May 31, 1932. C. E. CONSTABLE 1,860,704

GARMENT CONVEYER

Filed Sept. 25, 1928 2 Sheets-Sheet 1

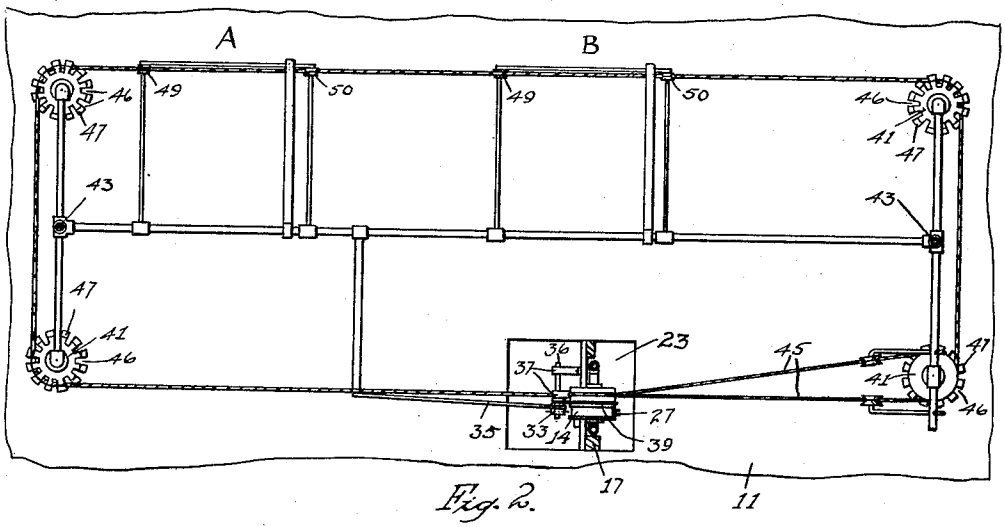


Fig. 2.

