M. H. CORNELL.
Paper-Machine.

No. 196,634 Patented Oct. 30, 1877.

Fig. 1.

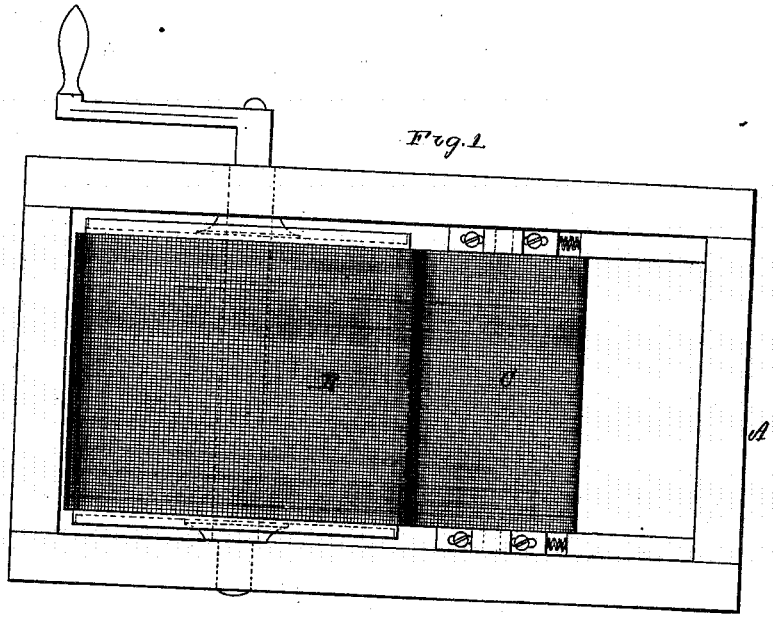
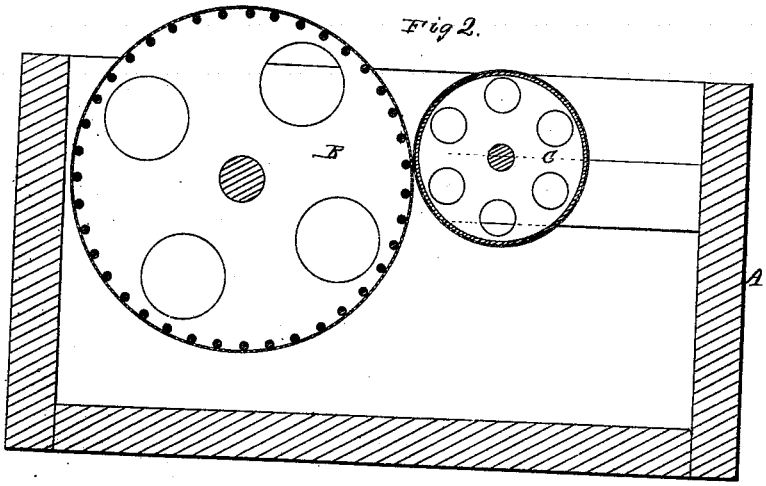


Fig 2.



Witnesses.
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UNITED STATES PATENT OFFICE.

MARK H. CORNELL, OF BRIDGEWATER, MASSACHUSETTS.

IMPROVEMENT IN PAPER-MACHINES.

Specification forming part of Letters Patent No. **196,634**, dated October 30, 1877; application filed February 27, 1877.

To all whom it may concern:

Be it known that I, MARK H. CORNELL, of Bridgewater, of the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Machinery for the Manufacture of Paper; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a top view, and Fig. 2 a section, of the main cylinder and vat of a paper-making machine with my improvement applied thereto.

Owing to the velocity with which the main cylinder of a paper engine or machine revolves in the pulpy liquid of its vat, or to other causes, the pulp accumulated on the cylinder is liable, at the point of being driven from or leaving the water, to be thrown off or separate from the cylinder.

To prevent this is the object of my invention, in the carrying out of which I combine, with the vat A and main cylinder B thereof, a smaller or proper sized cylinder, C, so applied to the vat as to be free to revolve with the main cylinder.

The cylinder C is to have its axis arranged at or about at the level at which the water is to stand in the vat, and, furthermore, such cylinder C is to have its periphery arranged a distance from that of the main cylinder equal to or about equal to the thickness of the mass of pulp taken up or to be taken up by the latter. To this end the auxiliary cylinder may have its journals arranged in adjustable bearings provided with means of moving them and fixing them in position, as circumstances may require.

The cylinder C, I usually make very like the main cylinder—that is, with a foraminous or woven-wire periphery—and open within such, to admit of water readily passing through such periphery, all being substantially as shown. The cylinder, however, may have a solid or unperforated periphery, or one without holes or passages through it, in which case the water will not pass through it, but such cylinder will operate to advantage, though not so well as if made with a foraminous or woven-wire periphery, and hollow, as set forth, for in this latter case it will allow of the escape through it of water from the pulp, while the latter may be rising out of the water of the vat.

The cylinder C revolving freely with the main cylinder, and arranged so that its line of nearest approach thereto shall be at or about at, or a little below, the surface of water in the vat, will counteract the tendency of the pulp in rising out of the water to separate from the main cylinder.

I do not claim a non-foraminous endless apron and its supporting-rolls arranged with and applied to the pulp-vat and cylinder of a paper-making machine in manner and for the purpose as set forth in the United States Patent No. 45,149.

When such an endless apron is so used, there is no chance for the escape of the water through it, and, besides, it takes up a large amount of water with the pulp, which has either to be forced through the latter, or collect in the space between the cylinder and the upper half of the upper roll of the apron, and from thence flow or escape back over such roll, to the detriment of the pulp in the cylinder. With the single roll C, when unperforated or not foraminous, much less water is raised with the pulp than would be by an endless apron, and consequently less would have to be forced through the pulp; but when the cylinder is foraminous, the water has a chance to escape without being forced through the pulp to drive it into the meshes of the main cylinder.

What, therefore, I claim as my invention, in a machine for making paper, is—

1. The combination of the foraminous cylinder C with the pulp-vat A and the main pulp-receiving cylinder B of a paper-making engine or machine, such cylinder C being arranged in such vat, and with respect to the cylinder B, and to revolve freely therewith, all substantially as, and for the purpose, and to operate as explained.

2. In a machine for making paper, the combination of a single cylinder, C, having a solid or non-foraminous periphery, with the pulp-vat A and the main foraminous pulp-receiving cylinder B of a paper-making machine, such cylinder C being arranged in said vat, and with the said cylinder B, in manner and to operate therewith as set forth.

MARK H. CORNELL.

Witnesses:
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J. R. SNOW.