

(No Model.)

H. MOCK.
CONVEYER.

2 Sheets—Sheet 1.

No. 503,326.

Patented Aug. 15, 1893.

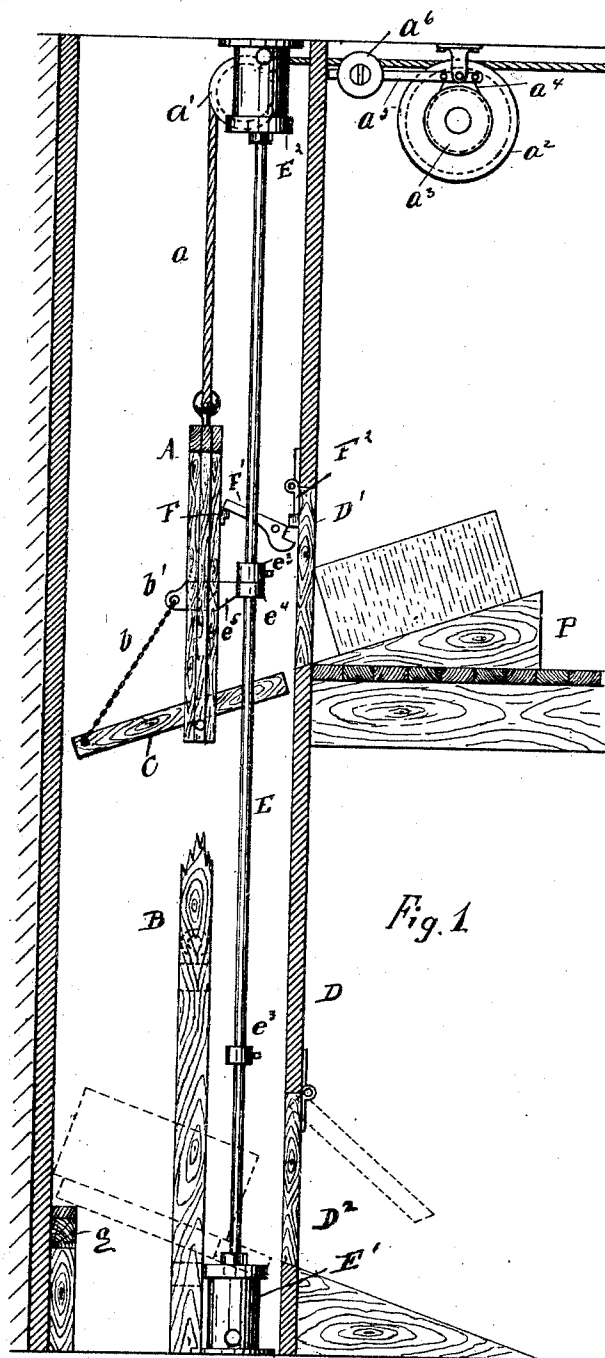


Fig. 1

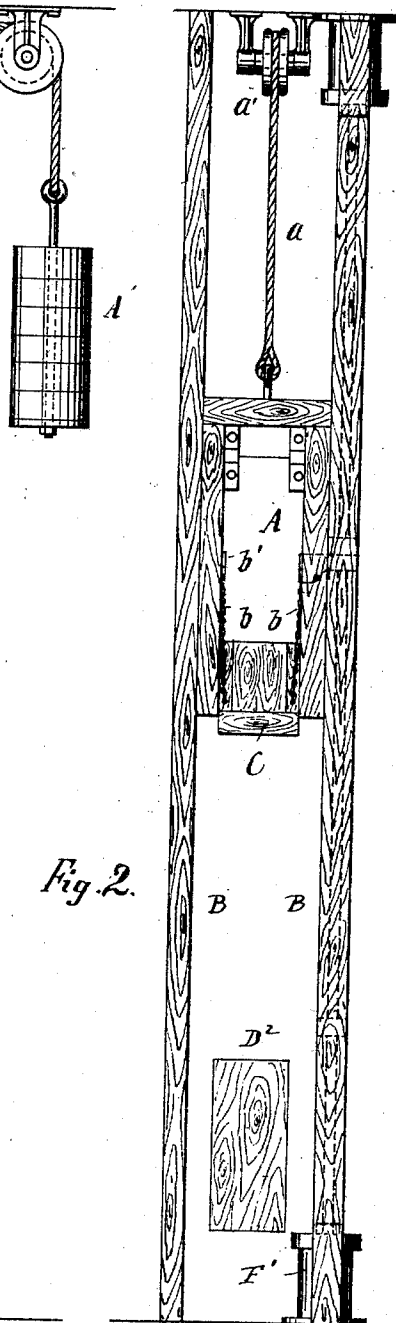


Fig. 2.

