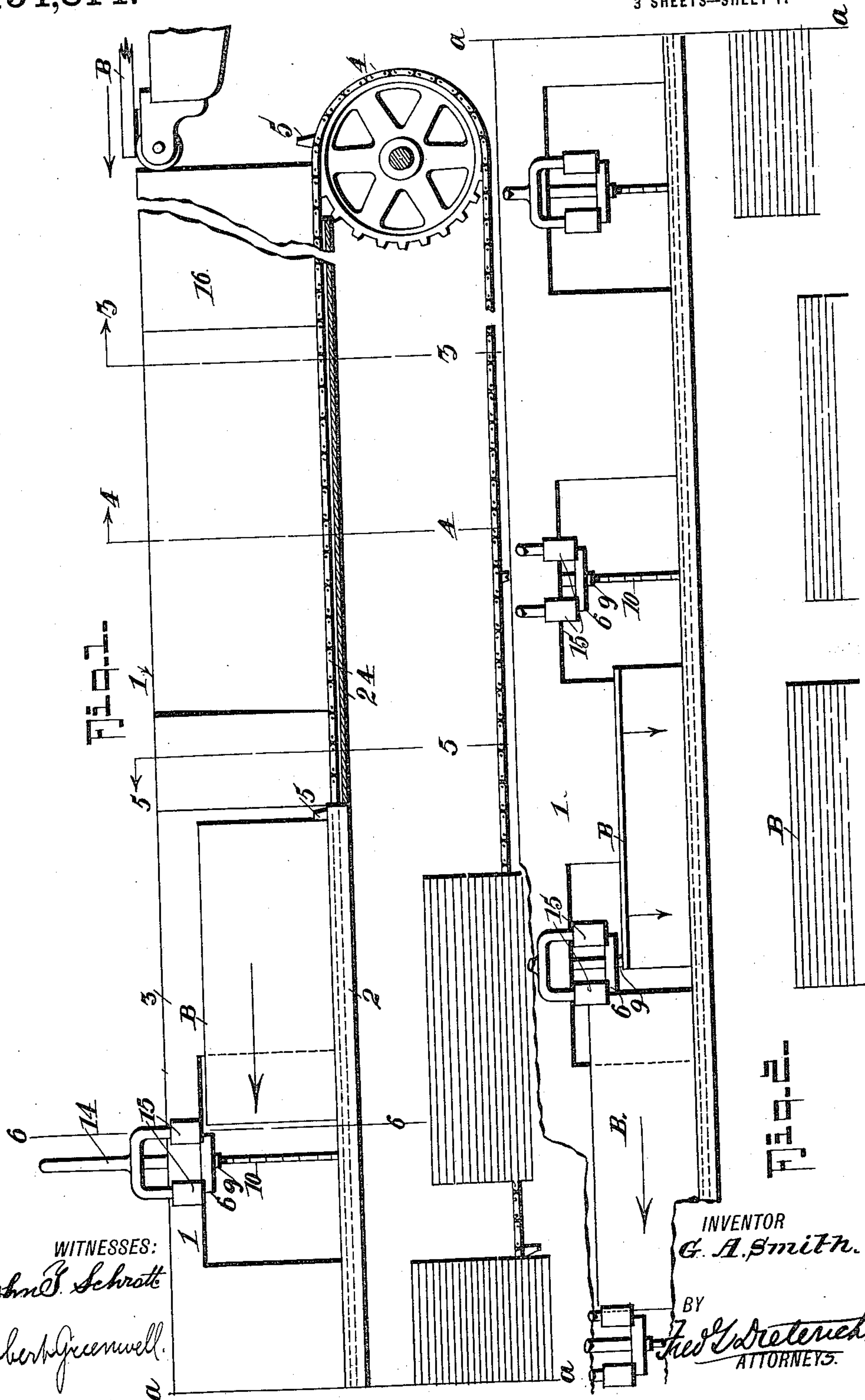


G. A. SMITH.
 SUCCESSIVE AND SELECTIVE ASSORTER.
 APPLICATION FILED JUNE 14, 1913.

Patented Sept. 28, 1915.
 3 SHEETS—SHEET 1.

