(No Model.) 2 Sheets—Sheet 1.

J. WALDRON.

HANGING UP AND CARRYING OFF MACHINE FOR WALL PAPER.

No. 322,871. Patented July 21, 1885.

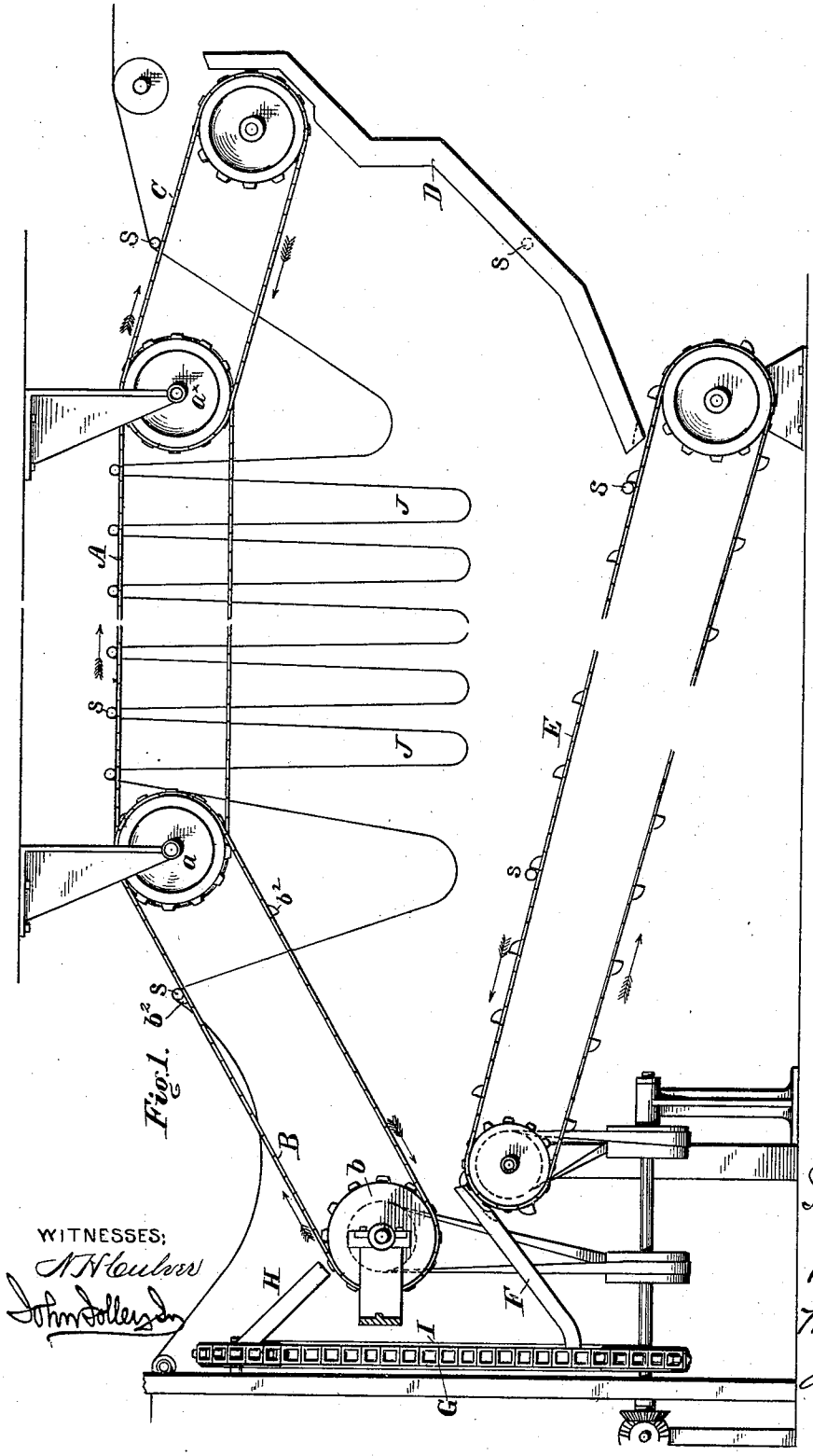


Fig. 1.