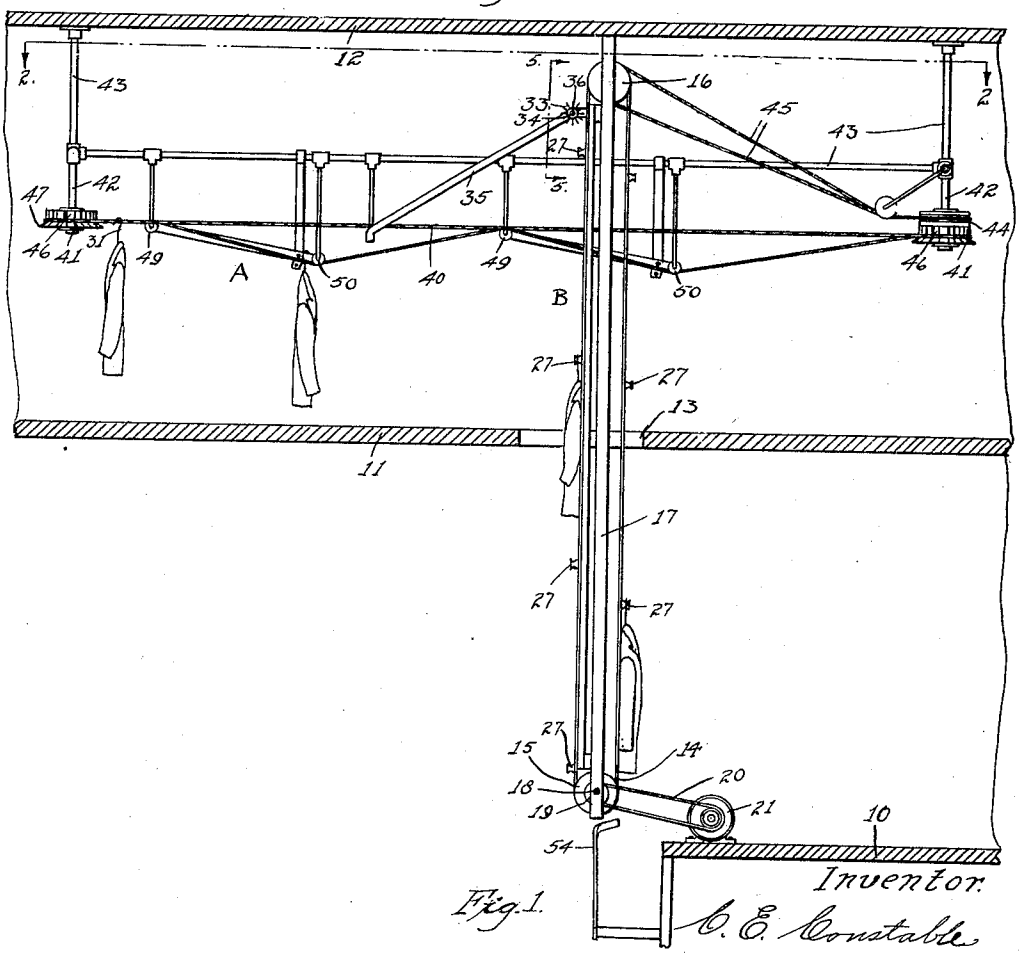


Fig. 1.

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GARMENT CONVEYER

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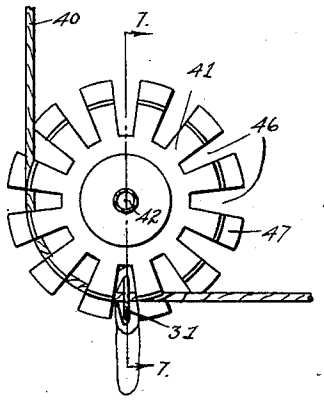


Fig. 3.

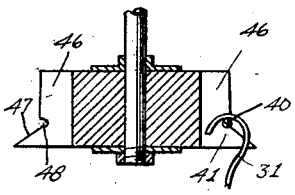


Fig. 7

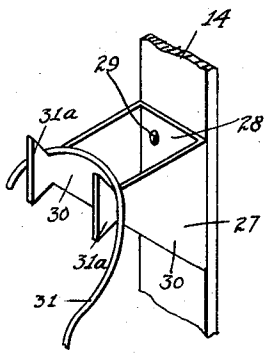


Fig. 6.

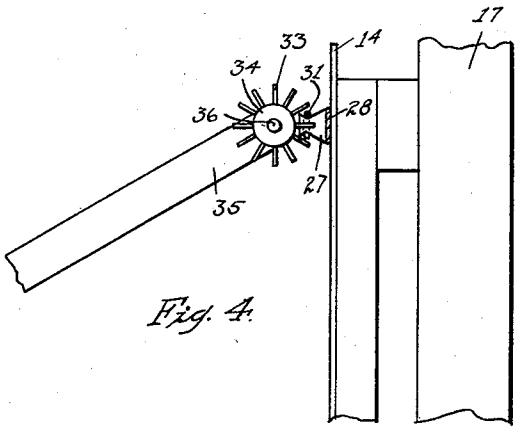


Fig. 4.

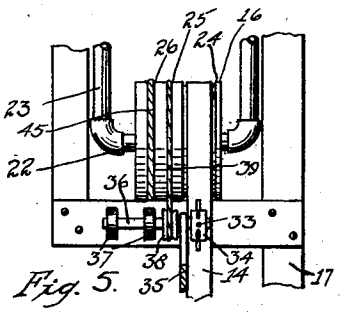


Fig. 5.

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UNITED STATES PATENT OFFICE

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GARMENT CONVEYER

Application filed September 25, 1928. Serial No. 308,237.

The object of my invention is to provide a garment conveyer of simple, durable and inexpensive construction, which is especially adapted to be used in dry cleaning establishments, so that garments may be received in a suitable office or room on the first floor of the building and then placed on a hanger and attached to a vertical elevating device and conveyed to a floor above, and thence delivered to a horizontally arranged conveyer whereby the garments may be distributed in a successive manner to the various divisions or departments.

A further object is to provide in a garment conveyer having a vertical conveyer and a horizontal conveyer, means whereby the garments may be automatically delivered from the vertical conveyer to the horizontal conveyer.

A further object is to provide in a garment conveyer having a horizontal drum mounted on vertically pivoted pulley devices adapted to support and carry garment hangers, improved means for automatically delivering the garments to various predetermined positions or stations.

