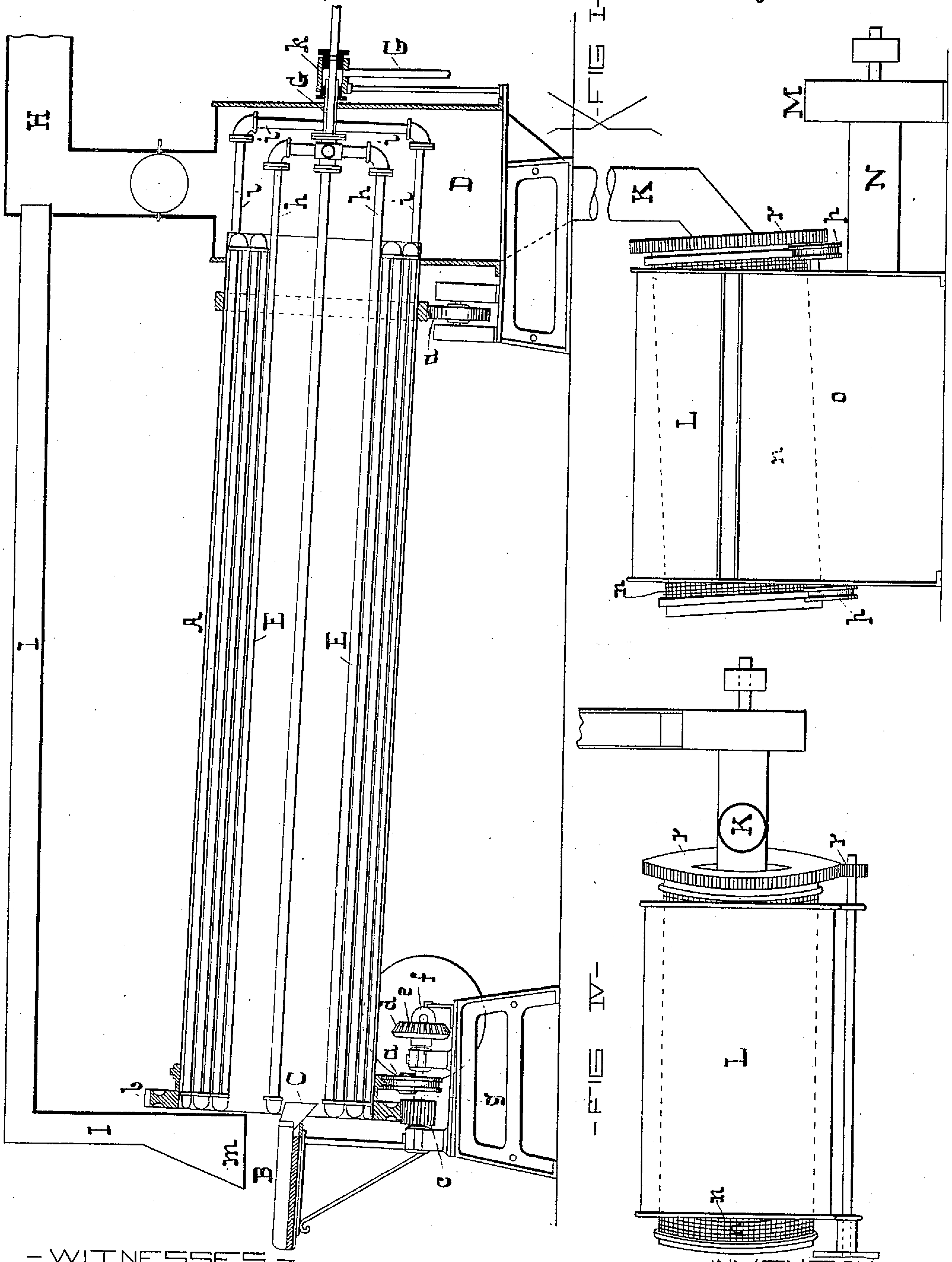
(No Model.)

2 Sheets—Sheet 1.

J. B. ADT.

TOBACCO DRIER.

No. 323,251. Patented July 28, 1885.



WITNESSES

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(No Model.)

