

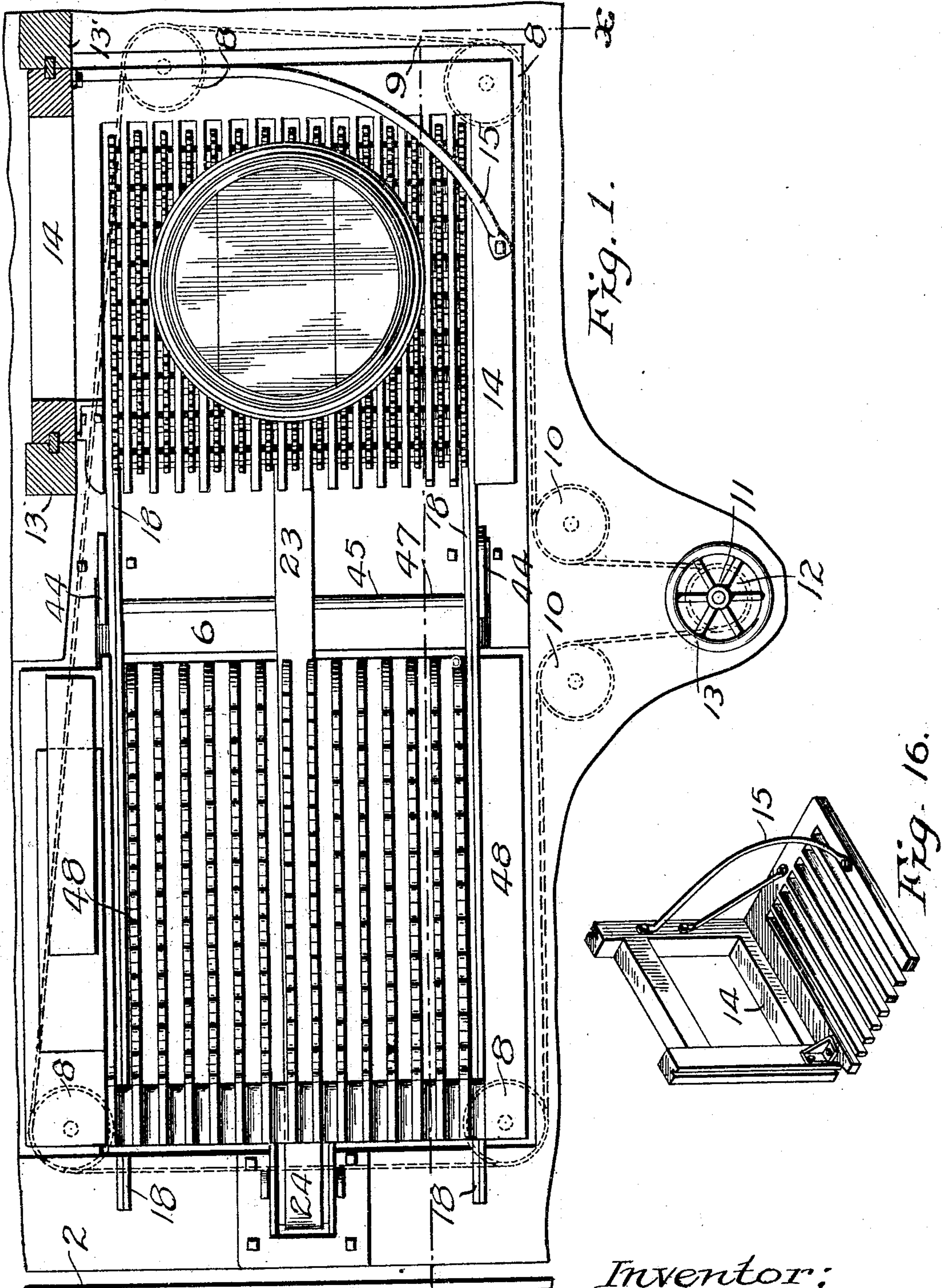
(No Model.)

4 Sheets—Sheet 1.

H. J. PRUTHERS.  
SACK OR BARREL TRANSFER.

No. 550,193.

Patented Nov. 19, 1895.



Witnesses;  
C. E. Van Doren  
Richard Paul

Inventor;  
Harvey J. Pruthers,  
By Paul & Hawley  
His Attorneys.