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(No Model.)

2 Sheets—Sheet 2.

J. WALDRON.

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Fig. 2.

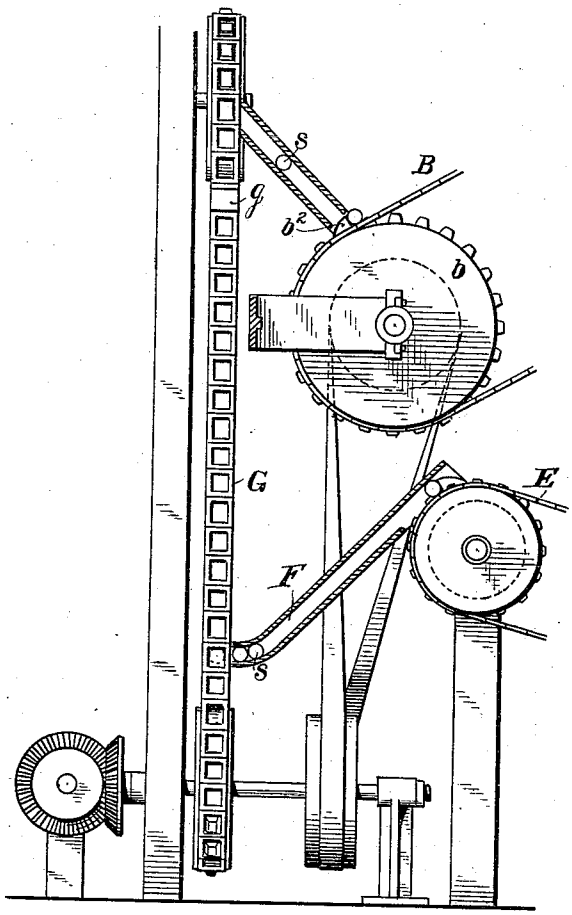


Fig. 4.

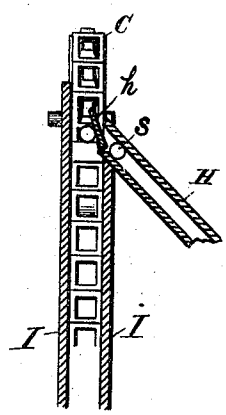


Fig. 5.

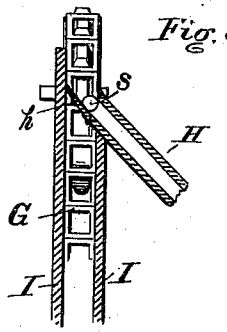
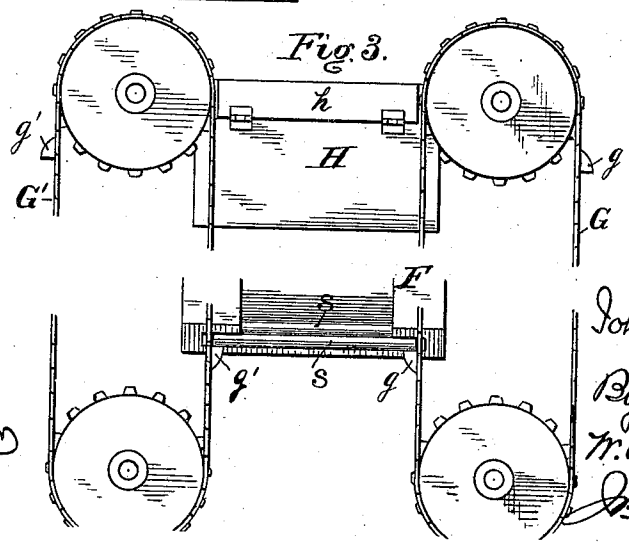


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN WALDRON, OF NEW BRUNSWICK, NEW JERSEY.

HANGING-UP AND CARRYING-OFF MACHINE FOR WALL-PAPER.

SPECIFICATION forming part of Letters Patent No. 322,871, dated July 21, 1885,

Application filed April 2, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN WALDRON, of New Brunswick, New Jersey, have invented an Improvement in Hanging-Up and Carrying-Off Machines for Wall-Paper Manufacturers' Use, of which the following is a specification.