1,154,814.



WITNESSES:
John E. Schrott
Robert Greenwell

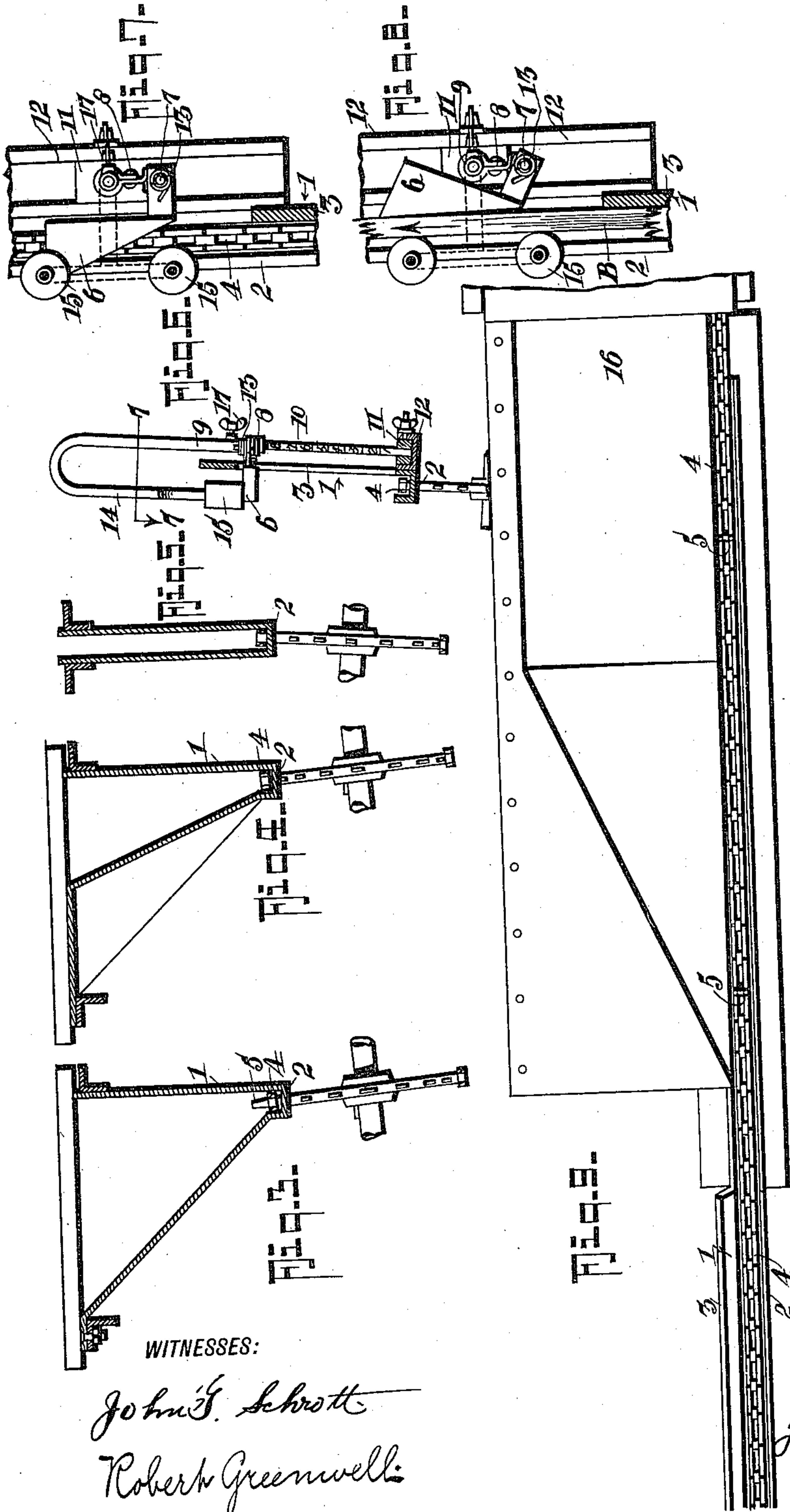
INVENTOR
G. A. Smith.

BY
Frederick G. Breitenbach
 ATTORNEYS.

