

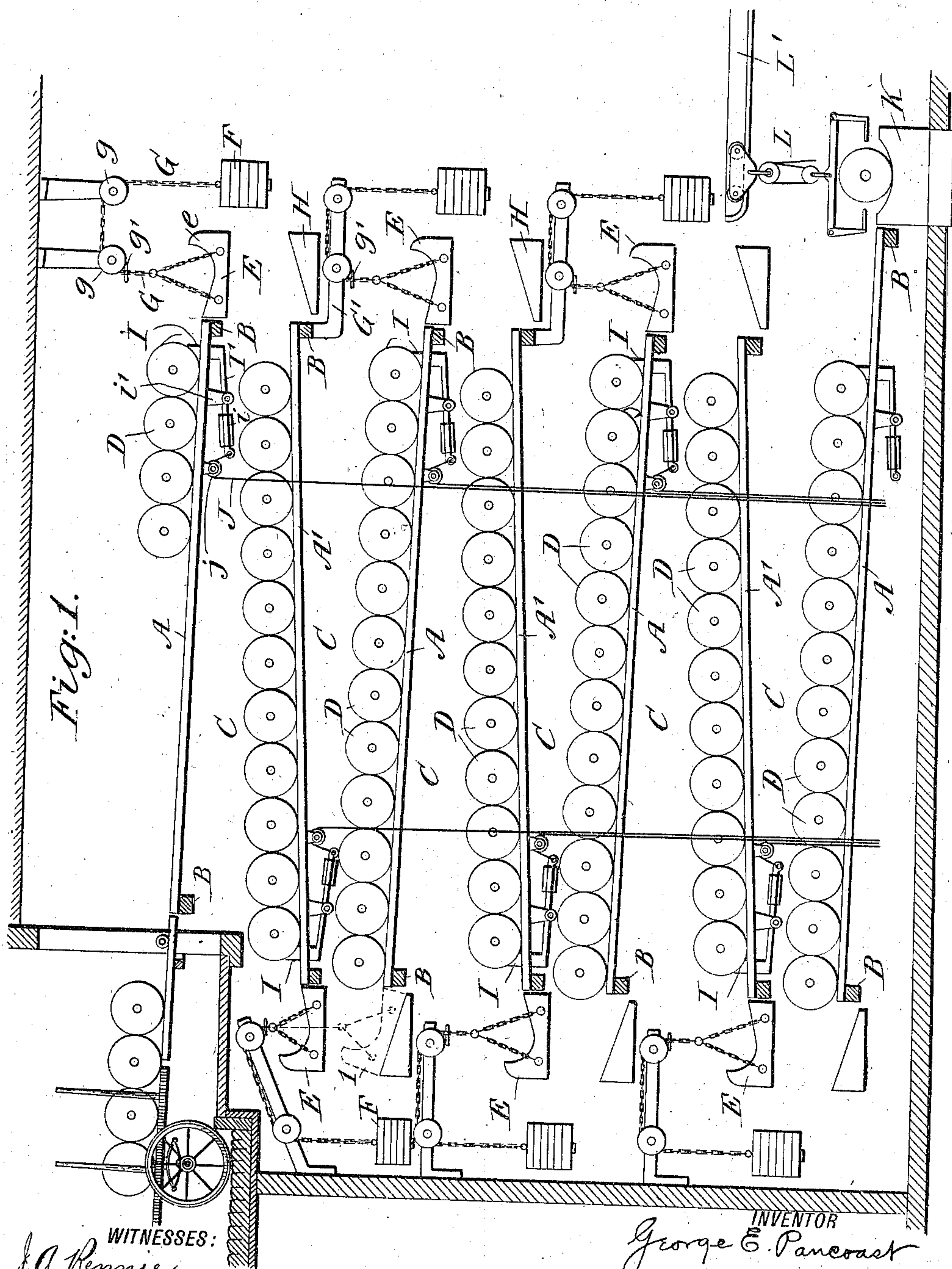
(No Model.)

2 Sheets—Sheet 1.

G. E. PANCOAST.
STORAGE AND DELIVERY SYSTEM.

No. 571,389.

Patented Nov. 17, 1896.



WITNESSES:
J. A. Rennie
W. C. Winger

INVENTOR
George E. Pancoast
BY
Barth Deemer & Co.
ATTORNEYS.

