

**No. 629,696.**

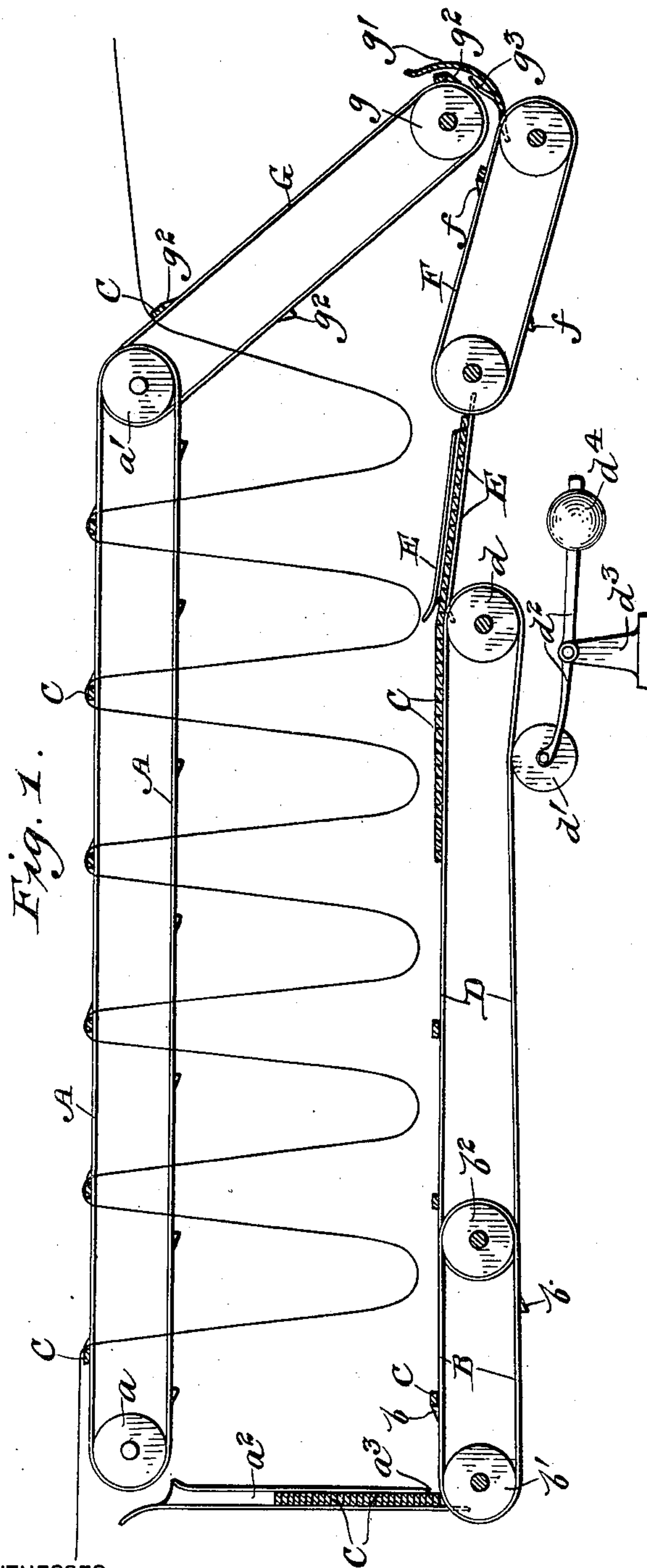
**Patented July 25, 1899.**

**S. R. LIBERTY.**

## LATH CARRYING DEVICE FOR PAPER DRYING MACHINES.

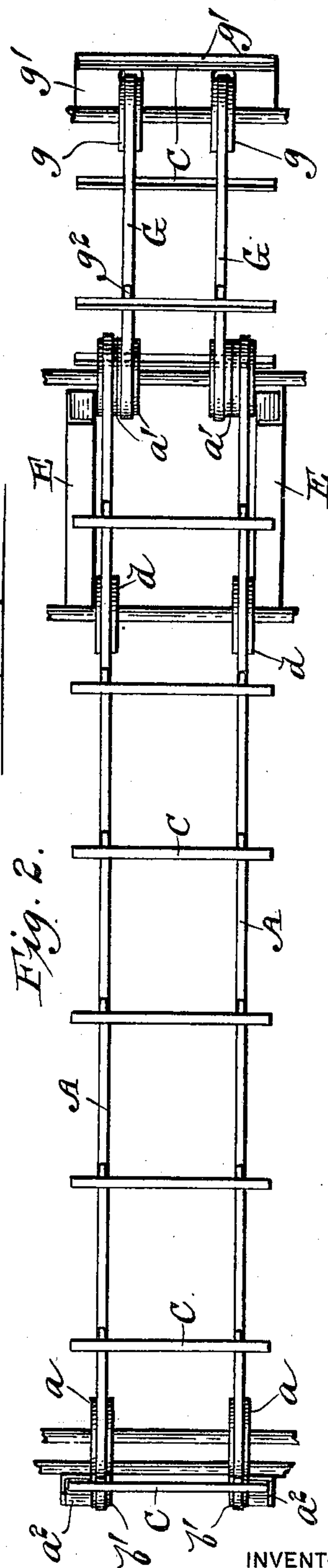
(Application filed June 23, 1898.)

(No Model.)



WITNESSES

Severance  
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INVENTOR

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Mason Emrick Hancock



# UNITED STATES PATENT OFFICE.

SAUL R. LIBERTY, OF NASHUA, NEW HAMPSHIRE.

## LATH-CARRYING DEVICE FOR PAPER-DRYING MACHINES.

SPECIFICATION forming part of Letters Patent No. 629,696, dated July 25, 1899.

Application filed June 23, 1898. Serial No. 684,248. (No model.)

*To all whom it may concern:*

Be it known that I, SAUL R. LIBERTY, a citizen of the United States, residing at Nashua, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Lath-Carrying Devices for Paper-Drying Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in machines for feeding laths for drying paper; and it consists in providing carrying-belts having projections for feeding the laths forward and two or more accumulating-supports for feeding the laths to said carrying-belts.

It also consists in providing a lath-carrying device with belts having feeding projections formed thereon, lath-accumulating hoppers for holding and feeding out the laths, and a smooth belt for assisting in accumulating the laths in one of the said hoppers.

It also consists in certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a central longitudinal section through a lath-carrying device constructed in accordance with my invention, and Fig. 2 represents a top plan view of the same.

Lath-carrying devices have been used heretofore which are adapted to feed laths forward for supporting paper which has been colored or provided with some ornamental configuration. Such machines, however, should be provided with means for feeding more than one style of lath to the paper and should be also provided with means for accumulating the laths at different points for this purpose. With these points in view I have designed my present invention, in which I employ main drying-belts, as A, mounted side by side upon suitable pulleys or rollers, as  $a$   $a'$ . The belts A are preferably two in number, so as to support the laths at each end thereof. One end of the belts A is located near the top of a chute or hopper, as  $a^2$ , into which the paper-supporting slats from the belts A will be dropped after they have traveled the full