G. A. SMITH.
SUCCESSIVE AND SELECTIVE ASSORTER.
APPLICATION FILED JUNE 14, 1913.

Patented Sept. 28, 1915.
3 SHEETS—SHEET 2.

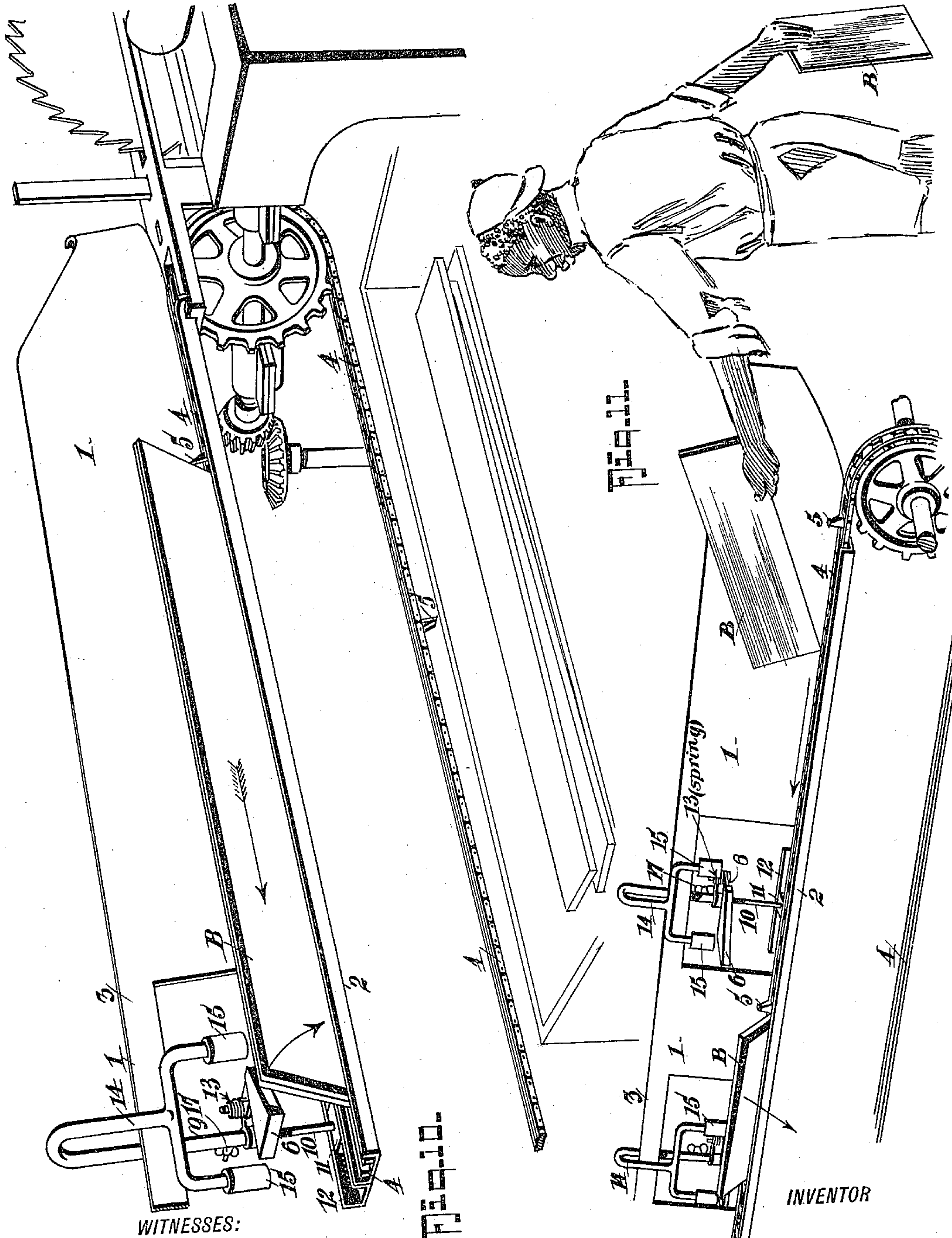
1,154,814.



