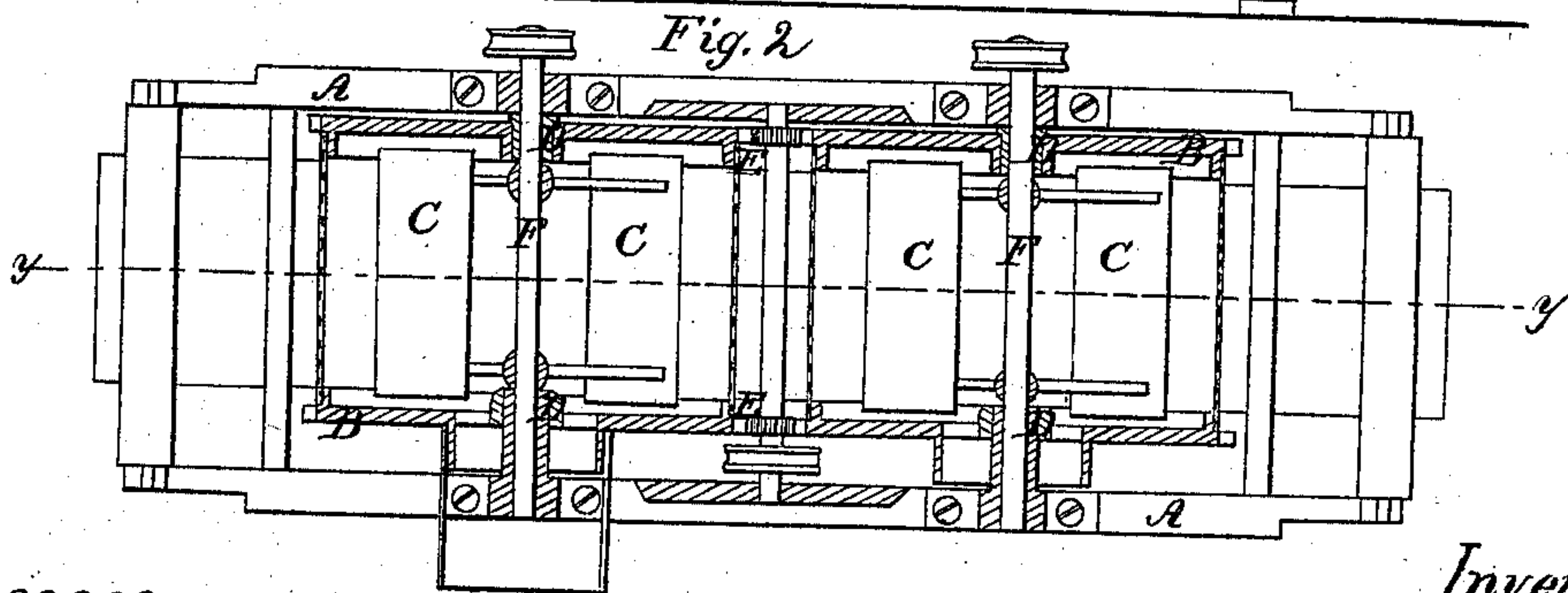