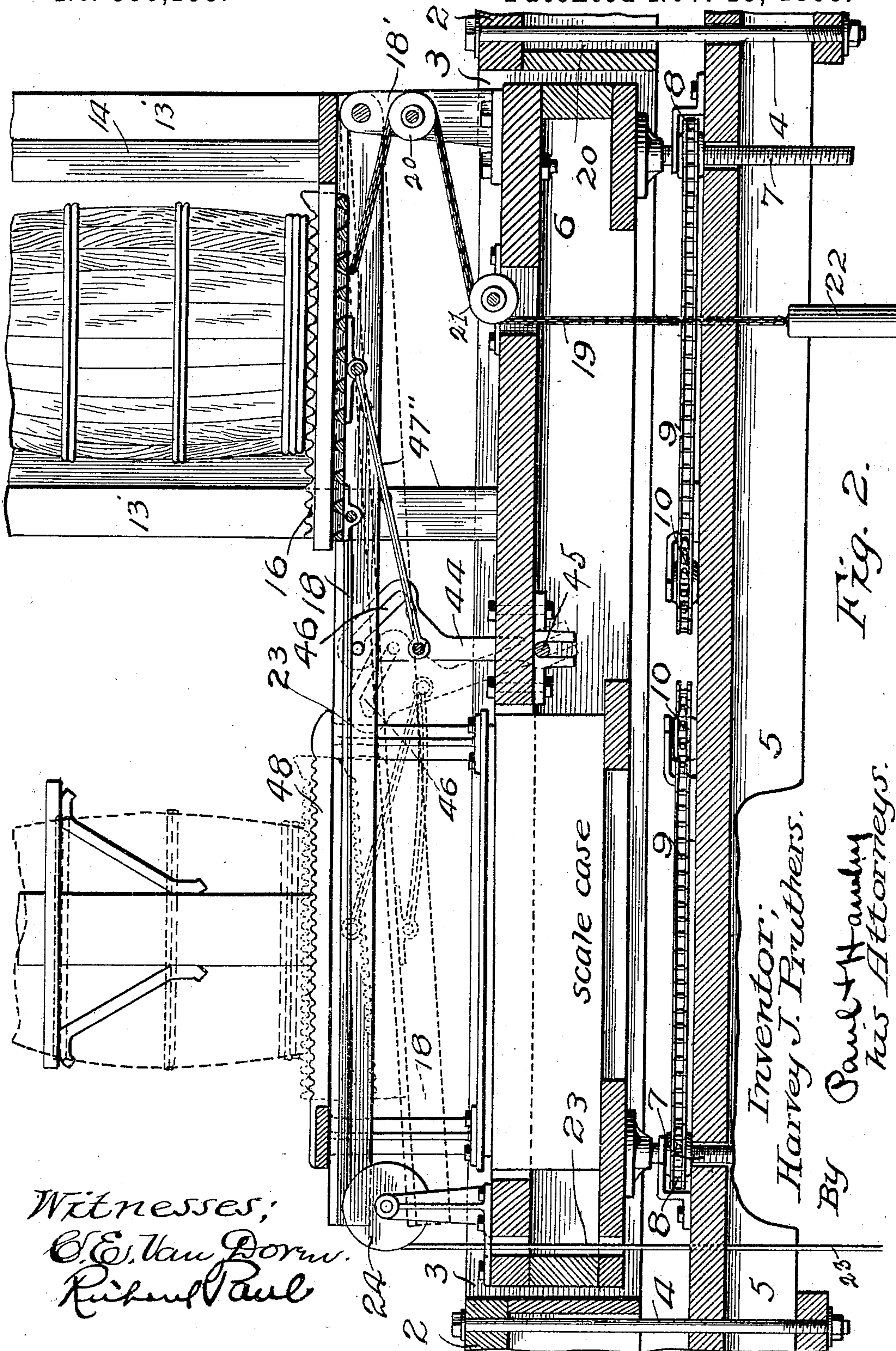
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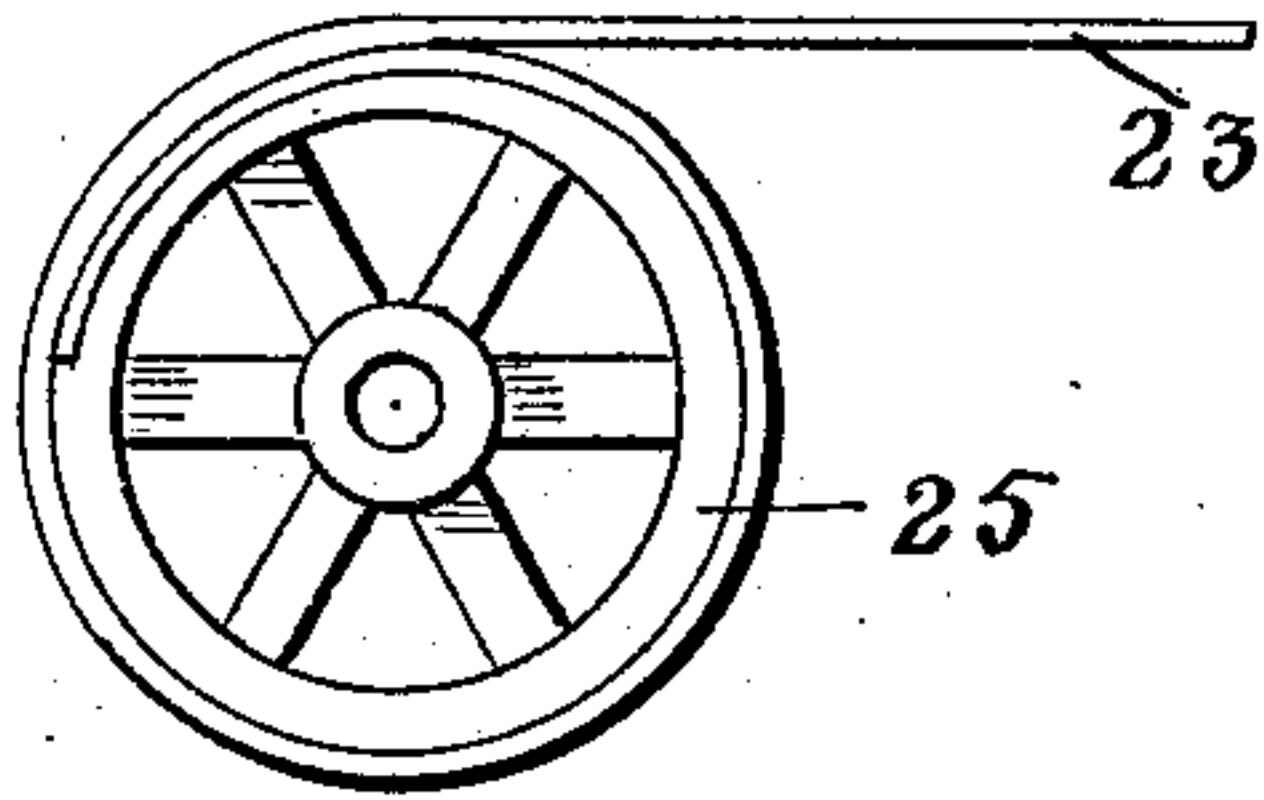