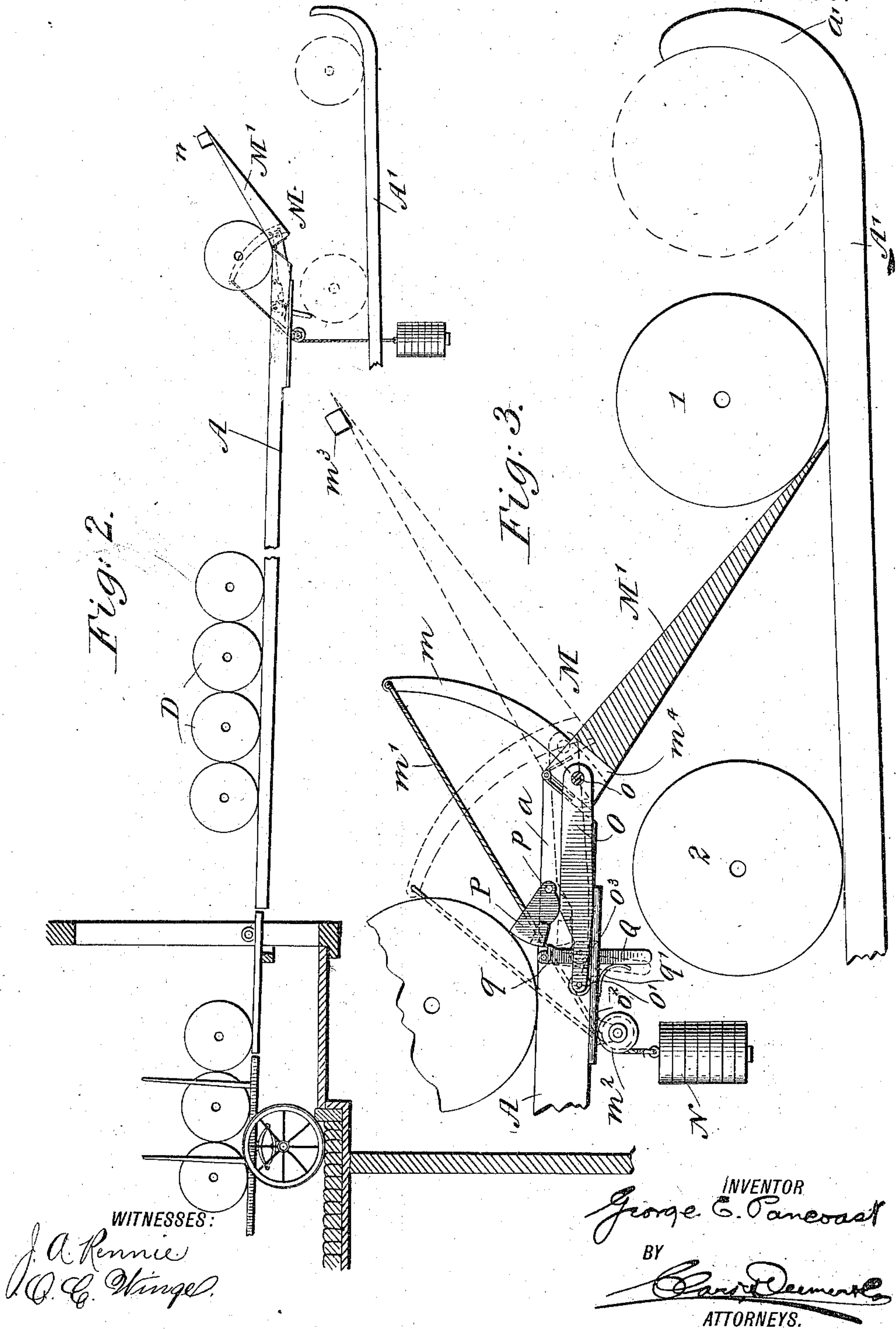
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UNITED STATES PATENT OFFICE.

GEORGE EDWIN PANCOAST, OF NEW YORK, N. Y.

STORAGE AND DELIVERY SYSTEM.

SPECIFICATION forming part of Letters Patent No. 571,389, dated November 17, 1896.

Application filed June 22, 1896. Serial No. 596,391. (No model.)

To all whom it may concern:

Be it known that I, GEORGE EDWIN PANCOAST, a citizen of the United States, and a resident of New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Storage and Delivery Systems, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts.

This invention relates to an improved storage and delivery system of the class specially adapted for handling and storing rolls of paper, the object of the invention being to provide means for feeding rolls of paper directly from a truck located upon the surface of the street to a series of inclined planes located one below the other, whereby the rolls may be caused to travel by their own gravity from one inclined plane to another. They may further be stored upon these inclined planes and finally discharged at an elevation considerably below the surface of the street.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal sectional elevation illustrating my improved system. Fig. 2 is a similar view illustrating a detail thereof, and Fig. 3 is an enlarged detail view of a tripping mechanism used in the operation of my improved system.

In the practice of my invention I provide, primarily, a series of inclined planes A and A', these said planes being located in vertical series and extending downwardly in opposing angles from each other, and they are supported by any suitable framework, which framework in the drawings is indicated by cross-beams B, but any suitable means for supporting the planes may be employed. The spaces C between these said planes constitute a series of receptacles adapted for storing as well as delivering the rolls of paper D, whereby the paper rolls can be continuously stored therein.

Located at the lower end of each inclined plane is a depending block E, which said block is normally maintained in an upward position by means of a counterweight F, the

block and weight being secured to the respective ends of a chain G, which engages with rollers g, which said rollers are mounted on suitable hangers G'.

The upward movement of the block G is limited by means of a suitable stop g', located upon the chain G, and the downward movement is limited by means of a stop H.

