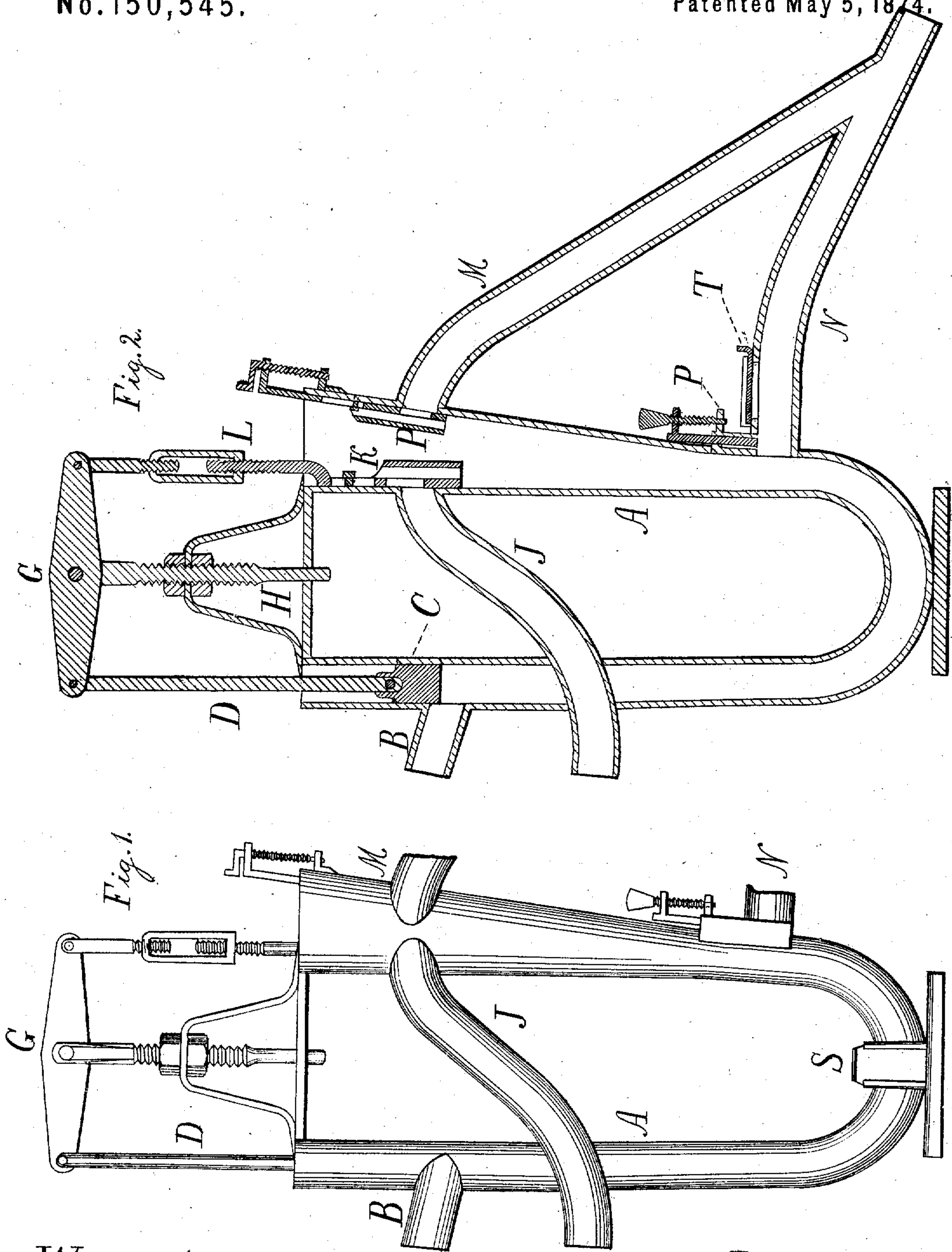


L. A. DUCKETT.

Stuff-Regulators for Paper-Machines.

No. 150,545.

Patented May 5, 1874.



Witnesses:
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN STUFF-REGULATORS FOR PAPER-MACHINES.

Specification forming part of Letters Patent No. **150,515**, dated May 5, 1874; application filed February 24, 1874.

