(No Model.)

2 Sheets—Sheet 1.

J. WALDRON.

HANGING UP AND CARRYING OFF MACHINE FOR WALL PAPER MANUFACTURERS' USE.

No. 322,765. Patented July 21, 1885.

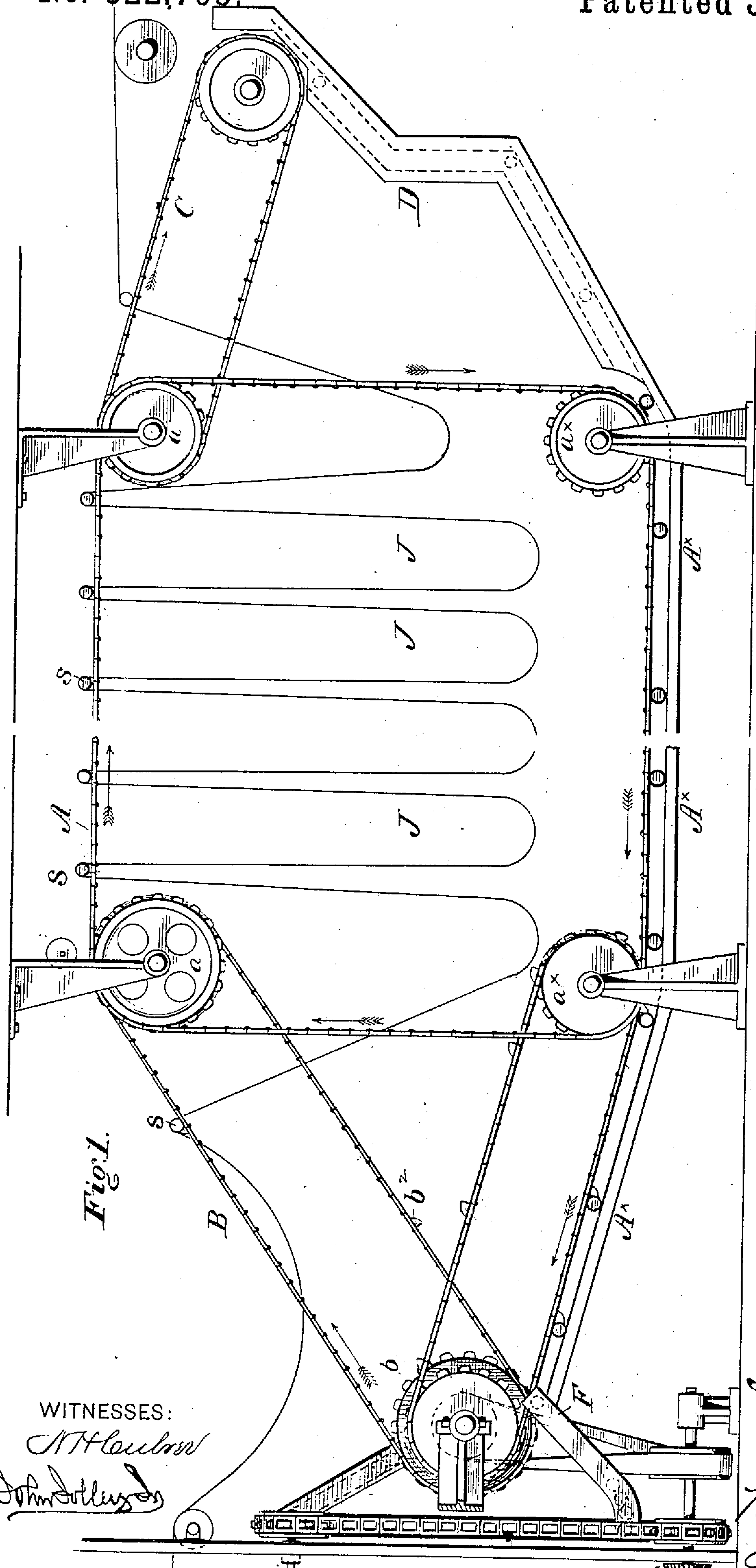


Fig. 1.