Fig. 9.

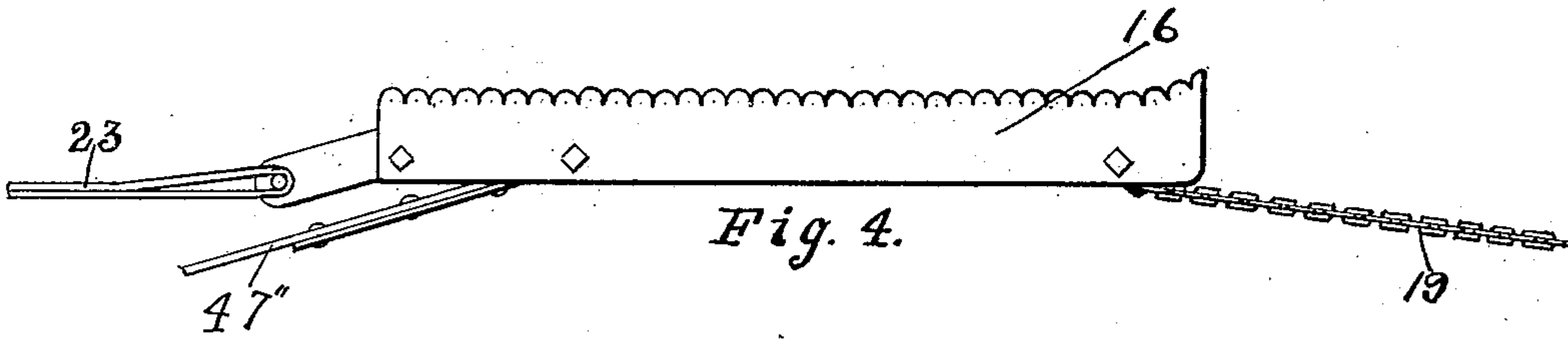


Fig. 4.