WITNESSES:

Charles Schroeder
Adolph Scherer

INVENTOR

H. Mock.

BY *Georgel Rieger*

ATTORNEYS.

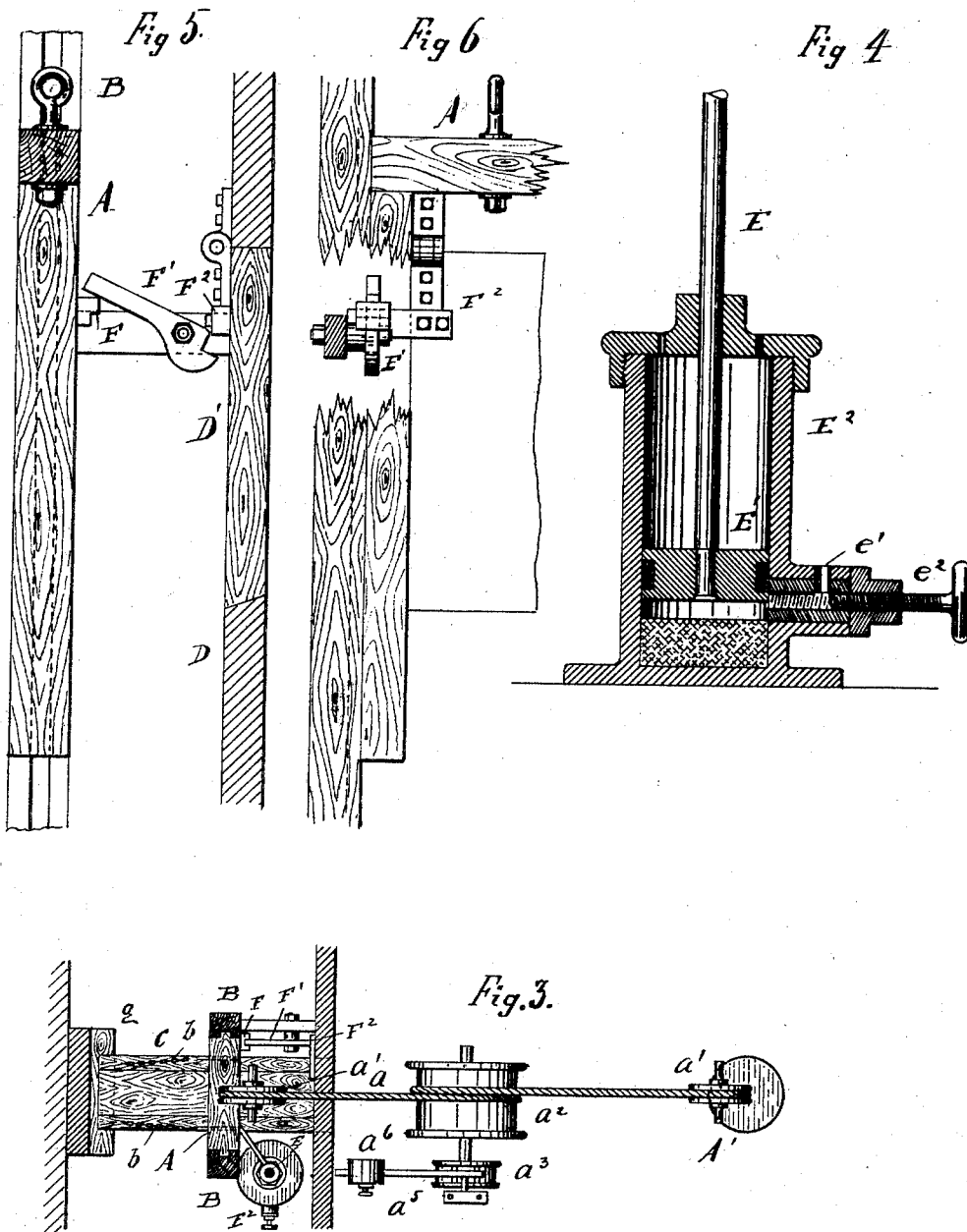
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Adolph Scherer

INVENTOR

H. Mock

BY Guepel & Ruygen

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY MOCK, OF NEW YORK, N. Y.