G. A. SMITH.
SUCCESSIVE AND SELECTIVE ASSORTER.
APPLICATION FILED JUNE 14, 1913.

Patented Sept. 28, 1915.
3 SHEETS—SHEET 3.

1,154,814.



WITNESSES:

John E. Schwett
Robert Greenwell

INVENTOR

G. A. Smith
BY
Fred G. Dietrich & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE ANDREWS SMITH, OF SOUTH HILL, VIRGINIA.

SUCCESSIVE AND SELECTIVE ASSORTER.

1,154,814.

Specification of Letters Patent.

Patented Sept. 28, 1915.

Application filed June 14, 1913. Serial No. 773,685.

To all whom it may concern:

Be it known that I, GEORGE A. SMITH, residing at South Hill, in the county of Mecklenburg and State of Virginia, have invented certain new and useful Improvements in Successive and Selective Assorters, of which the following is a specification.

In the art as at present practised, wooden boxes are usually built up in various sizes from boards of various widths. For example, a box 14 inches high may be built up of two boards, one 10 inches wide and the other 4 inches wide, or a 9 and a 5 inch board may be used, a $9\frac{3}{4}$ and a $4\frac{1}{4}$ board, or in fact any combination of boards which will give the desired height may be used. As the boards come from the saws they are of varying widths, and it has heretofore been the practice to deposit these boards in a single pile, making it necessary to assort the boards into separate piles for use, or when it is desired to make up the boxes the helper must go to the pile and pick out the combination of boards desired to make up the box of the particular size. This is slow and tedious work and the present invention has for its objects to provide a method of handling the boards as they come from the saws and prior to their delivery to the box maker, and also to provide an apparatus for effecting the assorting of the boards either as they come from the sawing machine or the planers, or by taking a pile of boards of various widths and effecting their separation into separate piles, each pile containing boards of but one width.

Another object of the invention is to provide a method and means whereby the separated boards may be placed into distinct bins or stacks in serial order, the boards of greatest width being stacked at one end of the series and those of least width being stacked at the other end of the same, and to provide a method and means whereby boards of any two widths may be stacked adjacent to one another in separate piles, whereby the necessary two width boards to make up a box of a given height may be located in adjacent piles so that the helper or attendant can take a desired number of boards from each of the two adjacent piles to make up the box required without losing time to go from one pile to another pile at a more or less great distance apart. This

increases the effective work the helper can do in a given time and consequently reduces the expense of manufacturing the box.

The invention again resides in providing an apparatus for mechanically effecting the separation of the boards into piles or depositing them in bins, which, in its generic nature includes a table or guide along which the boards are moved, while resting on edge, from the entrant end of the apparatus toward the exit end of the same, by a conveyor which is preferably of the endless type, a succession of means being provided at intervals along the table by which the boards of a size are thrown off into bins, each size board being separately binned or stacked.

Another object of the invention is to so construct the throwing off means that they may be adjusted to throw off boards of any width to which they are set, or the several throwing off devices may be arranged to throw off and stack the boards into successive piles progressively according to width of boards, the boards of greatest width being located at one end of the series and those of least width being located at the other end, the intermediate stacks progressively diminishing in the width of the boards stacked and thereby making the apparatus useful either as a progressive assorter or as a selective assorter according to the desires of the user.

The invention also resides in those novel details of construction, combination, arrangement and operation of parts, all of which will be first fully described and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figures 1 and 2, which are readable as one by joining the lines *a—*a**, constitute a side elevation of the assorter. Fig. 3 is a cross section on the line 3—3 of Fig. 1, looking in the direction of the arrow. Fig. 4 is a cross section on the line 4—4 of Fig. 1, looking in the direction of the arrow. Fig. 5 is a cross section on the line 5—5 of Fig. 1, looking in the direction of the arrow. Fig. 6 is a cross section on the line 6—6 of Fig. 1, looking in the direction of the arrow. Fig. 7 is a detail horizontal section on the line 7—7 of Fig. 5, showing the normal position of the wedge fingers or throwing out devices. Fig. 8 is a view simi-

lar to Fig. 7 showing the position of the wedges or throwing out devices when a board of greater width than the desired width is passing by. Fig. 9 is a detail top plan view of the entrant end of the assorter and the discharge end of the planing machine showing how the boards are turned on edge. Fig. 10 is a detail perspective view showing how the boards are assorted as they come from a resawing machine. Fig. 11 is a detail perspective view showing how the boards may be fed into the assorter by hand.