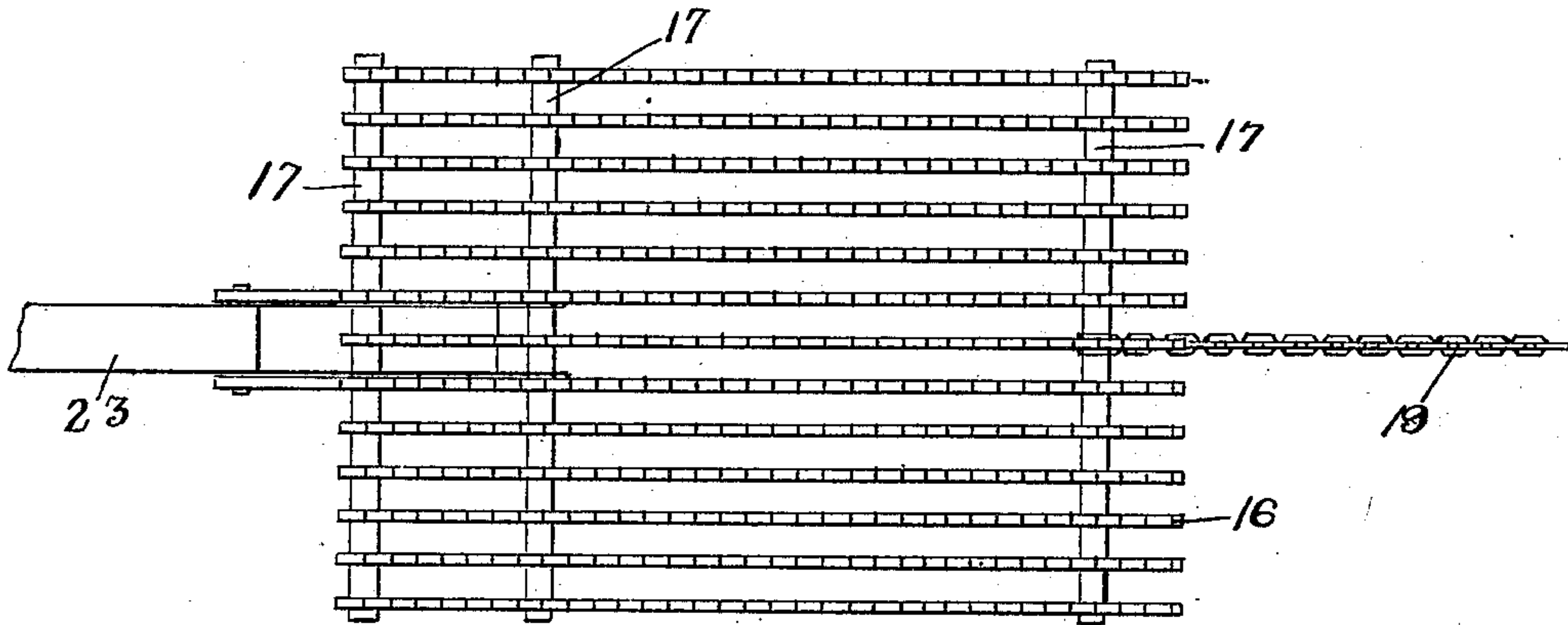


Fig. 3.

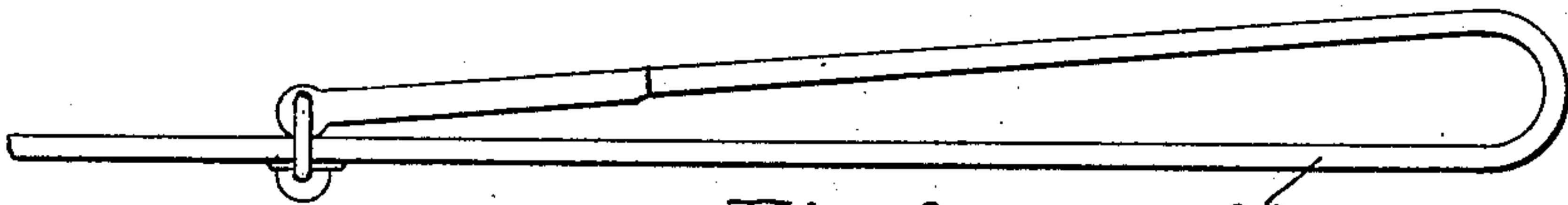


Fig. 8.