CONVEYER.

SPECIFICATION forming part of Letters Patent No. 503,326, dated August 15, 1893.

Application filed May 6, 1893. Serial No. 473,207. (No model.)

To all whom it may concern:

Be it known that I, HENRY MOCK, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Conveyers for Ice, &c., of which the following is a specification.

This invention relates to an improved device for lowering blocks of ice, barrels of flour and other heavy goods from the upper stories of an ice-house, refrigerating building, warehouse and the like, in an automatical manner, to the ground floor, where the goods are transferred to wagons for shipment.

15 The invention consists of a device for lowering ice or other merchandise, which comprises a counterbalanced frame, guided in upright ways and provided with a tilting platform, to which a block of ice or other heavy merchandise is transferred from an inclined plane, said platform being lowered, as soon as the load is transferred thereto, along a suitable padded guide-wall until it arrives at the lower end of the same, where the platform is tilted in the opposite direction and the block of ice discharged. The vertically-guided frame is provided with a bracket-sleeve that engages stops attached to a piston-rod, the pistons of which are guided in cylinders attached to the uppermost and ground floors, the cylinders being provided with outlet orifices, so as to act in the nature of a pneumatic brake and prevent the sudden concussion when the platform arrives at its upper or lowermost position. The vertically-guided frame of the tilting platform is adapted to engage a fulcrum gravity latch, so as to release the same from a laterally-projecting bolt of a hinged door arranged on the floor from which the goods are to be transferred upon the platform. As soon as the latch is released, the block of ice or other article is transferred by the opening of the hinged door immediately to the platform, and by the increased weight imparted to the platform, lowered until it is discharged on the ground floor.

50 In the accompanying drawings, Figure 1 represents a side elevation of my improved device for lowering blocks of ice or other articles. Fig. 2 is an end elevation of the same. Fig. 3 is a plan view of the same, and Fig. 4

a vertical central section of the air-cylinders which act as pneumatic brakes in connection with the shifting pistons and piston-rod operated by the supporting-frame of the platform. Figs. 5 and 6 are details.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents an oblong frame, which is suspended from a suitable wire rope *a* that is passed over a guide-pulley *a'*, and is provided with a suitable balance-weight *A'*. The wire rope or cable *a* passes around a drum *a²* which is provided with a friction-pulley *a³* around which a friction-band *a⁴* is passed, that is kept taut by means of a fulcrum lever *a⁵* to which the ends of the friction-band are applied, said lever being provided with an adjustable weight, *a⁶* so as to increase or decrease the friction of the band on the pulley. This friction brake prevents the too rapid descent of the frame A and permits the regulating of the speed of the same, during the descending and ascending motion of the frame.

75 The frame A is guided in ways of two uprights B, the frame being provided with suitable side-rails for this purpose. To the lower end of the vertically guided frame A is pivoted a platform C which is connected by chains *b* with ears *b'* of the vertical frame A the platform being mounted in such a manner that it is supported at a suitable angle of inclination.

85 The upright ways B in which the frame A is guided are arranged in a well or shaft, which is formed at one side by the wall of the building, said wall being faced with suitable padding, preferably with a layer of soft rubber, while the opposite side is formed of a wooden partition D which is provided on a level with the different floors with openings and with hinged doors *D'* *D²*. The doors of the upper floors are hinged so as to move into the well or shaft while the door *D²* is hinged so as to move in outward direction away from the shaft, as indicated by dotted lines in Fig. 1.

95 Sidewise of the vertically-guided frame A is arranged a vertical piston-rod E which is provided at its upper and lower ends with pistons *E'* that are guided in air-cylinders *E²*,

of which one is attached to the supporting-frame at the top story of the building, while the other is attached to the ground floor.

The air-cylinders are provided with openings e in the heads, so as to permit the access of air in the cylinders on one side of the piston while the other end of each cylinder E^2 is provided with an outlet channel e' for the air, which outlet channel can be made larger or smaller by an adjusting-screw e^2 , according as the air in the cylinder is desired to be forced out at a greater or less speed. The smaller the outlet opening of the channel e' the greater the resistance of the body of air to the piston and the greater the action of the air-cushion formed thereby.