The class of machinery to which my invention relates is employed for the drying of freshly grounded, sized, or printed paper or other fabric. The machines themselves consist of double lines of endless belts, ropes, or chains, (traveling over or by means of grooved pulleys, chain-wheels, or the like depending in suitable hangers from the ceiling of a drying-room,) which are so arranged as to receive slats or laths carrying festoons of the paper or other fabric to be dried, fed upon them by means of what are known as "lath-belts," which first carry the laths in succession under a continuous strip of paper as it emerges from the apparatus in which it has been treated, and then carry them up one by one with the festooned paper upon them and deposit them one by one upon the lines or belts, so that they are supported between the belts of the lines, and, themselves supporting and carrying the paper, are carried thereby.

The object of my invention is the provision of improved mechanism for automatically returning the laths or slats from the delivery to the receiving end of a hanging-up apparatus having straight and not returning lines.

To the above end my invention consists in an apparatus a preferred form of a convenient embodiment of which is represented in the accompanying drawings and described in this specification, the particular subject-matter claimed as novel being hereinafter definitely specified.

In the drawings, Figure 1 is a side elevational view of an apparatus conveniently embodying my improvements. Fig. 2 is an enlarged side view, partially sectional, of a convenient device for depositing the returned laths upon the breast of the lath or carrying-up belts. Fig. 3 is a rear elevational view of the said apparatus, the side guides of the lifting-belts being, for clearer illustration, omitted. Figs. 4 and 5 are fragmentary and partially sectional side elevational details representing the application of the side guides with respect to the lifting-belts and the operation of the hinged flap of the delivering-chute.

Similar letters of reference indicate corresponding parts.

In the drawings, A A′ are the lines or belts which carry the festoons hung upon the laths or slats *s*. In the form of apparatus shown the lines are endless sprocket-chains driven upon sprocket-wheels a $a^{\times}$. They may, however, be ropes, belts, or kindred carrying contrivances.

B B are the lath or carrying-up belts, upon which the laths are fed, and which serve to deliver the said laths upon the lines in the usual manner. They are mounted upon and driven by suitable chain-wheels, b $b^{\times}$, and are provided with the usual lugs, b^2 $b^{\frac{3}{4}}$, to engage the laths.

C C are what I term "carrying-off belts," suitably mounted and driven, upon the breast of which the laths which have been carried along the lines are deposited, and which conveniently serve to carry said laths to a returning-chute, D, which is preferably a floored case, a side elevation of which presents a zig-zag outline, and which is conveniently made in such form as to prevent the turning, twisting, or irregular movement of the laths in their gravitative descent through it.

E E′ are what I term "returning-belts" upon the breast of which the returning-chute delivers the laths one by one, and which serve to transport the laths back to a device for feeding them upon the lath or carrying-up belts. The carrying-up belts, the carrying-off belts, and the slat-returning belts are all, in the form represented, endless sprocket-chains, which are suitably mounted upon sprocket-wheels actuated by any convenient means to proper movement. They may, however, be ropes or belts or other kindred carrying media.

As a convenient means of feeding or supplying the laths returned by the returning-belts to the carrying-up belts, I provide a receiving-chute, F, into which the returning-belts deposit the laths one by one, and two vertical similarly-moving partly-incased endless lifting belts or chains, G G′, provided with lugs g g', which are so set and driven as to pick up the laths one by one upon their op-

posing lugs as the laths gravitate from the receiving-chute and carry them up to a delivering-chute, H, which discharges them upon the carrying-up belts.

The acting portions of the lifting-belts are incased or contained between flat boards or other side guides, I I, Figs. 4 and 5, which together serve to form a casing or box, so to speak, for the laths as the latter are discharged from the receiving-chute F upon the lugs of the lifting-belts, and which prevent the displacement of the laths from off the lugs as the lifting-chains operate to lift said laths.

The inner under face of the delivering-chute H is provided with a hinged flap, *h*, the ordinary set of which, as shown in Fig. 4, is such as to block the passage of a lath as the latter is lifted upon the lifting-chains, but which is deflected by the lath in the manner shown in said Fig. 4, and after the lath has passed falls or flies back to its normal position, so that when the lugs in the passage of the lifting-chains around their upper carrying-wheels simultaneously move off from the lath the latter falls upon the flap in the manner shown in Fig. 5, and is by the flap directed into the delivering-chute H.