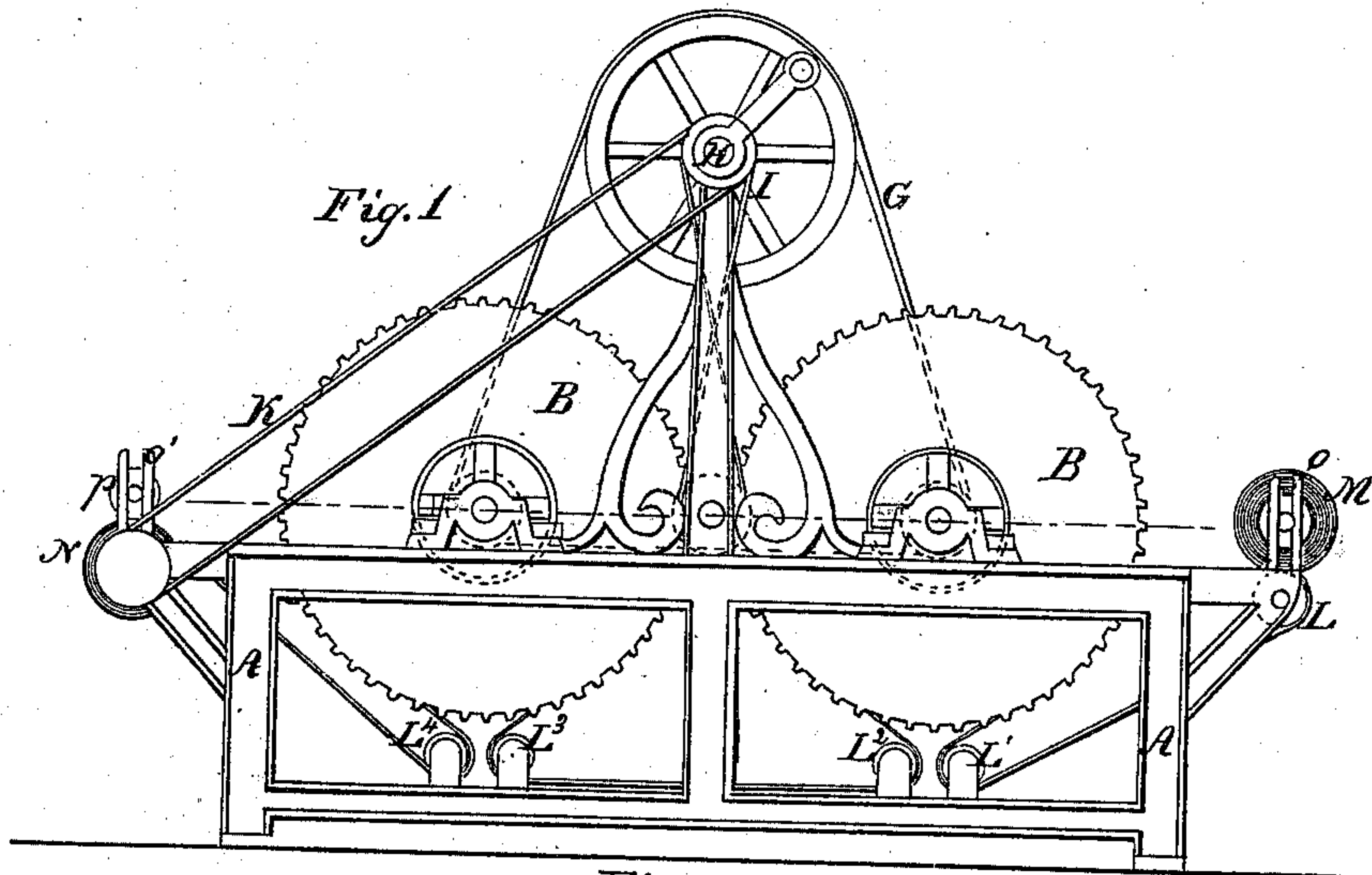