On the piston rod E are arranged stop-collars e^3 which are engaged by a sleeve e^4 on a bracket arm e^5 of the vertical frame A . The stop-collars e^3 are so arranged that when the frame A arrives in the lowermost position with the platform C the sleeve e^4 strikes the lower collar e^3 and produces thereby a downward movement of the piston-rod and the piston, so that the air-cushion in the lower cylinder prevents the sudden concussion of the descending platform, owing to the slow escape of the air through the outlet channel e' . When the frame A moves in upward direction, and the sleeve e^4 comes in contact with the upper stop-collar e^3 the piston-rod E is shifted in the opposite direction, so that the upper cylinder and its piston act in the nature of a pneumatic brake and produce thereby the gradual stopping of the frame A and the platform C without any sudden or violent concussion. The frame A is further provided with a projecting stop F which engages in the ascending motion of the frame A a fulcrumed gravity stop F' so as to release the same from a laterally-extending arm F^2 that is attached to the hinged door D' , so that the same can swing outward under the action, owing to the weight of a block of ice or other article or merchandise that is resting against the same, by being placed in an inclined plane or chute P . As soon as the door opens, the block or other article is conveyed upon the inclined platform C , which immediately descends as the weight of the block and the platform overcomes the counter-balancing weight A' . The platform C descends, and arrives gradually at its lowermost position, being retarded by the pneumatic brake before described. When the platform arrives in its lowermost position, it abuts against a rubber-cushioned stop g that is arranged at the lower end of the padded wall of the building, so that the platform is tilted into an inclination opposite to the inclination it has when it receives the block, so that the same is discharged through the opening in the lower part of the partition and the hinged door D^2 upon an inclined plane P' so as to be transferred to the wagon or other conveyance for shipment.

When my improved conveying device is arranged in connection with a building having a number of floors, a number of split stops are arranged, which are removed when the goods are conveyed from the uppermost floor to the ground floors, but which are used by being applied to the piston-rod E when the goods are transferred from one of the intermediate floors to the ground floor, the split-stop serving for the purpose of permitting the convenient attaching and detaching of a stop on the piston-rod, according as the goods are to be lowered from the uppermost floor or one of the intermediate floors to the ground floor. By the conveying device described, heavy goods can be readily lowered by gravity from the upper floors of buildings to the ground floor, without requiring steam or other power for working the conveyer. As the construction is simple, the conveyer can be erected at comparatively small expense. Concussions are avoided by the pneumatic brake, the cylinders of which are provided, in addition to the air-escape channels, with rubber cushions, respectively at the upper and lower ends of the cylinders, so that in case the piston was moved beyond the air-escape channel e' , it would come in contact with the cushion and thereby the force of the impact of the same neutralized.

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

1. The combination of a vertically-guided frame, a platform pivoted to the lower part of said frame, chains for supporting said platform in inclined position, a counter-balancing weight applied to a wire rope, connected with the vertically guided frame for counterbalancing the weight of the guide-frame and platform, and a pneumatic brake, adapted to be operated by the vertically guided frame, when the same arrives at its uppermost and lowermost positions, substantially as set forth.

2. The combination of a vertically-guided frame, a platform pivoted to the lower end of said frame, chains for supporting said platform in an inclined position, a shaft for the conveying device and a padded wall, a partition on the other side, hinged doors in said partition at the different floors, and a pneumatic brake, that is operated by the vertically guided frame when the same arrives at its terminal positions, substantially as set forth.

3. The combination of a shaft having a padded wall at one side and a partition, having hinged doors, at the other side, hinged doors in said partition, inclined planes or chutes adjacent to the hinged doors in the partition, a vertically-guided frame, a platform pivoted to the lower end of the frame, chains for supporting the same in an inclined position, a stop at the lower part of the padded wall for tilting the platform when the same arrives in its lowermost position, and a pneumatic brake operated by the vertically guided

frame and adapted to arrest the same when the same arrives in its terminal positions, substantially as set forth.

5 4. The combination of a vertically-guided frame a platform hinged to said frame, a partition wall having hinged doors at the different floors, a fulcrum latch adapted to engage a projecting bar on the hinged door, a projection on the frame, to release the latch from
10 the bar of the hinged door, so as to permit the automatic opening of the same by the weight

of the goods placed against the same, so that the article can pass on to the platform, substantially as set forth.

In testimony that I claim the foregoing as
15 my invention I have signed my name in presence of two subscribing witnesses.

HENRY MOCK.

Witnesses:

PAUL GOEPEL,
CHARLES SCHROEDER.