

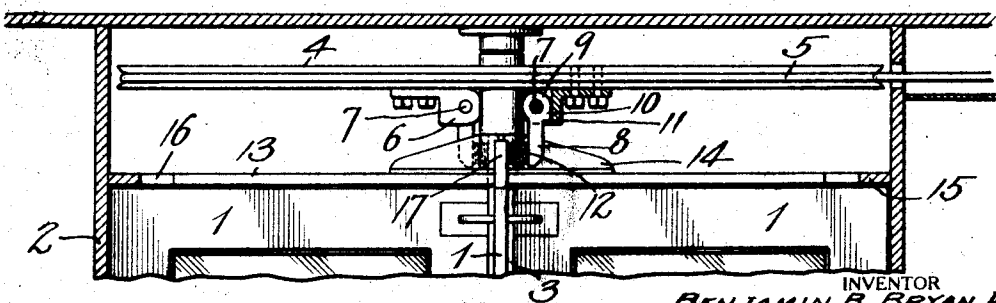
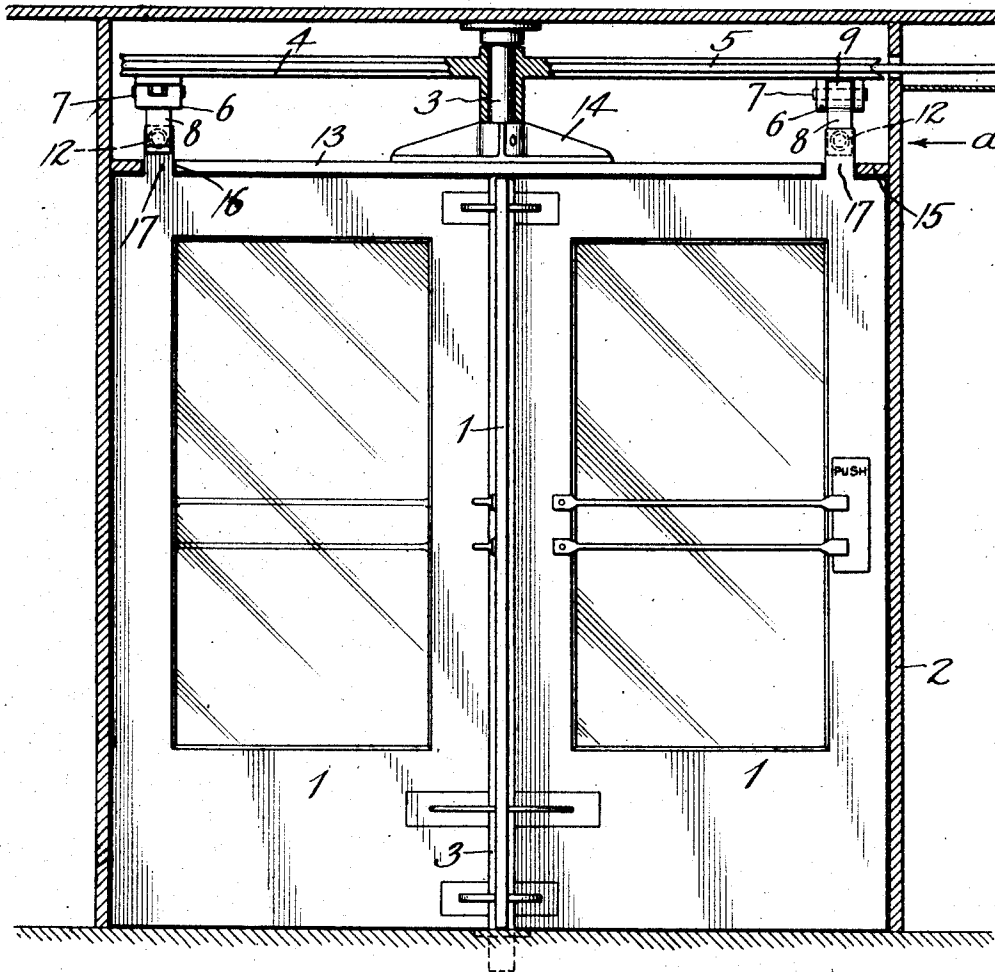
**April 12, 1927.**

**1,624,656**

**B. B. BRYAN, JR**  
MEANS FOR UTILIZING THE SURPLUS ENERGY EXERTED IN OPERATING  
REVOLVING DOORS, TURNSTILES, AND THE LIKE  
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*Fig. 1.*