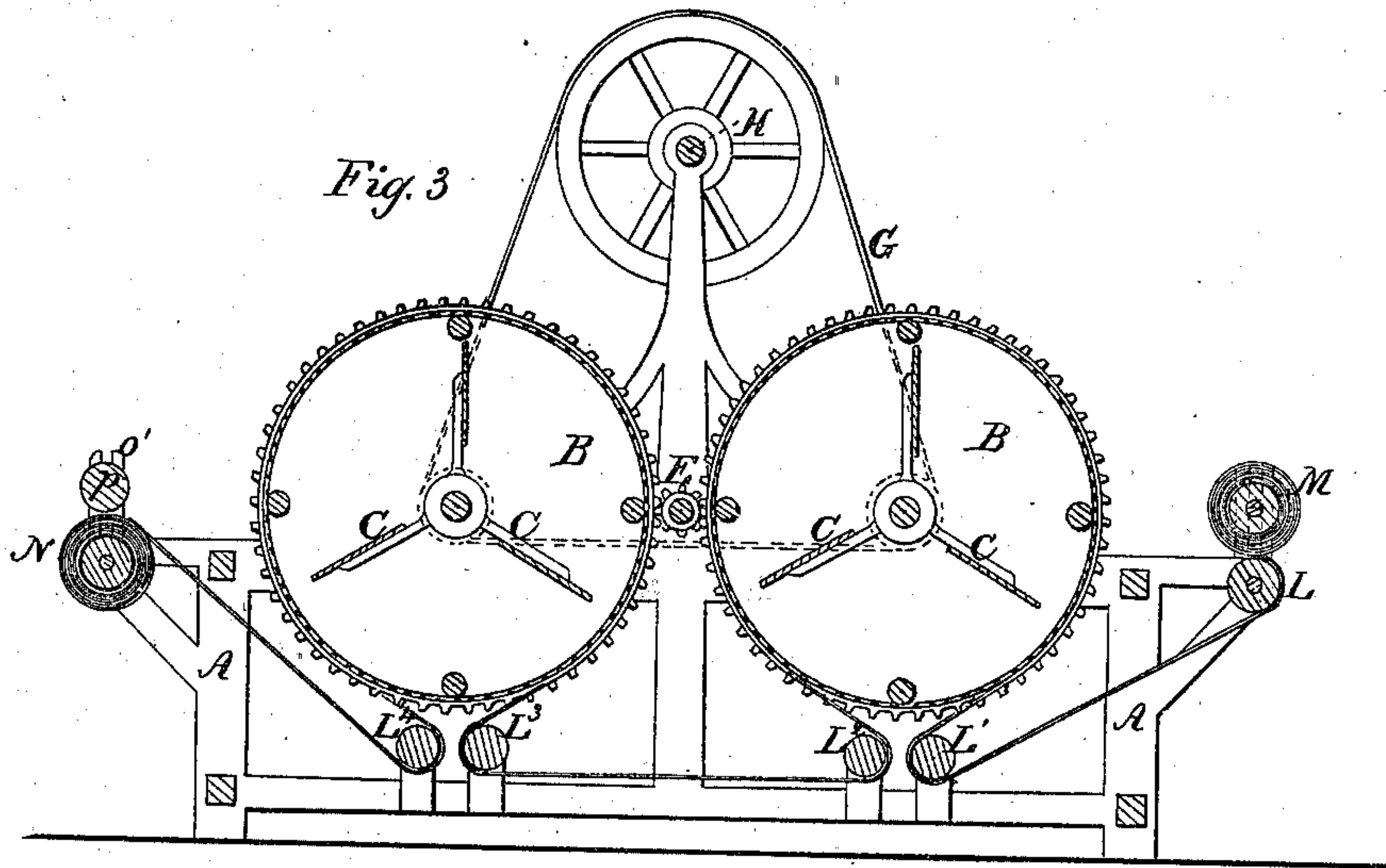