2 Sheets—Sheet 2.

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FIG II

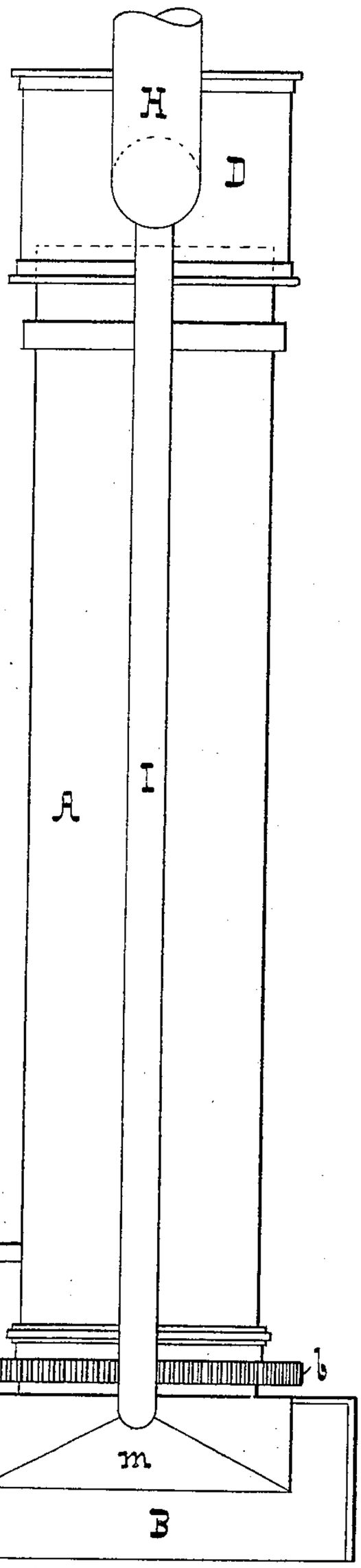
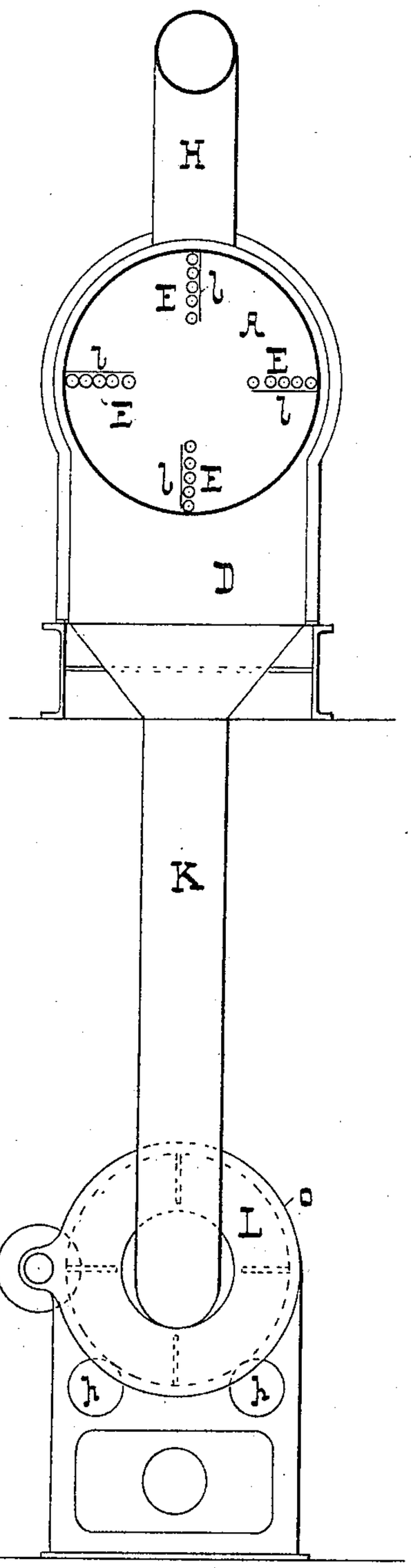


FIG III



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UNITED STATES PATENT OFFICE.

JOHN B. ADT, OF BALTIMORE, MARYLAND.

TOBACCO-DRIER.

SPECIFICATION forming part of Letters Patent No. 323,251, dated July 28, 1835.

Application filed February 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. ADT, of the city of Baltimore and State of Maryland, have invented certain Improvements in Drying and Cooling Apparatus for Tobacco and other Materials, of which the following is a specification.

This invention consists in certain details of construction of the apparatus, as will hereinafter appear.