WITNESSES:

N H Coulson

John Dolley Jr.

John Waldron

INVENTOR

By his Attorneys

W. C. Strawbridge

J. Bonsall Taylor

N. PETERS, Photo-Lithographer, Washington, D. C.

J. WALDRON.

HANGING UP AND CARRYING OFF MACHINE FOR WALL PAPER MANUFACTURERS' USE.

No. 322,765. Patented July 21, 1885.

Fig. 2.

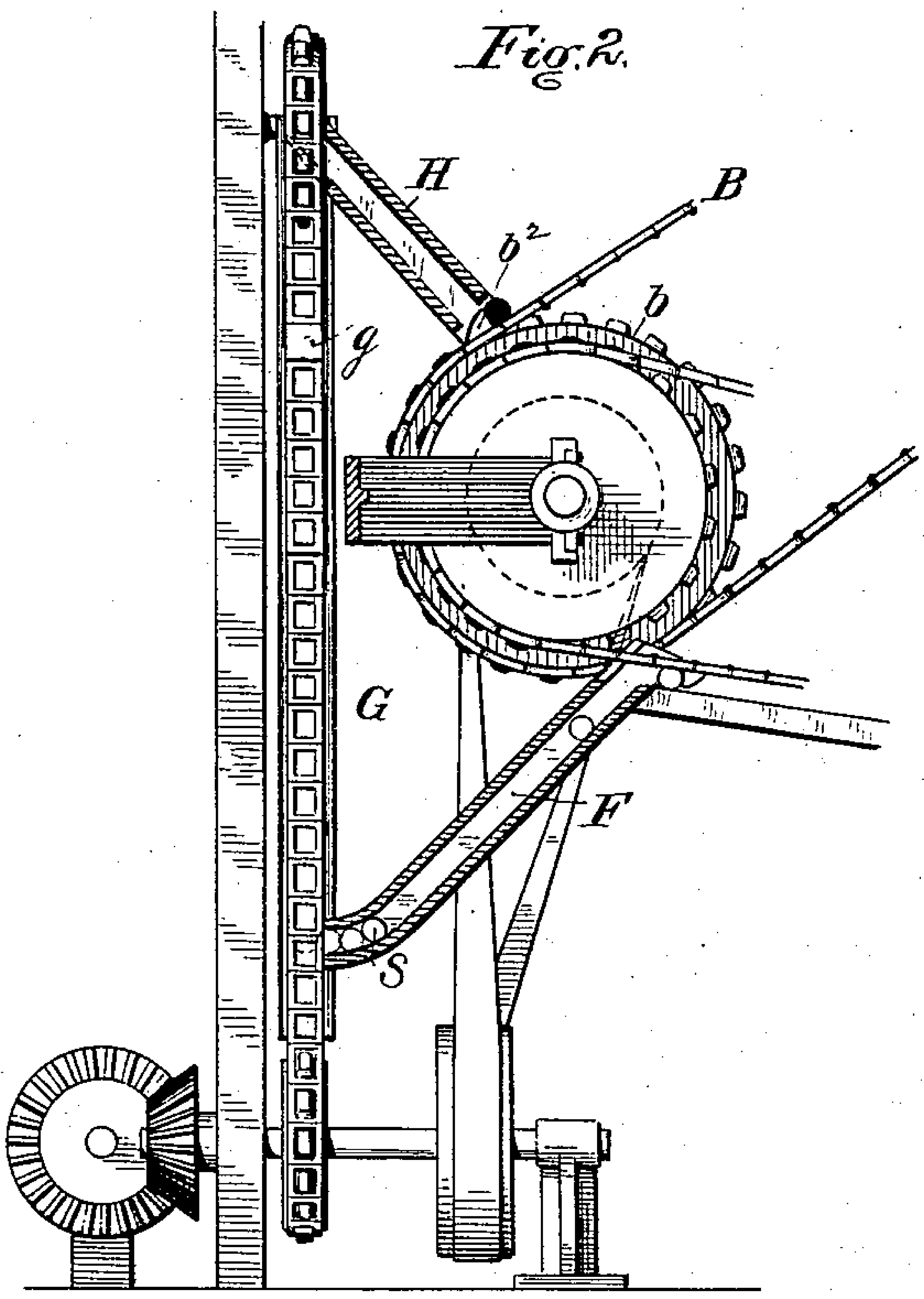


Fig. 4.