Witnesses

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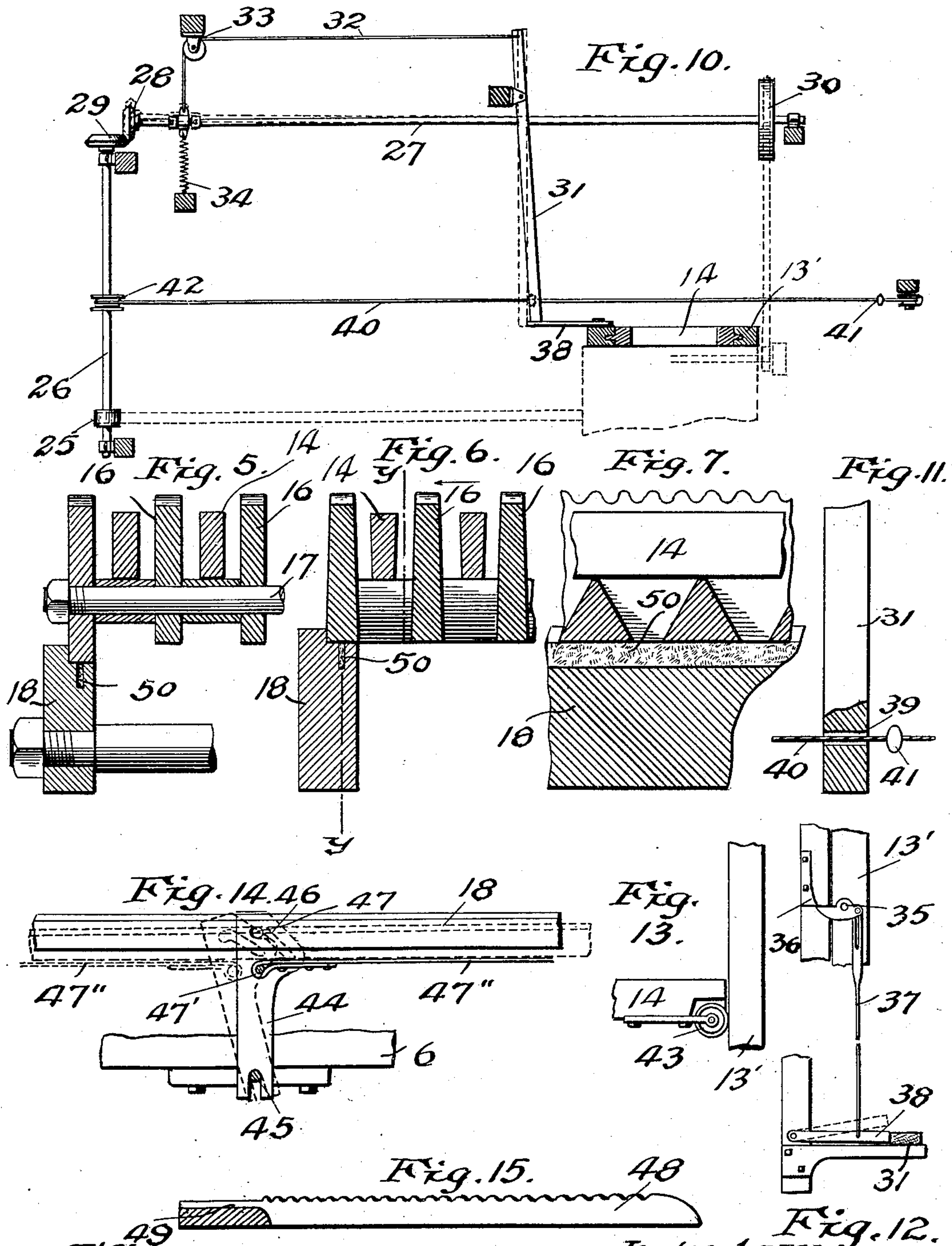
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# UNITED STATES PATENT OFFICE.

HARVEY J. PRUTHERS, OF MINNEAPOLIS, MINNESOTA.

## SACK OR BARREL TRANSFER.

SPECIFICATION forming part of Letters Patent No. 550,193, dated November 19, 1895.

Application filed May 27, 1895. Serial No. 550,780. (No model.)

*To all whom it may concern:*

Be it known that I, HARVEY J. PRUTHERS, of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented certain new and useful Improvements in Sack or Barrel Transfers, of which the following is a specification.

My invention relates to devices for automatically removing the filled packages of flour or other grain from the packer to the weighing-scale.

The object I have in view is to provide a device for automatically transferring the filled packages of flour, bran, or other grain from the packer-platform to the weighing-scale and thereby saving the trouble and expense of transferring the same by hand.

My invention consists in providing a mechanism in connection with the transferring apparatus, whereby the device may be used in filling and transferring packages of different sizes with equal facility.

My invention consists generally in providing a carrier upon which the package is deposited from the packer-platform and a mechanism to be released by the descending packer-platform, by which the carrier and the package will be quickly transferred to the scale-platform, in combination with a mechanism for lowering said carrier and depositing the package upon the scale-platform, all as hereinafter described, and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a plan view of the device embodying my invention. Fig. 2 is a longitudinal section on the line *x x* of Fig. 1. Fig. 3 is a plan view of the carrier. Fig. 4 is a side view thereof. Fig. 5 is a sectional view of a portion of the carrier, showing a modified construction of the same. Fig. 6 is a similar view showing a preferred form of construction. Fig. 7 is a sectional view of Fig. 6 on the line *y y*. Fig. 8 is a detail view of the belt, by means of which the carrier is moved from the packer to the scale-platform. Fig. 9 is a detail of the drum over which the carrier-belt passes. Fig. 10 is a plan view of the releasing mechanism arranged beneath the

machine. Figs. 11 and 12 are details of the releasing mechanism. Fig. 13 is a detail showing the rail carried by the packer-platform in engagement with the upright guide. Fig. 14 is a detail of the mechanism for lowering the carrier as it approaches the scale-platform. Fig. 15 is a detail of a portion of the scale-platform. Fig. 16 is a perspective of the packer-platform.