In the drawings in which like numerals and letters of reference indicate like parts in all the figures, 1 is the assorter which comprises a table 2 having a fence 3 along one side. The table 2 is longitudinally channeled slightly and the fence 3 and table 2 are slanted slightly to prevent the boards falling off prematurely.

4 is an endless conveyer which passes along the channel of the table 2 and has abutments 5 that engage the board B and cause them to move along in a continuous procession from the entrant end toward the exit end of the machine. At suitable intervals are located the throwing off devices, each of which consists of a finger or wedge-like member 6 which is pivoted at 7, on a bracket 8 that is carried by a tubular rod 9, which has vertical adjustment on the post 10. The post 10 is mounted on a base 11 which is adjustable along the table in a guide 12.

The finger 6 is projected outwardly in the path of movement of the boards, by a spring 13.

The tubular rod 9 has a portion 14 that is bent down over the open side of the assorter and carries retaining rollers or fenders 15, the lower edges of which lie in a plane just above the corresponding finger 6 for a purpose hereinafter made clear.

When the assorter is used in connection with a planing or a sawing machine which discharges the boards in a horizontal plane, the entrant end is provided with a turning chute 16 to set the boards on edge (see Figs. 1, 3, 4 and 5).

17 is a set screw that holds the rod 9 in its adjusted position on the standard or post 10, whereby the rollers 15 and wedge member or finger 6 can be raised or lowered to adjust the same to throw out the board of the desired width at that place.

In practice, as many throwing out devices are employed as there are different width boards to assort, and when it is desired to pile the boards in a succession of piles of progressively diminishing widths the various members 6—15 are set progressively closer to the bed 2 from one end of the machine toward the other. When, however, it is desired to make up boxes which require a given number of boards of one width, say 9 inch boards, and a given number of boards

of another width, say 5 inch boards, to make up a box of the desired height, say 14 inches, should the machine be adjusted as a progressive separator, the 9 inch pile of stuff will be located near one end of the machine, while the 5 inch stuff would be located nearer the other end of the machine and a considerable distance away. The helper would then have to take a certain number of boards from the 9 inch pile walk with them down to the 5 inch pile, there taking a corresponding number of 5 inch boards and then carry the whole to the box maker. I therefore adjust the assorter next in succession to the 9 inch assorter to throw out the 5 inch boards instead of the next lower set of boards, which would be, say the 8 inch assorter. The 8 inch assorter being adjusted to throw out 5 inch boards, the 5 and 9 inch boards are therefore located in adjacent piles and the helper can pick out from those piles the required number of boards. The 8 inch boards pass through the remaining succession of assorters and are discarded at the far end of the machine. In this way, I can adjust the machine to throw out boards in adjacent piles which are needed for the particular order of boxes that are being manufactured at the particular time and save considerable time in going from one pile to another to select stock. This saving of time naturally results in an increase in the amount of work that can be accomplished in a given period of time and enables a consequent saving in the cost of manufacture.

By reference to Figs. 1, 2, 7 and 8 it will be observed that the boards of a width to clear the rollers 15 but not clear the wedges 6 will be thrown out as they engage the wedges 6 while all boards of lesser width pass on below the wedges. Boards of greater width than the wedges are set for will pass between rollers 15 and the fence 3 and force the wedges back as shown in Fig. 8, thus only boards of a size for which the wedges or fingers 6 are set, will be thrown out at that particular location. In order to conveniently assist in quickly setting the wedges, the standard 10 may be suitably graduated in inches and fractions thereof in any well known manner.

From the foregoing description taken in connection with the accompanying drawings the construction and advantages of the apparatus will be understood as will also the method of handling the boards that are discharged originally at a given place regardless of width or size and assorting them conveniently to the work to be performed.

By adjusting the position of the adjacent assorters closer or farther apart, the apparatus can be arranged to assort boards of any desired length.