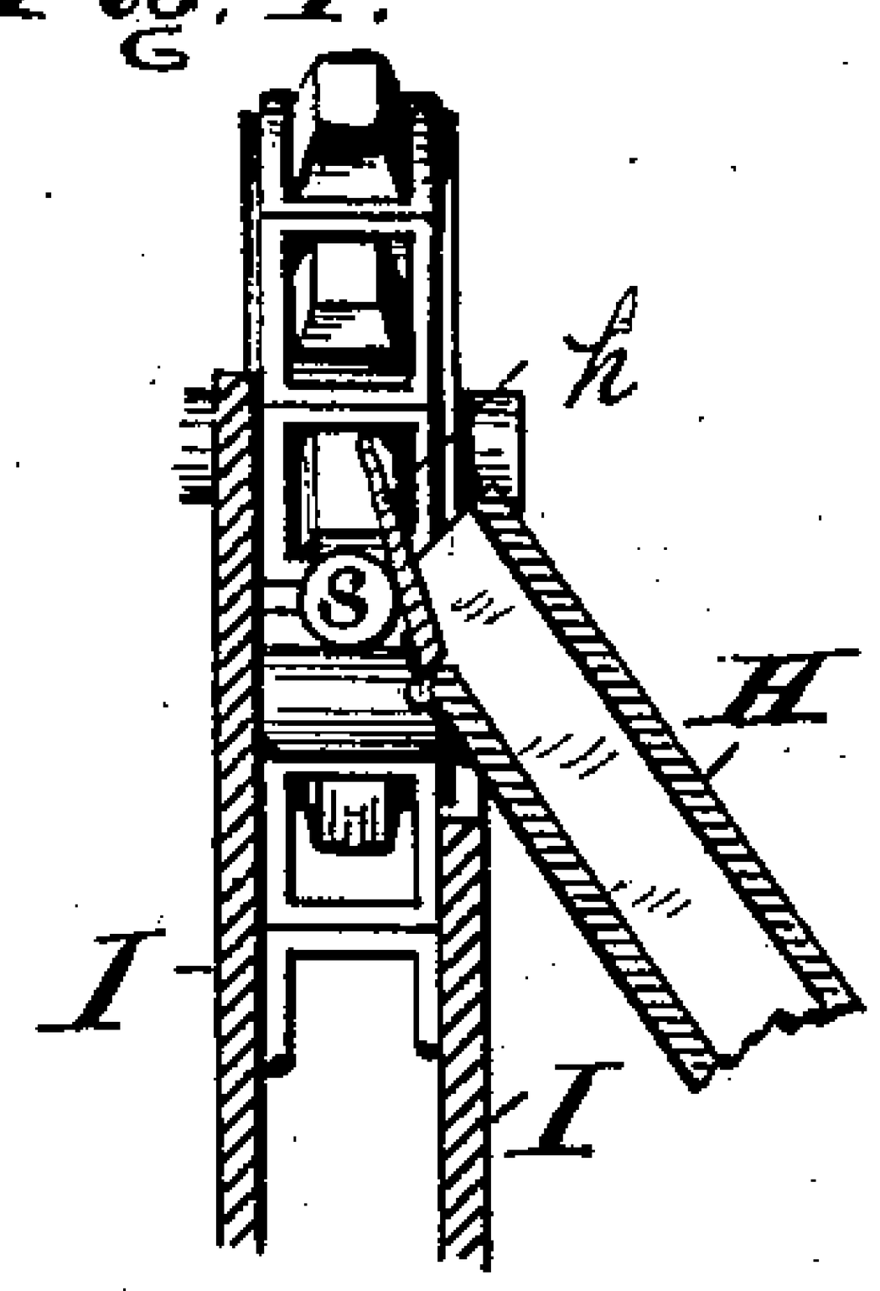


Fig. 5.