In the drawings, 2 represents the floor of the mill, provided with the large opening 3, within which is arranged the transferring mechanism. The entire apparatus is supported from the floor 2 by bolts 4, which extend down through the end of the frame or platform 5. This frame or platform may be raised or lowered by means of nuts upon the bolts 4. A frame 6 is provided, which nearly fills the opening 3 in the floor, and is supported on the platform 5 by threaded rods or bolts 7, having their upper ends secured in any suitable manner to the under side of the platform 6. Each of these rods 7 is provided with sprocket-wheels 8, as shown by dotted lines in Fig. 1, and a sprocket-chain 9 is provided to pass over these wheels and over idler-sprockets 10 and around a similar sprocket-wheel 11 on the upright rod or shaft 12, having a suitable hand-wheel 13 on its upper end, by means of which the rods 7 may be turned in their bearings in the frame 5 and the platform 6 raised or lowered whenever desired. At one end of the platform 6 is arranged the packer, which is of the usual form and need not be described here. It is provided with a packer-platform 14, the bottom or floor of which may be composed of a series of plates arranged with spaces between them, or preferably cast in one piece, so that when the platform is depressed as the package is filled the plates will fit into the spaces between the plates of the carrier, hereinafter described, and deposit the package upon the upper edge of the plates composing the carrier. The packer-platform is also provided with a curved brace 15, which serves to strengthen the same and retain the packages in position while being filled.

The carrier may be made of a series of plates held together, as shown in Fig. 3, by rods 17, or it may be cast in one piece, as shown in Fig. 6. The carrier is adapted to slide upon the rails 18, which form a track between the



packer and the weighing-scale, and pivotally supported beneath the packer-platform upon the standard 18. The upper edges of the plates composing the carrier are roughened, and one end of the same is turned up to aid in retaining the package in position upon the carrier. A chain 19 is connected to one end of the carrier and passes over pulleys 20 and 21, and is provided with the weight 22 by which the carrier is returned to its normal position after depositing the package upon the weighing-scale.

To the opposite end of the carrier is connected a belt 23, which passes over a pulley 24 near the scale-platform and thence to a drum 25 upon the shaft 26, that is arranged beneath the floor. The shaft 27 is arranged near the shaft 26 and is provided upon its end with a friction-pulley 28 in position to engage a similar pulley 29 on the shaft 26. The shaft 27 is supported in bearings which permit a slight horizontal movement of the end of the shaft adjacent to the shaft 26, and its opposite end is provided with a pulley 30, over which a belt passes to the main driving-shaft of the machine. As shown in dotted lines in Fig. 10, a lever 31 is provided near the shaft 27 and is provided near its pivoted end with a chain or cord 32, which passes over a pulley 33 and is connected to the shaft 27 near the friction-pulley 28. On the opposite side of the shaft is provided a spring 34, for the purpose hereinafter described.

The guide 13' of the packer-platform is provided with a pivoted catch 35, which extends out beyond the edge of the guide in position to be engaged by a lug or projection 36 on the frame of the packer-platform. A rod 37 is provided having a slot in its upper end in which the catch 35 is pivoted and having its lower end connected to dog 38, the end of which is normally in engagement with the edge of the lever 31. Near the dog 38 the lever 31 is provided with the opening 39, through which passes a cord or chain 40, having an adjustable button 41, and passing over a drum 42, arranged upon the shaft 26, and provided at its opposite end with a suitable weight. The packer-platform is provided with the roller 43, adapted to engage the edge of the guides 13' and thereby lessen the friction and decrease the wear on the face of the guide.