The construction of apparatus illustrated is but one form of the same and many modi-

fications in the details of construction and design of the parts may be made without departing from the invention, the apparatus shown and described being illustrative and I do not wish to be restricted to the precise details thereof save and except those specifically set forth in the appended claims.

What I claim is:—

1. In a board assorter, the combination with means for moving the boards in a procession in a linear direction, of a series of mechanical devices located at different places along the line of procession for engaging the boards throwing out boards of predetermined widths at the different locations to pile the boards in separate piles and means for passing boards of greater and less widths than the selected width by the selected places.

2. In a board assorter, means for moving the boards in a procession in a linear direction, a series of means located at different places along the line of procession for throwing out boards of predetermined widths at the different locations to pile the boards in separate piles, and means cooperative with the aforesaid means for passing boards of greater or less width than the predetermined widths past said throwing out means and rendering said throwing out means inoperative.

3. In a board assorting machine, a table having a longitudinal fence on one side inclined to the vertical, a conveyer for conveying the boards along said table seriatim, and a plurality of sets of throwing out devices located at different places along the line of travel of said boards for throwing out boards of predetermined widths at predetermined places while boards of greater or less widths pass by.

4. In a board assorting machine, a table, means for passing boards on edge along said table in procession, a series of stations along the line of procession, and means at each station for throwing boards of predetermined width out of the procession, said throwing out means arranged in progressive order from one end of the machine to the other whereby boards of greatest width will be ejected at one end of the machine and boards of least width ejected at the other end of the machine, and means for adjusting said throwing out means whereby a throwing out device may be adjusted to throw out boards of a greater or less width than the normal width for which the respective throwing out device is designed to operate.

5. An assorting apparatus including a table, means for passing boards along said table in a procession, a set of ejecting stations along the line of procession, an ejecting mechanism at each station, said ejecting mechanisms including devices projected in the path of travel and located a predeter-

mined distance above the bed of the table whereby to throw out of the procession boards of predetermined widths at predetermined places, said ejecting mechanism also including means cooperative with said projected device for rendering the same non-operative on boards of greater width than the predetermined width to be ejected or thrown out.

6. An assorting apparatus including a table, means for conveying boards over said table in a continuous procession, a plurality of ejecting stations along the line of travel of said boards, and a throwing out or ejecting mechanism at each station, said ejecting mechanisms each including a member projected in the line of travel of the boards, and means cooperative with said member whereby a board of greater than the predetermined width will pass said member and render the action of the same non-operative, said member and said last named means being relatively fixedly located.

7. An assorting apparatus including a table, means for conveying boards over said table in a continuous procession, a plurality of ejecting stations along the line of travel of said boards, and a throwing out or ejecting mechanism at each station, said ejecting mechanisms each including a member projected in the line of travel of the boards, and means cooperative with said member whereby a board of greater than the predetermined width will pass said member and render the action of the same non-operative, said member and said last named means being relatively fixedly located, and means for adjusting said relatively fixedly located parts vertically to eject boards of greater or less width substantially as shown and described.

8. In an assorting apparatus a table, means for passing the boards in procession along said table, a set of ejector stations, an ejecting apparatus at the respective stations set to eject boards of a predetermined width at a particular station, said ejecting apparatus including a standard, a finger supported on said standard and projecting into the path of movement of said boards, and a fender cooperative with said finger for engaging boards of greater width than the finger is designed to throw out to pass the same by said finger and render the action of said finger non-operative.

9. In an assorting apparatus a table, means for passing the boards in procession along said table, a set of ejector stations, an ejecting apparatus at the respective stations set to eject boards of a predetermined width at a particular station, said ejecting apparatus including a standard, a finger supported on said standard and projecting into the path of movement of said boards, and a fender cooperative with said finger for en-

gaging boards of greater width than the
finger is designed to throw out to pass the
same by said finger and render the action of
said finger non-operative, said fender in-
5 cluding devices for engaging the board on
the side opposite that engaged by the finger,
said finger being mounted to recede as the

fender engaged board passes by, and means
for adjusting the location of said finger and
fender with relation to the table.

GEORGE ANDREWS SMITH.

Witnesses:

A. L. BARHAM,
W. G. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."