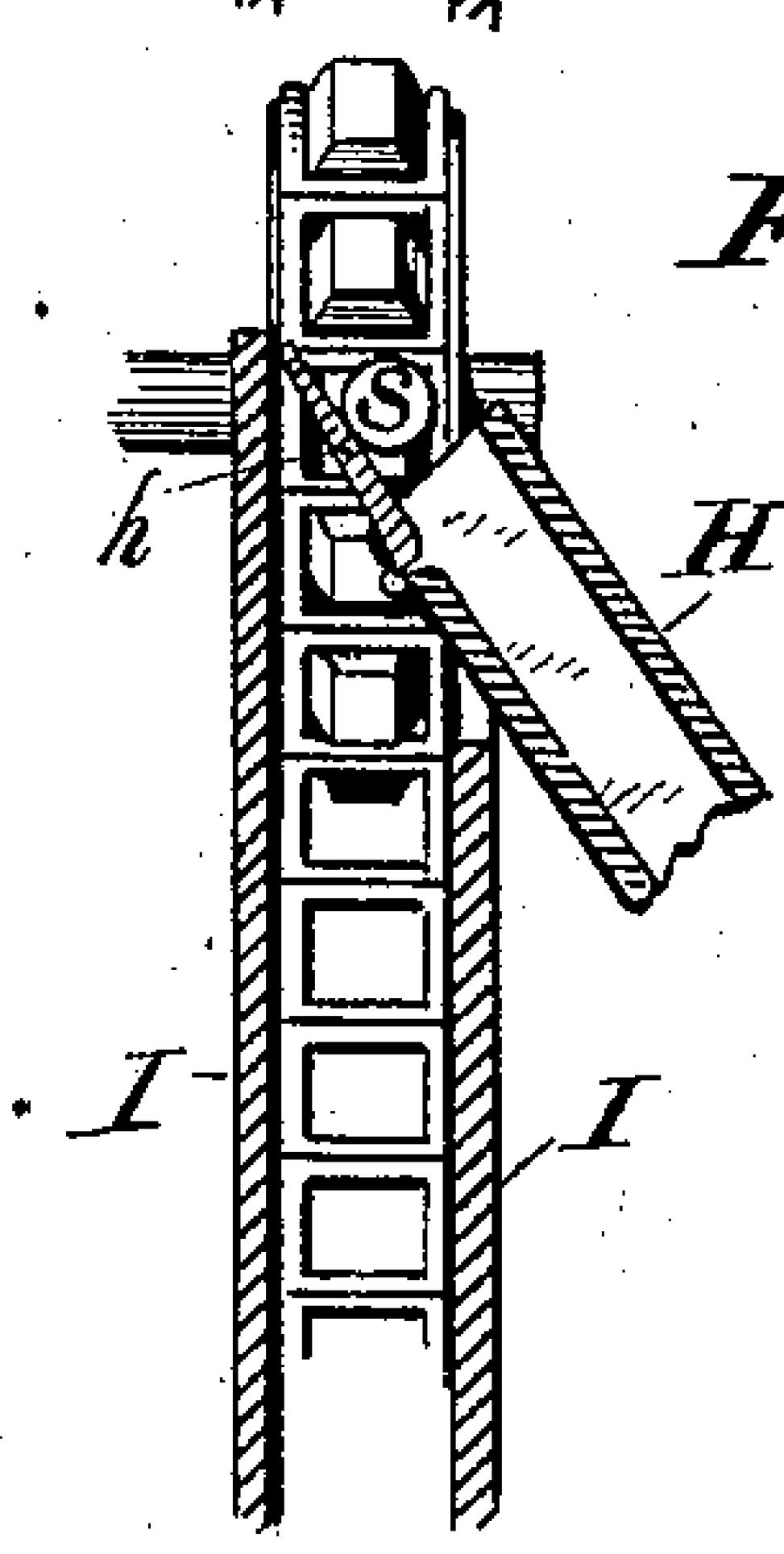