As before stated, the rails 18 are pivotally supported at one end beneath the packer-platform upon the standards 18', and the middle portion of the rails is supported by the parts 44, which have slotted lower ends to receive the ends of a rod 45', which is supported in bearings on the under side of the frame 6. The parts 44 are provided at their upper end with the inclined and horizontal slots 46, through which the bolts 47 pass into the rails 18. The parts 44 move back and forth on their supports 45' and the bolts 47 are free to slide in the slot in the upper end of each part 44. The parts 44 are connected

beneath the rails 18 by the rod 45, provided near its middle portion with a chain or cord 47', having its opposite end connected to the carrier. The left-hand end of the rails 18 is not supported, being free to move up and down, according to the position of the parts 44. When the carrier is in its normal position beneath the packer-platform, the bolts 47 will be in the horizontal part of the slot 46 and the track 18 will be in its upper or horizontal position, as shown by full lines in Fig. 2. As the carrier is drawn toward the scale-platform, the cord or chain 47' will throw the parts 44 into the position indicated by dotted lines in Fig. 2, and this movement will also cause the bolts 47 to slide in the inclined portion of the slots 46 and permit the weight of the carrier to depress the rails until the package on the carrier has been deposited upon the scale-platform. The return movement of the carrier throws the parts 44 back to their normal position and elevates the track. When the carrier is returned to its normal position, the chain or rope 47' will throw the parts 44 back to an upright position and elevate the track.

The scale-platform comprises a series of plates 48, having a corrugated upper surface and provided at one end with grooves 49 and having the opposite end rounded, so as to avoid any possibility of the package catching thereon. These plates 48, comprising the scale-platform, are arranged with a space between them to receive the plates comprising the carrier. The rails 18 are also provided with a felt strip 50, arranged in a slot in the upper edge of the rail, within which any suitable lubricating material may be placed.

As shown in Fig. 7, the bottom of the carrier is open, so that any material that is spilled during the process of filling the sack or package will fall through the bottom of the carrier into a receptacle provided beneath.

The operation of the device is as follows: The packer-platform is raised up when it is desired to fill the package, and as the package is gradually filled the platform slowly sinks until its bottom becomes merged into that of the carrier arranged beneath. The plates of the carrier bottom being wider than those of the packer-platform bottom it necessarily follows that when the packer-platform has become entirely merged into that of the carrier-platform the package will rest upon the edge of the plates comprising the carrier and the catch 35 will be tripped, releasing the lever 31 and permitting the spring 34 to draw the shaft 27 to the position indicated in Fig. 10, thus bringing the friction pulley 28 into engagement with the pulley 29 on the shaft 26. As soon as the pulley 28 is thrown into engagement with the pulley 29, the carrier will be moved along the track 18 toward the scale-platform. As it approaches the scale-platform, the points 44 will be thrown over to the position indicated by dotted lines in Fig. 14 and the end of the track beneath the scale-platform depressed, so that as the plates



comprising the carrier-platform pass between the plates of the scale-platform the package will be deposited upon the scale-platform ready to be weighed. As soon as the carrier 5 has deposited the package upon the scale-platform, the button 41 will strike the edge of the lever 31, throwing the same to the position indicated by dotted lines in Fig. 10 and throwing the pulley 28 out of engagement 10 with the pulley 29 and stopping the further movement of the carrier. The weight 22, attached to the opposite end of the carrier, will then draw the same back over the track to a point beneath the packer-platform in position 15 to receive another package. As the carrier approaches its position beneath the packer-platform the parts 44 will be thrown back to their normal vertical position and the end of the track raised to its normal horizontal position. 20

If it is desired to fill packages of different sizes, the platform 6 may be raised by means of a sprocket mechanism, so as to adapt the packer to the change in the size of the package. 25 As shown in Fig. 8, the belt 23 is provided with an adjustable mechanism, so that its length may be adjusted according to the height of the platform 6 above the operating mechanism of the machine. 30 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the packer platform, of the carrier arranged beneath the same 35 in position to receive the filled packages therefrom, the scale platform, the track between said scale and packer platforms, the mechanism for drawing said carrier over said track toward said scale platform, said mechanism 40 being adapted to be released simultaneously with the delivery of the package to said carrier, and said track being arranged to be depressed when said carrier is near the limit of its movement toward said scale platform, for 45 the purpose set forth.

2. The combination, with the packer platform having an open bottom, of the carrier also having an open bottom, said packer platform being adapted to merge into the open 50 platform of said carrier and deposit the filled package thereon, the scale also having an open platform to receive said carrier, the track between said scale and packer platforms, the automatically released mechanism for moving 55 said carrier over said track toward said scale, and said track being adapted to be depressed by said carrier near the limit of its movement toward the scale platform, for the purpose set forth.

3. A sack or barrel transfer, comprising a 60 suspended platform 5, the platform 6 supported by said platform 5 and vertically movable, the packer platform arranged near said platform 6 and having an open bottom, the 65 carrier arranged beneath said packer platform upon said platform 6 and also having an open bottom, the scale platform arranged at the op-

posite end of said platform 6 and adapted to receive said carrier, the track connecting said scale platform and said packer platform, the 70 mechanism for moving said carrier along said track toward said scale platform, said track being adapted to be depressed when said carrier is near the limit of its movement toward said scale platform, means for arresting the 75 operation of the mechanism for drawing said carrier toward said platform and suitable means for drawing said carrier back to its normal position after the package has been deposited upon said scale platform, substan- 80 tially as described.