length of the said belts. This chute or hopper extends downwardly from the rollers or pulleys  $a$  toward another pair of belts, as B. The belts B are horizontally arranged at the foot of the hopper  $a^2$  and are provided with lugs or projections  $b$ . The chute or hopper  $a^2$  is so constructed that the slats may be removed one at a time from the bottom thereof in one direction. To effect this purpose, one side of the hopper is cut away, as at  $a^3$ , so as to leave a space between it and the belts B a little greater than the thickness or width of a slat. As the slats C accumulate in the hopper  $a^2$  they pile up one upon the other, and upon giving motion to the belts B the lugs  $b$  will engage the lowest slat in the hopper and move it out from beneath the rest, carrying it forward toward the other end of the machine. The belts B are mounted upon pulleys or rollers, as  $b'$   $b^2$ . Adjacent to the belts B another pair of belts D are mounted, one end of the said belts being also supported and operated by means of the pulleys or rollers  $b^2$ , the other end of the said belts being supported by pulleys or rollers  $d$ . The belts D are preferably made without any engaging projections or lugs, so that the slats which rest upon them are adapted to be moved forward by their frictional contact with the said belts only. At one end of the belts D is arranged a stationary support, as at E, which leads to a pair of belts, as F, which are slightly inclined and are provided with feeding-lugs, as  $f$ . The support B allows the slats to be fed forward toward the belts F, and the lower end of the said support is constructed like the lower end of the hopper  $a^2$ . When the belt F travels upon its supporting-rollers, its lugs  $f$  will engage one slat at a time and carry it forward in the machine. Interposed between one end of the pair of belts F and the pair of belts A are a pair of inclined lifting-belts G, mounted upon the rollers or pulleys  $a'$  and  $g$ . A curved guide, as at  $g'$ , is mounted at the lower ends of the belts G and extends toward the belts F in such a manner that it will receive the slats from the said belts. The belts G are also provided with lugs, as  $g^2$ , so that when the said belts are actuated the lugs will engage the slats C, which are fed upon the guide  $g'$  by means of the belts F, and will hoist or lift them to the belts A. It is pref-