A further object is to provide in a continuous conveyer device adapted to be operated in a horizontal plane and to carry hangers supported from said conveyer by hook devices, improved pulleys for mounting said conveyer, whereby the hook portions of the hangers may be permitted to travel around said pulleys.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of my improved conveyer, showing the manner in which it may be mounted in a two-story building, a portion of which is shown in cross-section.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a plan view of one of the pulleys used in connection with the horizontal conveyer.

Figure 4 is a side elevation of a portion of the mechanism for delivering the garment hangers from the vertical conveyer to the horizontal conveyer.

Figure 5 is a detail sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a perspective view of one of the hanger supporting brackets of the vertical conveyer.

Figure 7 is a detail sectional view taken on the line 7—7 of Figure 3.

The numeral 10 indicates the floor, 11 the upper floor, and 12 the ceiling of a building in which my device is mounted, the upper floor 11 being provided with an opening 13 through which the vertical conveyer 14 extends, the said conveyer being formed of a flat, flexible material, such as a belt or chain.

The conveyer 14 has its lower end mounted on the pulley 15 and its upper end on a pulley 16, said pulley 16 being rotatively mounted in a vertical frame 17. The pulley 15 is mounted on a shaft 18, which in turn is rotatively mounted in the frame 17. The shaft 18 is also provided with a pulley 19 having a belt 20 driven from a suitable power device, such as an electric motor 21.

The pulley 16 is rotatively mounted on a shaft 22 supported by hangers 23 from the ceiling 12 and rotated by means of the belt 14, which is supported in a suitable groove 24 in one end of the pulley 16, said pulley 16 also being provided with grooves 25 and 26.

The outer face of the conveyer 14 is provided with a series of brackets 27, each of which is formed preferably with a body portion 28 which is secured to the member 14 by suitable rivets or fastening devices 29, the body 28 having a pair of laterally projecting arms 30. The upper and lower edges of the arms 30 are inclined and terminate at points spaced from said conveyer, the outer ends terminating in inclined extending portions 31*a*. The brackets 27 are arranged to receive the hooks 31 of the garment hangers 32, the upper edges of the members 30 being inclined outwardly and downwardly to cause the hook members 31 to automatically assume a position by gravity adjacent to the members 31*a*, so that radial pins or spokes 33 of a wheel 34 may pass between the upwardly

moving members 30 and engage the hook 31 and lift the said hook from the members 30 as the said wheel is rotated, and deliver the same to an inclined bar 35, which has one end mounted adjacent to one end of the wheel 34 and between the paths of members 30.

In Figure 4 is illustrated the manner in which the sprocket 33 are mounted relative to the bracket. The said wheel 34 is mounted on a shaft 36 which is rotatively mounted in a suitable bearing 37 which is secured to the frame 17 in the manner clearly illustrated in Figure 5, the shaft 36 being provided with a grooved pulley 38 for receiving a belt 39 which is also mounted in the groove 25 of the pulley 16, the said pulley 16 providing means whereby the shaft 36 and the wheel 34 may be rotated in an anti-clockwise direction, as illustrated in Figure 4. The peripheral speed of the teeth 33 is higher than the linear speed of the belt 14, so that the hooks 31 placed on the brackets 27 may be automatically delivered from the said brackets to the inclined bar 35 by one of the pins 33 engaging the under surface of the hook 31 and lifting it from the brackets on which it is supported and permitting the same to rest on the periphery of the wheel 34 between the spokes 33, the upper edge of the bar 35 being substantially in alinement with the upper edge of said wheel so that the hook will be automatically delivered to the upper edge of said bar, and will then be delivered to the lower end of said bar by gravity, and to the horizontally arranged conveyer rope 40, which is operated adjacent to the lower end of said bar in the manner clearly illustrated in Figure 1, for the purposes hereinafter made clear.

The said conveyer rope 40 is designed to operate on pulley devices 41 which are supported on vertically arranged pivots 42 supported by a suitable framework 43 which is suspended from the ceiling 12. One of the pulleys 41 is provided with a groove 44 in which is mounted a driving cable 45 mounted in the groove 26 of the pulley 16. The cable 45 provides means whereby the rope conveyer 40 will be continuously operated in a substantially horizontal plane above the floor 11.