In the drawings I have represented certain supporting and carrying wheels for mounting and actuating the various belts. I have not regarded it as essential to particularly describe the arrangement, mounting, and driving of these wheels, as their application is apparent upon the drawings, and as the means resorted to for housing them and for driving can, of course, be modified at the will of the mechanic constructing the apparatus.

The festoons of paper are designated by the letter J, and the slats or laths by the letter *s*.

The form of the returning-chute D may be varied, and it may simply be an inclined plane. I however prefer to make it of an irregular course—that is to say, with a floor composed of several variously-inclined planes, having, however, a common trend or direction. The form of the delivering-chute H and of the receiving-chute F may also be varied, and the lath-returning belts may, if desired, be arranged to deposit their slats direct upon the lugs of the lifting-belts or between the acting faces of said belts. I however prefer to employ a receiving-chute.

The delivery-chute may be modified in construction, and may simply be an inclined plane. I however prefer to construct it as shown in the drawings, and to provide it with the self-operating flap shown and described.

While I have described carrying-off belts in conjunction with the lines as a convenient means for depositing the laths which have been delivered by the lines upon the returning-chute, and have also described the returning-chute as the specific means for delivering the delivered laths upon the lath-returning belts, yet it is obvious that any other contrivance—such as a simple inclined plane to, or such an endless belt as would itself deposit directly upon, the lath-returning belts—would be a suitable substitute for the purpose.

It would also be quite possible to allow the laths to fall from the lines directly upon the lath-returning belts. I however prefer the arrangement which I have represented in the drawings and herein described.

It is proper to add that many mechanical modifications in the structure and arrangement of the various parts of my apparatus may be made without departing from the invention, the gist of which resides in the provision, in connection with the lines and the lath or carrying-up belts of an apparatus of the class herein described, of endless belts for automatically returning the laths or slats which have carried the festoons along the lines from the delivering end of the lines back to the carrying-up and feeding belts, and in the further provision of means for depositing the laths received from the lath-returning belts upon the carrying-up or lath-feeding belts.

In an application filed by me April 2, 1885, as Serial No. 160,979, I have represented the returning-chute, the receiving-chute the lifting-belts, and the delivery-chutes which are represented and in various combined relationships claimed herein. They, however, form no part of my other said invention, except as therein specified. It is also proper for me to state that I do not claim, broadly, the provision of a returning-belt for returning laths to an elevating contrivance, as I am not the first to invent such a belt; and, moreover, I do not claim dropping the laths upon such a returning-belt; but that which I do claim is the specific combinations of mechanisms hereinafter set forth in the following claims:

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

1. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel belts or equivalent carrying media forming lines, a returning-chute, lath-returning belts, and an elevating device for receiving the returned slats from the lath-returning belts and redepositing them upon the breast of the lath or carrying-up belts, substantially as described.

2. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel belts or equivalent carrying media forming lines, carrying-off belts, a returning-chute, and lath-returning belts for returning the delivered laths from the lines to the carrying-up belts, substantially as described.

3. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel belts or equivalent carrying media forming lines, a returning-chute,

lath-returning belts for returning the delivered slats from the lines to the carrying-up belts and lifting-belts, substantially as described.

4. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: carrying-up belts, two parallel belts or equivalent carrying media forming lines, carrying-off belts, a returning-chute, lath-returning belts for returning the delivered laths from the lines, a receiving-chute, lifting-belts, and a delivering-chute for delivering upon the lath-belts, substantially as described.

5. The combination, to form a lifting device for depositing returned laths upon the lath-belts of a hanging-up machine for drying wall-paper and other fabric in festoons, of the receiving-chute, the lifting-belts, and the delivering-chute, substantially as set forth.

6. In a machine of the class herein recited, the combination of the hinged gravitating flap with the delivering-chute and with the lifting-belts, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name this 30th day of March, 1885.

JN. WALDRON.

In presence of—
J. BONSALL TAYLOR,
WM. C. STRAWBRIDGE.