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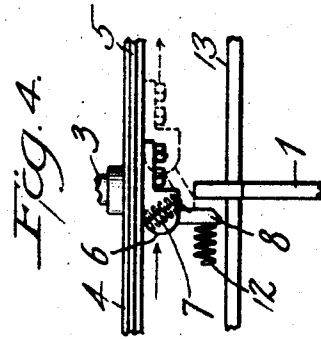
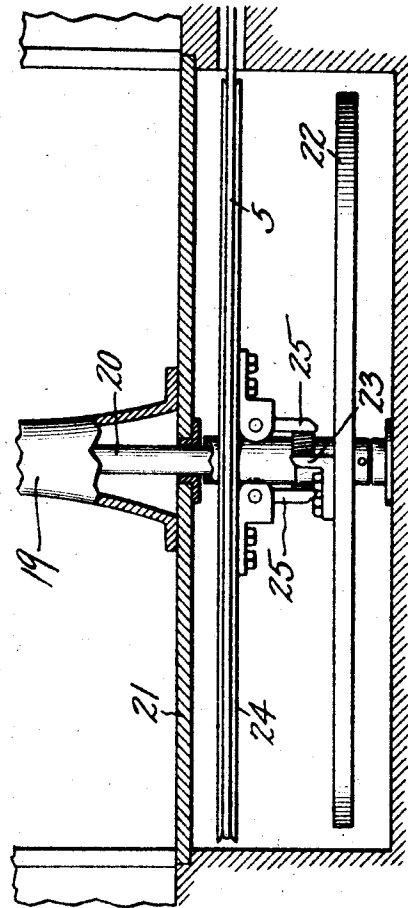
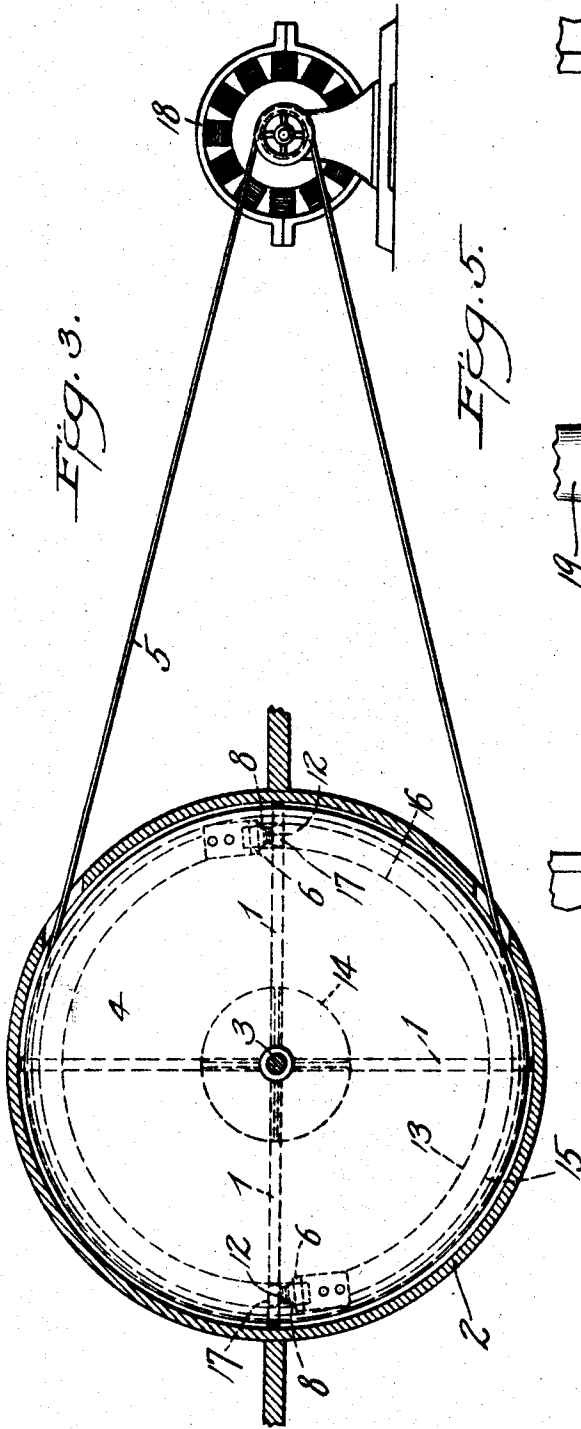
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## UNITED STATES PATENT OFFICE.

BENJAMIN B. BRYAN, JR., OF NEW YORK, N. Y.

MEANS FOR UTILIZING THE SURPLUS ENERGY EXERTED IN OPERATING REVOLVING DOORS, TURNSTILES, AND THE LIKE.

Application filed May 14, 1926. Serial No. 109,016.

This invention relates to means for utilizing the surplus energy which is expended by persons using revolving doors, turnstiles and the like, by causing that surplus energy to be applied to the generation of power for employment in useful manner.

From observation I have appreciated the fact that in large buildings equipped with revolving doors, as also at railway stations, ferry houses, amusement parks and other places whose entrances are guarded by turnstiles, a considerable amount of man power, in excess of that required, is communicated in the form of impulses to these devices for their rotation, and it has occurred to me that some at least of this surplus force be put into useful effect.

Therefore my invention consists in mounting a power wheel co-axially with relation to a revoluble element, such as a revolving door or turnstile, and providing a pawl on said power wheel for engagement by said revoluble element to communicate to the power wheel the impulses received by the revoluble element in the manual operation of the latter. Energy thus imparted to the power wheel is to be transmitted therefrom by suitable means either for the generation of electricity or otherwise for work purposes.