A. Chambers.

Cloth Drying Apparatus.

N^o 83,690.

Patented Nov. 3, 1868.



Witnesses.
W. L. Ashkett
per A. Morgan

Inventor.
A. Chambers
per Munn & Co.
attorneys

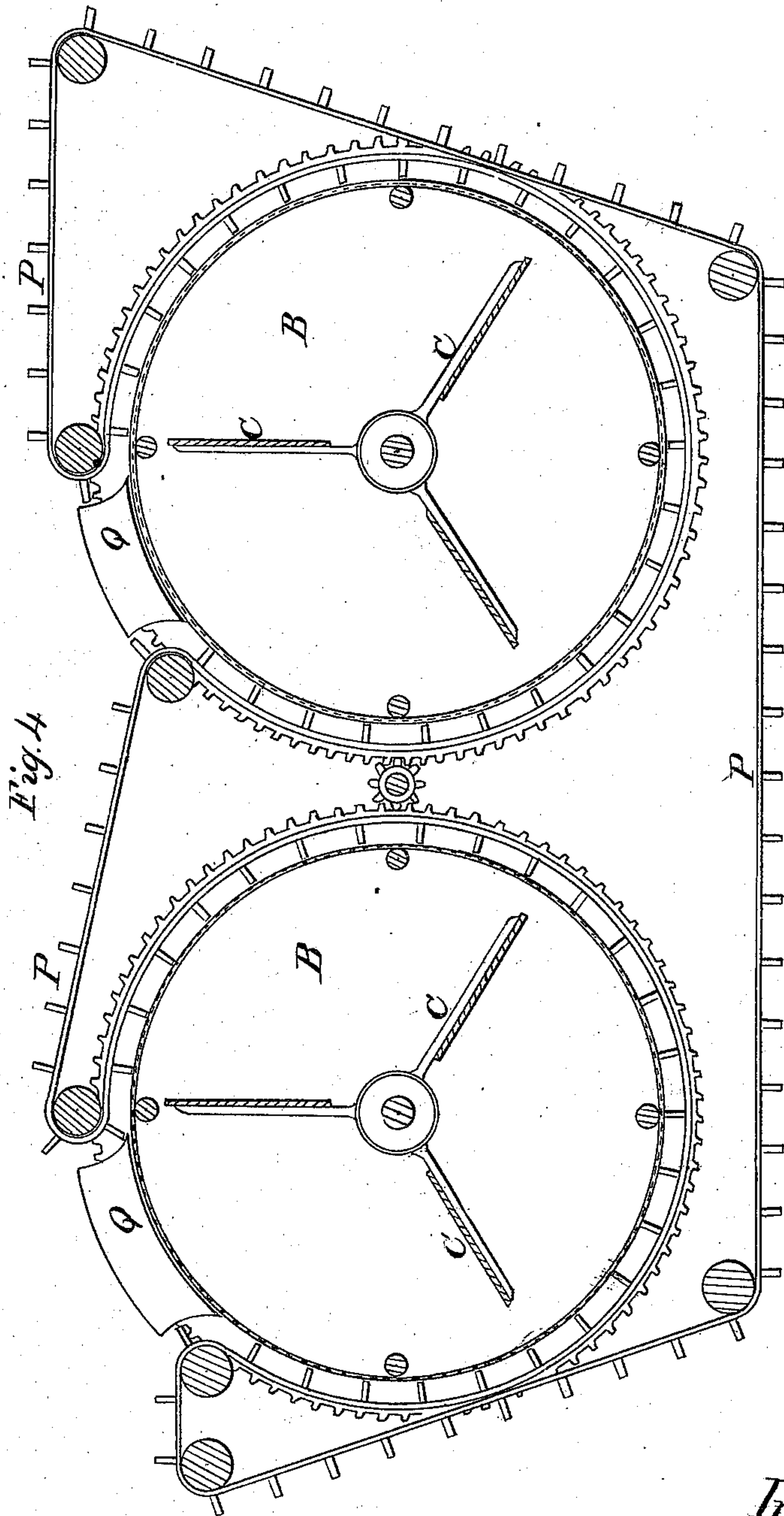
Sheet 2-2 Sheets.

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J. A. Morgan

Inventor.
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per Munnell
attorneys

UNITED STATES PATENT OFFICE.

ANDREW CHAMBERS, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN MACHINES FOR DRYING CLOTH.

Specification forming part of Letters Patent No. 83,690, dated November 3, 1868.