In the accompanying drawings, forming a part hereof, Figure I is a longitudinal view, partly in section, of the apparatus. Fig. II is a top view of the apparatus. Fig. III is an end view of the invention. Fig. IV is a plan of a part of the apparatus.

A is a revoluble cylinder supported in an inclined position by means of rollers *a*. The cylinder A is driven by a circular rack, *b*, secured to its upper end, and a pinion, *c*, which receives its movement from a cone-pulley, *d*, through the medium of the gears *e* and *f*, and a shaft, *g*, the last-named being shown only in Fig. I and by dotted lines.

The materials to be dried and cooled are placed on a table, B, and fed to the upper end of the cylinder A through a chute, C, and they are discharged from the lower end of the cylinder to a box, D, into which the cylinder projects. (See Fig. I.)

E E are gangs of steam-pipe in four or more sections, fastened in the cylinder A so as to form paddles. Steam enters the gangs of pipe E through a central pipe, F, and its branches *h*, and escapes through an exhaust-pipe, G, having branches *i*. A suitable stuffing-box, *k*, is provided where the steam and exhaust pipes are connected together and with the box D. Each gang of pipe E has a sheet-iron plate, *l*, to prevent materials passing between or wrapping around the pipes forming the gangs, as seen in Fig. III.

H is a flue extending from the upper part of the box D to a chimney, which is not shown, to carry off moisture from the cylinder, and a branch flue, I, having a funnel mouth-piece, *m*, at the feeding end of the cylinder A and directly over the table B, serves to conduct moisture from the upper end of the said cylinder to the flue H.

K is a pipe leading from the bottom of the box D to a cooler, L. The cooler L consists of a revoluble cylindrical sieve, *n*, supported on rollers *p* within an imperforate casing, *o*, and driven by gearing *r*. The dried material falls from the box D to the interior of the cylindrical sieve *n* of the cooler L, and in passing through the said sieve the dust is drawn from the casing by means of an exhaust-fan, M, and a pipe, N.

It will be understood that air to supply the fan M enters the lower end of the sieve *n*, and in passing through the tobacco therein cools it. By inclining the drier as explained, and arranging both the supply and exhaust at the lower end of the gang of steam-pipes, the steam ascends along the pipe, and in condensing readily runs downward to the discharge. Moreover, the particular construction of discharge and supply enables tight steam-joints to be secured at one end of the structure without regard to the other end.

By referring to Fig. I it will be seen that the branches of the pipes *h* and *i* are in the box D, and they consequently do not interfere with the free movement of the materials in passing from the upper to the lower end of the cylinder A.

Supposing the cylinder A and the sieve *n* to be in revolution and steam passing through the gangs of pipe in the cylinder, the material to be dried and cooled is placed on the table B and fed to the cylinder through the chute C. In passing through the cylinder the material is thoroughly dried, the moisture being carried off through the flues H and I, and it is finally cooled in the cooler L, from which it is discharged to any suitable receptacle.

I am aware that previous to my invention it has been proposed to employ a stationary drying-cylinder having the steam-pipes or stirrers therein revoluble, and that the cylinders have been rotated with the steam-pipes. My invention, however, will be readily distinguished from such constructions in that I arrange my coils or gangs of steam-pipes stationary with respect to the cylinder, which is revolved relatively thereto, thereby securing the opposing or agitating action on the part of the said pipes, while the revolution of the cylinder maintains the entire mass of material in an

agitated condition to thoroughly dry the same, while any tendency thereof to adhere to the interior face of the cylinder is prevented.

I claim as my invention—

1. The combination, in a drying apparatus, of an inclined revoluble cylinder, the box located at one end and stationary relative to said cylinder, a gang of steam-pipes extending into said cylinder and having their supply and exhaust located at one end, substantially as described.

2. The combination, in a drying apparatus, of an inclined revoluble cylinder, the box located at one end, stationary relative to said cylinder, a gang of steam-pipes extending into said cylinder and having both their supply and exhaust located at their lower end, and the flues to carry off the moisture from said cylinder, substantially as set forth.

3. The combination, in a drying apparatus, of an inclined revoluble cylinder, the box located at one end and stationary relative to said cylinder, a gang of steam-pipes extending into said cylinder and having both their supply and exhaust located at their lower end, and the plates stationary relative to the cylinder and located adjacent relative to the steam-pipes to serve as paddles, substantially as set forth.

JOHN B. ADT.

Witnesses:
CHAS. B. CASSADY,
DANL. FISHER.