Other features and advantages of my invention will hereinafter appear.

In the drawing:—

Figure 1 is an elevation of a revolving door equipped with my improvement.

Fig. 2 is a vertical sectional view of the upper portion of Fig. 1, looking in the direction of arrow *a*.

Fig. 3 is a horizontal sectional view, of Fig. 1, showing means for translating power developed by the power wheel into electrical energy.

Fig. 4 is a detail view of the pawl device, showing the pivotal connection thereof which permits it to ride over the leaves of a revolving door when the power wheel moves faster than said door, and

Fig. 5 is a partial, sectional view showing the application of my improvement to a turnstile.

In Figures 1 to 4, I have illustrated my invention as employed with a revolving door, wherein said door is provided with the leaves 1 and rotates within a well or casing 2 about a shaft 3.

At 4 I have shown a power wheel revolvably mounted on shaft 3, above the door, said wheel having a power transmitting cable 5 engaging its periphery.

Since it is the purpose of my invention to cause the rotation of the door to give power impulses to wheel 4 I attach one or more pairs of lugs 6 to the underside of said wheel and fit a pintle 7 in said lugs, said pintle carrying a pendent pawl 8 that lies in the path of rotation of the leaves 1. The hub 9 of the pawl 8 is provided with a flat surface 10 at one side thereof, that coacts with a stop 11, secured to the wheel, to hold said pawl rigidly in advance of a leaf 1 when the door is rotated in one direction, and said hub 9 is free at its other side to permit the pawl to swing upwardly upon its pintle when engaging a leaf 1 with the wheel moving faster than the door or with the door turning oppositely to the rotation of the wheel. In the detail view of Fig. 4 the structure and relation of the pawl to a door leaf clearly appears.

The pawls 8 are shown as carrying helical springs 12 that project in advance thereof, to engage the leaves 1 and serve as cushions for easing the shock of impact between said pawls and leaves.

In order that the wheel and its pawls may be hidden from view I provide a false top for the well or casing 2 located just above the upper end of the revolving door, with annular clearance means permitting upper extensions of the leaves to extend there-through.

Thus, a disk 13, forming part of this false top, is provided with a central fitting 14 that is secured to the shaft 3, and spaced from said disk 13 is a concentric ledge 15, secured to the well or casing 2, the spacing between the disk and ledge providing an annular clearance 16. A detent 17, extended from the top of one or more of the leaves 1, is entered through clearance 16 and com-

prises that part of said leaves which is adapted to co-act with the pawls 8.

Hence, excepting for the clearance 16 the upper interior of the well or casing presents a normal appearance.

The cable 5 is shown in Fig. 3 as connected with an electric current generator 18 as an example of means for the utilization of the power developed and transmitted.

In Fig. 5 I have shown my improvement as applied to a turnstile, the base 19 thereof only appearing, and the shaft 20 thereof being extended below the floor 21, where it is provided with a fixed disk 22, carrying the detents 23. Also, journaled upon shaft 20 is a power wheel 24, carrying pawls 25 of like character to those previously described, and adapted to co-act with the detents 23, whereby, in the rotation of shaft 20 as the turnstile is operated, the manually applied impulses will be communicated to the power wheel.

Obviously the underground arrangement illustrated with respect to the turnstile may be equally well employed for the revolving door.

Appreciating the fact that revolving doors and turnstiles are not in use continuously, therefore I provide a power wheel to rotate through its own momentum, which is established and maintained by the succeeding impulses communicated thereto, in the manner described, as the revolving door or turnstile is manually operated by persons passing through the entrance guarded thereby.

For convenience, the comprehensive term "revolving barrier" is employed in the claims to designate the revolving doors, turnstiles and the like referred to in the foregoing description.

Variations within the spirit and scope

of my invention are equally comprehended by the foregoing disclosure.

I claim:

1. The combination with a revolving barrier, of a power wheel, a generator, means for communicating to said power wheel the impulses which are manually imparted to said barrier for its operation, and means of driving connection between said power wheel and generator.

2. The combination with a revolving barrier, of a power wheel mounted to rotate independently of said barrier, a generator, interengaging means respectively on said barrier and wheel to communicate rotative impulses from the barrier to the wheel, and means of driving connection between said wheel and generator.

3. The combination with a revolving barrier, of a power wheel mounted to rotate independently of said barrier, a generator, interengaging means respectively on said barrier and wheel to communicate rotative impulses from the barrier to the wheel, one of said interengaging means being adapted to pass the other when the wheel moves faster than the barrier, and means of driving connection between said wheel and generator.

4. The combination with a revolving barrier, of a power wheel mounted to rotate independently of said barrier, a generator, interengaging means respectively on said barrier and wheel to communicate rotative impulses from the barrier to the wheel, means for cushioning the impact between said interengaging means, and means of driving connection between said wheel and generator.

Executed this 12th day of May, 1926.

BENJAMIN B. BRYAN, JR.