To all whom it may concern:

Be it known that I, ANDREW CHAMBERS, of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Drying Apparatus for Cloth and other Substances; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The nature of my invention relates to that class of machinery for drying cloth and other substances when air, either hot or cold, is used as the drying medium, and when the article to be dried is conveyed past a blast of air which is blown against the same during its passage from the point of its ingress to the machine, in a wet condition, to the point of egress in a dried condition; and it consists in a series of two or more cylinders, parallel to each other, on a suitable frame, having for their covering wire-cloth or other similar material, and a series of guiding-rollers for conveying the article to be dried around the same, while a series of rotating fans within the said cylinders is made to force a continuous blast of air outwardly through the meshes of the said covering material, and also through the article being conveyed around the same, as will be more clearly described by reference to the drawings, in which—

Figure 1 represents a side elevation. Fig. 2 represents a horizontal section on the line *x x*, Fig. 1. Fig. 3 represents a vertical longitudinal section on the line *y y* of Fig. 2. Fig. 4 represents a modification of my invention, showing its application to drying wool.

Similar letters refer to like parts in all the figures.

A represents the frame upon which the several parts of the machine are mounted. B represents the drying-cylinders, being so constructed as to have a bearing at each end on an extension of the journal-boxes, as shown at D, on which they may have a slow rotary motion independently of the axles of the fan-blowers C. They are connected together by pinions E, working into external gearing on each of the cylinder-heads, and are provided

with central openings in one end for the admission of air. The cylindrical portion of the same is composed, preferably, of wire-cloth, or it may be of perforated sheet-iron or other similar material. Within the said cylinders are arranged the fan-blowers C upon the axles F, to which motion may be communicated by a belt, G, from a pulley on a driving-shaft, H. Motion is communicated to the cylinders by means of a belt, I, also working from a pulley on the driving-shaft H.

L L' L² L³ L⁴ represent a series of guiding-rollers, arranged in the proper position relatively to the cylinders to give such direction to the web or fabric to be dried as will bring it into contact with the cylinders for the greatest length of time during its passage through the machine, as is plainly shown in Figs. 1 and 3.

When a woven fabric is to be dried it is wound on a cylinder and placed in the vertically-slotted bearings *o*. One end is then passed under the guide-roller L, thence under guide-roller L' and around the cylinder above it to guide-roller L², and thence around the other guide-rollers and cylinders in the same manner to the take-up roller N, onto which it is wound under a presser-roller, *p*. The said take-up roller is operated, and the proper tension is maintained on the fabric, by the belt K, working from a pulley on the driving-shaft H to a pulley on the roller N. Motion being now communicated to the cylinders and the fans by power applied to the driving-shaft, the fabric will be drawn off the roll M, through the machine, and onto the take-up roller, while at the same time blasts of air, either hot or cold, will be blown against and through the fabric as it passes along, by which operations the drying is effected.

In Fig. 4 I have represented a modification of my invention, showing its adaptation to drying cotton-wool. P represents an endless belt or apron, provided with cross-pieces of wood or other suitable material, and arranged at suitable distances apart to control the wool and distribute it properly over the surface of the drying-cylinders as it is carried around the same between their outer surface and the side of the belt, as is plainly shown in the drawings, motion being communicated to the apron by

frictional contact with the cylinders. Q represents guards arranged over that portion of the cylinders with which the substance to be dried cannot be brought by the belt, to prevent the escape of air in that direction, where it would have no effect on the wool. These guards are also curved in those portions contiguous to the buckets or cross-pieces on the belt, so as to help keep the wool on the belt while it is moving over the short and abruptly-curved path due to the small diameter of the guiding-rollers.

What I claim, and desire to secure by Letters Patent, is—

The arrangement of the perforated cylinders B B, geared as described, independent fans C C, guide-rollers L L¹ L² L³ L⁴, feed and take-up rolls M N, presser-roll O', shaft H, and belts G I K, all operating as described, for the purpose specified.

ANDREW CHAMBERS.

Witnesses:

JAMES BARBOUR,
JOHN HEATHCOTE.