Each of the pulleys 41 is provided with a series of radial slots 46 to permit the hooks 31 of the hangers to enter said slots as the hooks travel around the pulleys, in the manner fairly illustrated in Figure 3. The lower end of each of the pulleys is provided with a tapered flange portion 47, to assist in supporting the rope 40 against downward movement, the pulleys being preferably arranged with an annular groove 48 for receiving the rope 40.

By this arrangement it will be seen that I have provided a conveyer for garments which is of comparatively simple construction and which is positive in its action, and which may be so constructed and arranged as to be adapted to a great variety of kinds of cleaning work and various department arrangements, whereby garments may be received in a room on the lower floor of the building and placed on the vertical conveyer and then automatically delivered to a predetermined station on the upper floor.

The arms of the brackets 27 have their upper and lower edges inclined so that the hooks 31 may be placed on said inclined edges, so that said brackets may be utilized to carry garments either upwardly or downwardly, thus providing means whereby a single conveyer may be utilized for both elevating and lowering the garments.

I claim as my invention:

1. In a device of the class described, a continuous and vertically arranged conveyer having a series of lateraly projecting bracket members, the upper edge of each of said bracket members being notched for receiving a hanger hook, a second continuous conveyer rope mounted to operate in a horizontal plane, having one of its runs adjacent to the vertical conveyer and below its upper end, an inclined bar having its upper end adjacent to the upper end of one of the runs of said vertical conveyer, and its lower end adjacent to one of the runs of the said horizontal conveyer, means for automatically delivering the hooks of said hangers from said brackets to said inclined bar, where they will be delivered by gravity to said horizontal conveyer, said means comprising a wheel rotatively mounted adjacent to the upper end of said inclined bar, having its periphery provided with radially projecting pins designed to operate adjacent to said brackets, and means for rotating said wheel with its periphery at a speed greater than the speed of said vertical conveyer, whereby the garment hanger hooks will be engaged by said pins and lifted from said bracket to the upper edge of said inclined bar.

2. In a device of the class described, a vertically arranged conveyer having a series of laterally projecting bracket members each being adapted to support a hanger hook transversely thereon an inclined bar having its upper end adjacent to one of the runs of said vertical conveyer, a wheel rotatively mounted adjacent to the upper end of said inclined bar having its periphery provided with radially projecting pins mounted to operate adjacent to the bar and said brackets, and means for driving said wheel at a peripheral speed greater than the speed of said vertical conveyer whereby the hanger hooks will be lifted from their corresponding brackets to the upper edge of said inclined bar.

3. In a device of the class described, a vertically arranged conveyer having a series of brackets, each having laterally and outwardly

projecting arms spaced apart, the upper and lower edges of said arms being inclined outwardly and toward each other and terminating in diverging portions, said arms being adapted to support a hanger hook transversely thereon, an inclined bar having its upper end adjacent to one of the runs of said vertical conveyer, a wheel rotatively mounted adjacent to the upper end of said inclined bar having its periphery provided with radially projecting pins mounted to operate between the said arms, and means for driving said wheel at a peripheral speed greater than the speed of said vertical conveyer.

4. In a device of the class described, a continuous and vertically arranged conveyer having a series of laterally extending bracket members for detachably supporting hanger hooks, a second continuous conveyer mounted to operate in a horizontal plane having one of its runs adjacent to the vertical conveyer and below its upper end, an inclined bar having its upper end adjacent to the upper end of one of the runs of said vertical conveyer and its lower end adjacent to one of the runs of said horizontal conveyer, rotating means having peripheral hook engaging members for automatically delivering the hooks of said hangers from said brackets to said inclined bar, whereby they will be delivered by gravity to said horizontal conveyer, and means for rotating said hook engaging members at a speed greater than the speed of said vertical conveyer.

5. The combination of a vertically arranged conveyer having a series of laterally projecting article engaging members, a horizontal conveyer, means for transferring articles from the laterally projecting members of said vertical conveyer to said horizontal conveyer, said means including an inclined bar and a rotatively mounted means for delivering the articles from said vertical conveyer to said inclined bar, said rotating means including article engaging members, and means for rotating the article engaging members of said rotating means at a speed greater than the speed of said vertical conveyer.

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