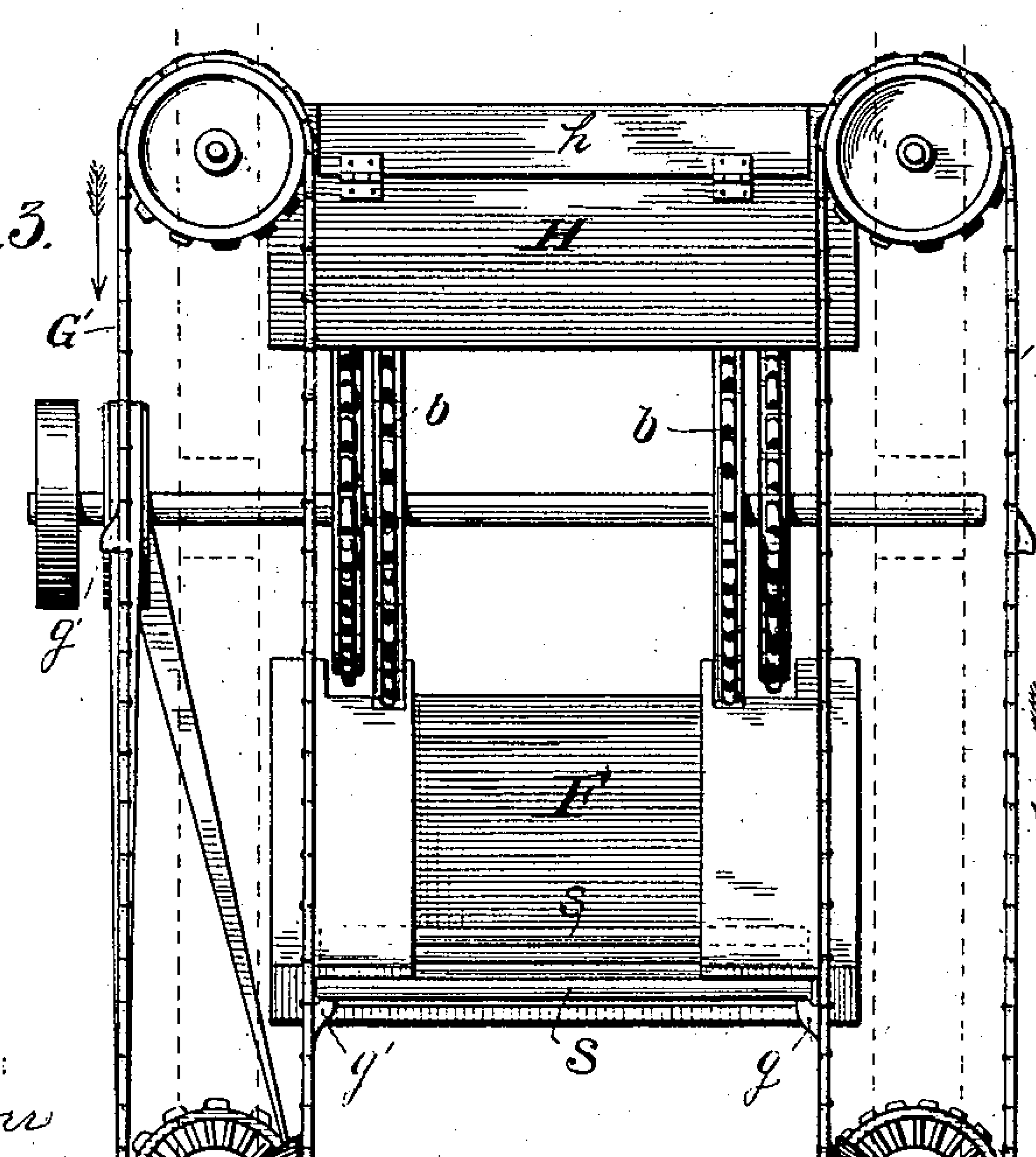