4. The combination, with the vertically moving packer platform having an open bottom, a carrier beneath said packer platform and also having an open bottom, the bottom 85 of said packer platform being adapted to merge into the bottom of said carrier platform and deposit the filled package thereon, the scale also having an open bottom, the track 90 between said scale platform and packer platform, the mechanism for moving said carrier over said track toward said scale, the pivoted parts 44 supporting said track and connected to said carrier and operated thereby to permit the depression of said track when said 95 carrier is near the limit of its movement toward said scale, for the purpose set forth.

5. The combination, with the vertically moving packer platform, the carrier arranged beneath the same and adapted to receive the 100 filled packages therefrom, the scale platform, the track between said scale platform and said packer platform, the mechanism for moving said carrier along said track toward said 105 scale platform, the pivoted parts 44 supporting said track, said parts 44 being provided with the diagonal slot 46, means connecting said parts 44 and said carrier, whereby when 110 said carrier approaches the limit of its movement toward said scale platform said parts 44 will be thrown from their normal vertical position and said track depressed, for the purpose set forth.

6. The combination, with the packer platform, of the carrier arranged adjacent thereto 115 to receive the filled packages therefrom, the track between said scale platform and said packer platform, the automatically released mechanism for moving said carrier along said 120 track toward said scale platform, the swinging parts 44 provided with diagonal slots 46, screws or bolts extending through said slots into the rails of said track, respectively, means 125 connecting said parts 44 and said carrier, whereby when said carrier is drawn toward said scale platform said parts 44 will be thrown 130 from their normal vertical position and said track depressed, and means for drawing said carrier back to its normal position near said packer platform and throwing said parts 44 back to their normal position and elevating said track, substantially as described.

7. The combination, with the packer platform, the vertical guides therefor, the carrier



adjacent to said packer platform, the scale, the track between said scale and packer platform, the mechanism for moving said carrier along said track, said mechanism comprising  
 5 a shaft 27 provided with a friction pulley 28, a shaft 26 having a similar pulley 29, a drum upon said shaft 26, a belt connecting said drum and carrier, the pivoted lever 31 connected to  
 10 said shaft 27 and arranged to hold said friction pulley 28 out of engagement with said pulley 29, a spring 34, and a mechanism arranged upon the guide of said packer to be actuated by the descending packer platform to release said lever 31 to permit said pulley  
 15 28 to be thrown into engagement with said pulley 29, by said spring 34 and means for disengaging the same, substantially as described.

8. The combination, with the packer platform, the guides therefor, wherein said platform is vertically movable, the carrier, the scale platform, the track between said scale platform and said packer platform, the mechanism for moving said carrier along said track  
 20 toward said scale platform, said mechanism comprising shafts 26 and 27, the friction pulleys 28 and 29 carried by said shafts respectively means for throwing said pulley 28 into engagement with said shaft 29, a belt connecting said shaft 26 and said carrier, a pivoted lever 31 connected to said shaft 27, a drum 42 upon said shaft 26, the cable 40 connected to said drum and extending through  
 30 an opening in said lever 31, the dog 38, a catch arranged upon the guide of said packer to be operated by the descending packer platform, means connecting said catch and said dog, and adjustable means carried by said cable for throwing said lever 31 into engagement

with the end of said dog, and disengaging said pulley 28 from said pulley 29 when said carrier is near the limit of its movement toward said scale, substantially as described. 40

9. A sack or barrel transfer, comprising a platform 5, the platform 6 arranged above the  
 45 same, the threaded rods or screws supporting said platform 6 upon said platform 5, the sprocket mechanism connecting said screws or bolts 7, whereby said platform 6 is rendered vertically adjustable, the vertically moving  
 50 packer platform, the carrier arranged upon said platform 6 and adapted to receive the filled packages from said packer platform, the scale platform, the track between said scale platform and said packer platform, the trip-  
 55 ping lever arranged to be engaged by the descending packer platform, means adapted to be released by said lever for drawing said carrier along said track toward said scale platform, said carrier platform being adapted to  
 60 merge into said scale platform and deposit the filled package thereon, said track being arranged to be depressed when said carrier is near the limit of its movement toward said  
 65 scale platform, and to be lifted again to its normal position when said carrier is near the limit of its return movement, means for arresting the operation of the mechanism for drawing said carrier toward said platform and  
 70 means for drawing said carrier back to its normal position, substantially as described.

In testimony whereof I have hereunto set my hand this 20th day of May, A. D. 1895.

HARVEY J. PRUTHERS.

In presence of—

A. C. PAUL,  
 RICHARD PAUL.