erable to keep the belts D quite taut, and for this purpose I employ one or more rollers, as  $d'$ , which are carried by one end of a lever, as  $d^2$ . The said lever is preferably fulcrumed  
 5 upon any suitable standard, as at  $d^3$ , and carries at its lower end a weight, as  $d^4$ . It will be readily seen that the tendency of the weight  $d^4$  is to lift the rollers  $d'$  against the belts D, and thus hold the belts practically  
 10 taut. This causes the upper sides of the belts to be kept nearly in a straight line at all times.

From the above description it will be seen that the slats as they are fed to the belts A  
 15 are adapted to receive the festoons of paper from the coloring-machine and to support the same in loops to give them an opportunity to dry. The belts A are preferably made of great length, generally about two hundred  
 20 feet. When the slats reach the ends of the belts A, they will drop from the end of the paper into a collecting-hopper  $a^2$ , the paper being removed by any suitable mechanism from that end of the machine. When it is desired  
 25 to feed the slats to the belts A from the support or hopper E, the belts F are set in motion and carry the slats from the said supports E forward to the guide  $g'$ . Thence they are raised to the belts A by means of the  
 30 belts G. When it is desired to feed the slats from the hopper  $a^2$ , the belts B and D are set in motion, by which means the slats are removed one by one from the hopper  $a^2$  and fed forward upon the support E. Thence they  
 35 may be removed by the belts F and G, as just described.

The belts may be all moved by the same mechanism, so as to work simultaneously, or they may be operated by separate and inde-  
 40 pendent means, if desired, so that any one of them may be stopped, if required. The guide  $g'$  may be provided with one or more springs, as  $g^3$ , for causing the slats to be engaged more perfectly by the lugs of the belts G, and thus  
 45 insure their being fed forward at the proper time.

One of the important features of my invention consists in the providing of two or more  
 50 hoppers or collectors for holding the slats, as sometimes it is desirable to feed different kinds of slats for different kinds of paper. For this purpose different kinds of slats may

be accumulated at E from those accumulated at  $a^2$ . The smooth belts D also form an important feature of my invention, as they as-  
 55 sist in feeding the slats forward upon the support E by frictional contact with the said slats, and not being provided with lugs will be capable of moving forward after the slats are held stationary by being brought against  
 60 those in front of them.

As the belts are long, I propose to use any suitable or convenient device for keeping them straight as to their working surfaces. The transfer of the slats from the lower belt  
 65 to the lifting-belt also forms a novel feature of my invention and produces a simpler and less costly way of accomplishing this result than has heretofore been in use.

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

1. In a lath-carrying device for paper-drying machines, the combination with paper-supporting belts, and a hopper for accumu-  
 75 lating laths for supporting the paper, of belts having lugs for removing the laths from said hopper, smooth belts for accumulating the laths, and supplying the laths from the second  
 80 hopper, springs mounted in the said guides preventing the return of the laths and insuring their contact with the lugs of lifting-belts, belts having lugs for transferring the laths to the said guide, and belts having lugs for lift-  
 85 ing the laths to the paper-supporting belts, substantially as described.

2. In a lath-carrying device for paper-drying machines, the combination with belts hav-  
 90 ing lugs for feeding paper-supporting slats or laths forward, hoppers for feeding the said laths, a guide interposed between two of the said belts for directing the slats from one to the other, and springs mounted in the said guides preventing the return of the slats and  
 95 insuring the proper contact of the lugs of the belts with the slats or laths, substantially as described.

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

SAUL R. LIBERTY.

Witnesses:

R. T. SMITH,  
 S. J. M. SMITH.