To all whom it may concern :

Be it known that I, LOUIS A. DUCKETT, of Cheney's Station, in the county of Delaware and the State of Pennsylvania, have invented a new and useful Improvement in Stuff-Regulators for Paper-Machines; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to fully understand, make, and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the device embodying my invention. Fig. 2 is a central vertical section thereof.

Similar letters of reference indicate corresponding parts in the two figures.

It is important in paper-making that the pulp is fed uniformly to the machine, in order to produce uniformity in the paper.

My invention relates to means for accomplishing such results; and consists in a bent tube, one portion of which receives the pulp and contains a float, and the other portion communicates with the machine and with an overflow-tube leading to the place of supply, or reservoir, whereby, through the medium of the float, a single gate of the overflow-tube regulates the feed to the machine. It also consists in making the float and overflow-gate adjustable relatively to each other.

Referring to the drawings, A represents a tube, which is somewhat of a U or V shape, open at its two ends, preferably constructed of metal, and properly supported so as to stand upright with the open ends above. B represents the feed-pipe, which opens into the tube A near one of its upper ends, and communicates with the pump of the chest or place of supply of the pulp. In the limb of the tube, above the point of junction of the pipe B, there is located a float, C, to which is jointed a rod, D, connected to one end of a rocking or walking beam, G, whose axis is on an adjustable standard or upright, H, which is suitably supported on the tube A, or frame-work properly located. J represents an overflow-pipe, which opens into the other limb or end of the tube A, opposite to that to which the feed-pipe is secured, and leads back to the pump or place of supply. K represents a gate or valve ar-

ranged within the tube A, so as to cover and uncover the passage or opening between the tube and overflow. An adjustable connecting-rod, L, is jointed to the rocking-beam G and the valve K, and it is evident that the rising and falling motions of the float will impart motions in reverse order to the gate K, so as to open and close the same. The adjustable standard and adjustable rod L permit the proper regulation of the gate K, relatively to the predetermined amount of pulp that is to be fed to the paper-making machinery. M represents a pipe which leads from near the upper end of the tube A, at the part to which the overflow-pipe is secured, and a similar pipe, N, is secured to the tube below the pipe M, the two pipes communicating with each other, and leading to the paper-making machinery. The openings between the pipes M N and the tube A will be covered and uncovered by gates P P, which are to be adjusted relatively to the amount of pulp that is to flow from the tube to the place of usage.

The operation is as follows: The various gates being properly adjusted, the pump is set in motion. The pulp is directed through the pipe B to the tube A, flows down the adjacent side thereof, and then up the other side, thus filling the tube. The escape of the pulp from the tube A is by means of the pipes M N.

As long as there is uniformity in the flow from the pump, the float remains passive; but as soon as the flow increases, then the increased volume bearing against the under side of the float causes the latter to rise, whereby the gate K is lowered, and more of its opening uncovered, so that the overflow is greater, the surplus returning by means of the overflow-pipe to the chest or reservoir, where the pump is fed. This prevents an increased pressure or flow of the pulp in its passage to the paper-making machinery. When the flow from the pulp decreases, the float falls and the gate K rises, thus bringing some or all of the closed part of the gate over the opening of the overflow, whereby the overflow of the pulp is checked without causing any check in the flow of the pulp to the machinery. Thus, in the flow of the pulp to the machinery, there is a uniformity which will be maintained at all times, regardless of any variation in the flow

from the pump, or irregularity in the consistency of the pulp.

For heavy and coarse pulp the upper pipe will be employed, in order that the pulp may have more "head," and thus flow freely, the foreign matters that exist therein being permitted to descend to the bottom or bend of the tube. For fine pulp the lower pipe N will be employed, since its tendency is to flow freely and thus pass out quickly.

S represents a gate at the bend of the tube, whereby access may be had to the interior of the bend for the removal of any matters that may collect, clog, or interrupt the free passage of the pulp. A gate, T, will be arranged near the joint of the pipe N with the tube A, for removal of matters that may gather at said point.

The several parts of the regulator may be

made of metal, and thus possess strength and simplicity.

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

1. The two-limb or bent tube A, the float C, the feed-pipe B, and the rocking beam G, in combination with the overflow-pipe J and its single valve or gate K, and with the discharge-pipe, substantially as and for the purpose set forth.

2. The combination, with the tube A, float C, rocking-beam G, and gate or valve K, of the adjustable standard H, and adjustable connection I, substantially as and for the purpose set forth.

Witnesses: LOUIS A. DUCKETT.

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