Fig. 3.



WITNESSES:
N H Coulon
John Dolleyon

John Waldron
INVENTOR
By his Attorneys
W. C. Strawbridge,
J. Bonsall Taylor.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN WALDRON, OF NEW BRUNSWICK, NEW JERSEY.

HANGING-UP AND CARRYING-OFF MACHINE FOR WALL-PAPER MANUFACTURERS' USE.

SPECIFICATION forming part of Letters Patent No. 322,765, 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.

The invention is, moreover, an improvement upon a certain apparatus having the same object as my present invention, application for patent for which was executed simultaneously with the execution of this application and filed in the Patent Office at the same time.

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 fragmentary 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 are employed, primarily, to carry the laths with the festoons hung upon them for drying, and which are likewise employed for automatically returning the laths to the device for redepositing them upon the lath or carrying-up belts.

In the form of apparatus shown the lines are endless sprocket-chains carried over four distinct sets of sprocket-wheels, *a a* and $a^{\times}$ $a^{\times}$, which are suitably supported and which occupy the relative disposition and arrangement shown in the drawings. The lines may, however, be ropes, belts, or kindred carrying contrivances. That portion of the lines which extends between the two upper sets of wheels, *a a*, is employed for the carrying of the laths with the festoons upon them, while that portion or under surface of the lines which is inverted and extends between the two lower sets of wheels, $a^{\times}$ $a^{\times}$, is used for rubbing, rolling, or otherwise by frictional or direct contact, causing the laths which have descended through the returning-chute, as hereinafter described, to travel along a returning floor or plane, $A^{\times}$, back to a device for feeding them to the carrying-up belts.

The floor may be inclined, and, if desired, but three sets of wheels may be employed to carry the lines when the returning-floor is inclined.

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^2, 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 zigzag outline, and which is conveniently made in such form to prevent the turning, twisting, or irregular movement of the laths in their gravitative descent through it.

The carrying-up belts, the carrying-off belts, and the lines 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 inverted line-belts along the returning-floor to the carrying-up belts, I provide a receiving-chute, F, into which the returned laths are deposited one by one, and two vertical similarly-moving partly-encased 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 opposing 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 encased 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 floor may, if desired, be arranged to deposit its laths 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 delivering-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 floor, 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 floor—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 floor. 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-belts of a lath-returning floor, along which by the action of the carrying-lines themselves the laths are caused to travel from the delivering end of the lines back to the carrying-up or feeding belts.

I am aware that I am not the first to employ a returning-belt, broadly, as such, for returning laths to an elevating contrivance, and I therefore in this application desire to confine myself to the specific means for effecting a return set forth in the claims. It is proper for me to add that certain of the elements of this invention, more particularly the returning-chute, the lifting-belts, the receiving-chute, and the delivery-chute, are set forth and claimed in an application for patent which I have filed under date of April 2, 1885, as Serial No. 160,978.

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 endless belts or equivalent

carrying media forming the lines, and a lath-returning floor, in propinquity to the surface of which the under or inverted faces of the lines act for returning the delivered laths from the lines to the 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 endless belts or equivalent carrying media forming the lines and operating as set forth, a lath-returning floor beneath the inverted faces of the lines, and suitable means for transporting the laths delivered from the returning-floor to the carrying-up belts, substantially as described, and for the purposes set forth.

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 endless belts or equivalent carrying media forming the lines and disposed to travel over suitable sets of carrying wheels or pulleys, a returning-chute, a lath-returning floor, in conjunction with which the under inverted faces of the lines operate, and lifting-belts, substantially as set forth.

4. 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 endless belts or equivalent carrying media forming the lines and disposed to travel over suitable sets of carrying wheels or pulleys, carrying-off belts, a returning-chute, a lath-returning floor, in conjunction with which the under inverted faces of the lines operate, and lifting-belts, substantially as set forth.

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

JNO. WALDRON.

In the presence of—

J. BONSALL TAYLOR,

WM. C. STRAWBRIDGE.