The upper surface of the block E is extended downwardly at an angle greater than the angle of the inclined plane adjacent to it, and joining the angle of the surface of the block is a concave stop e, adapted to receive the impact of a descending roll. One of these blocks E is located normally at the lower end of each inclined plane, and when a roll of paper is allowed to drop upon the block from the inclined plane the weight of said roll will cause the block to descend until its lower surface engages with the inclined surface of the stop H, whereby the block will be tilted until its upper surface is upon a line with the next inclined plane, when the roll will leave the block, as illustrated by dotted lines 1 in Fig. 1 of the drawings.

Each inclined plane is provided at its lower end with an upwardly-extended stop I, which said stop forms part of a lever I', and it is normally maintained in an upward position by means of a weight i. This said lever is mounted upon a hanger i', and its lower end communicates with a rope or chain J, which passes over a suitable roller j, which said rope is adapted to operate the lever when it is desired to release a roll, and when a plurality of rolls are stored upon the planes A and A' within the compartments or receptacles C, in order to transmit a roll from a given plane to the next lower one, the lower end of the lever I' will be pulled upwardly until the stop I is carried downwardly below the surface of the inclined plane. The bottom roll will then immediately leave the plane and roll upon the block E adjacent thereto, and the frictional contact maintained between the remaining rolls will cause them to slightly adhere to each other, whereby the lower roll will travel much faster than they will, so that the stop I can be reset before another roll reaches it.

At the lower end of the last inclined plane A is a weighing-scale K, adapted for receiv-

ing and weighing the rolls. This said scale is located at the lowest elevation to which it is desired to carry the rolls, and after they are weighed they can be transmitted to any suitable location by means of a trolley L and a track L'.

To further carry out my invention, I may provide on the lower end of each inclined plane an automatic stop-and-trip mechanism. (Illustrated in Figs. 2 and 3 of the drawings.) This mechanism comprises a hinged plane M', which has an arm *m* extended upwardly from one side of the rear end thereof, which said arm is connected to a chain or rope *m'*, which passes over a pulley *m*² and is connected to a counterweight N, whereby the plane M' is normally maintained in an upwardly-extended position, as illustrated by full lines in Fig. 2 and dotted lines in Fig. 3 of the drawings, and the upward motion of this plane is limited by means of a stop *m*³. Connected also to the upper end of the plane M' is a rearwardly-extended arm O, which said arm is pivoted within a slot *m*⁴ of the plane M' by means of a pin *o*.

Located upon the opposite end of this said arm is a friction-roller *o'*, which engages with a track *o*². This said arm is in frictional engagement with a segmental stop P, which is pivoted to a pin *p*, located within a slot *a* of the plane A, and this said stop is maintained in the downward position illustrated in Fig. 2 of the drawings, when the plane M' is extended upwardly. When said plane is extended upwardly, the arm O is pulled forwardly until the segment P rests upon the narrow extension *o*³ of the said arm, but when the plane M' is in its downward position said arm O will be pushed rearwardly until the segment P engages with the widened portion of the said arm, whereby the segment will be extended upwardly in the line of travel of the rolls to prevent their downward movement, and the segment P will be locked in its upward position by means of a projection *q* of a lever Q, which said lever is normally maintained in its forward position by means of a spring *q'*.

In the operation of this mechanism the rolls will by their gravity lower the plane M' in the position illustrated in full lines in Fig. 3 of the drawings, and the specific roll causing this operation will by its momentum be forced upwardly upon the inclined plane A' until it strikes the stop *a'*, and before it can start to descend upon the inclined plane A' the plane M' will have been again carried to its upward position, and the segment P, which has been

previously forced into the line of travel of the next roll, will be released by the first roll striking the lever Q, while in its descent upon the inclined plane A'. By this mechanism the rolls may be automatically fed and stored upon the inclined planes A and A', and in the operation of the device it is simply necessary to back up a truck-load of rolls and start them down upon the first inclined plane A.

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

1. In a storage and delivery system for storing and transmitting rolls of paper, the combination of a series of oppositely-directed inclined planes and a series of vertically-movable blocks for carrying rolls from one plane to another, and means for retaining rolls of paper upon and releasing them from the planes, substantially as shown and described.

2. In a storage and delivery system for handling rolls of paper, the combination of a plurality of oppositely-directed inclined planes arranged in vertical series and a plurality of counterweighted blocks or receptacles for conducting rolls of paper from one inclined plane to another, and a series of weighted stops for regulating the movement of the rolls upon the said inclined planes, substantially as shown and described.

3. In a storage and delivery system for handling rolls of paper, the combination of a plurality of oppositely-directed inclined planes arranged in vertical series; with a means for controlling the descent of the rolls adapted to be transmitted from the said plane, comprising an automatic trip mechanism located upon the lower end of each plane, said mechanism constituting a hinged plane having an arm extended therefrom which engages with a counterweight for maintaining the said plane in a normally upwardly-extended position, and a longitudinal sliding arm and a segmental stop which is operated by said arm, and a locking-lever for said segmental stop, said lever adapted to be operated by a descending roll of paper, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 20th day of June, 1896.

GEORGE EDWIN PANCOAST.

Witnesses:

C. SEDGWICK,
O. C. WINGE.