To all whom it may concern:

Be it known that I, John Kostil, a citizen of the United States of America, residing at Ashley, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Gates or Doors, of which the following is a specification.

This invention relates to certain new and useful improvements in automatic gates or doors and is capable of being constructed either for use as a farm gate, or a building door such as used for garages, the same being automatic in its operation by vehicle wheels passing over trip devices for opening and closing the gates or doors.

The primary object of the invention has particular reference to an automatically operating door wherein a frame structure in the form of a platform has a plurality of trip devices associated therewith to be operated by vehicle wheels passing thereover for opening and closing the doors.

With the above and other objects in view, the invention consists of the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings, wherein like reference characters indicate corresponding parts throughout the several views, Figure 1 is a fragmentary perspective view of an automatic door opening and closing mechanism, a garage structure being illustrated by dotted lines with the doors illustrated in their closed position, and Figure 2 is a fragmentary perspective view, similar to Fig. 1, showing the doors in their open position.

Referring more in detail to the accompanying drawings, it being understood that the invention is as well adapted for gates as door structures, the same is illustrated in connection with a garage G illustrated by dotted lines and embodies a base frame or platform including longitudinal side rails 1 and end cross rails 2, a centrally positioned longitudinally extending rail 3 and cross braces 4 and 5 extending between the side and center rails as illustrated. The rail structure supports floor boards 6 and if desired, a concrete flooring or other material may be provided.

A door structure associated with the garage G is mounted upon the base frame and includes a rectangular door frame 7 having a pair of doors 8 and 9 hinged within the frame at upper ends upon the pins 10 while perpendicular bolts 11 journaled through the flooring 6 in alignment with the pins 10 are fixed at their upper ends to the adjacent corners of the doors 8 and 9. When the doors are in their closed position, the same may be so retained by a hasp and lock structure 12 of any type desired.

The operating mechanism for opening and closing the doors 8 and 9 includes four trip devices associated with the flooring 6, the trip devices 13 being positioned adjacent opposite ends of the base frame, while the trip devices 14 are positioned inwardly thereof, one at each side of the door frame 7 as illustrated. Each trip device is hinged as at 15 to the flooring 6. A longitudinally slidable rod 16 is arranged adjacent the center rail 3 and has pivotally connected thereto at spaced point adjacent the trip devices 13 and 14, one leg of a bell crank lever 17 that is pivotally mounted as at 18 to the rail 3, a double link arrangement 19 extending between each trip device and the other leg of the bell crank lever. The lower end of each bolt 11 extending beneath the flooring 6 carries a lever 20, the free end of one of said levers having a link 21 pivotally connected thereto, the other end of said link being pivotally connected as at 22 to the free end of the lever 24 that is pivotally mounted at 25 upon the cross brace 4, the lever 24 freely extending through the opening 26 provided in the rod 16. A similar link 27 is pivotally connected at one end to the free end of the other lever 20, and has its other end pivotally connected as at 28 to the free end of the lever 29 freely working through the opening 30 in the rod 16 with the end thereof pivoted as at 31 to the cross brace 5. From the above description of the device, it is believed the construction and operation thereof will at once be apparent, it being assumed that the doors 8 and 9 are in the closed positions shown in Fig. 1. The vehicle in passing over the platform will position both the front and rear wheels thereof forwardly of the adjacent end trip device 13 prior to the engagement between the front wheels of the vehicle and the adjacent trip device 14. Upon the lowering movement of the trip device 14, the bell crank levers 17 are moved on their pivotal mountings 18 for longitudinally shifting the rod 16, this movement operating the levers 24 and 29 and
through the link connections 21 and 27 with the levers 20 carried by the journaled bolts 11 will swing the doors 8 and 9 to their open positions as shown in Fig. 2 to be limited by the stop pins 32 shown in Fig. 1. During this movement, both trip devices 14 are lowered and the extreme trip devices 13 are elevated to their operative set positions. After the vehicle has passed through the door opening, and it being desired to close said doors, both the front and rear wheels of the vehicle will pass beyond the adjacent lowered trip device 14 prior to the engagement between the front wheels of the vehicle and the inner end trip device 13, the lowering movement of said trip device reversely shifting the rod 16 for closing the doors 8 and 9 and returning the trip devices 14 to their operative raised positions.

While there is herein shown and described the preferred embodiment of the present invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

What is claimed as new is:

1. In automatic door opening and closing mechanism, a base frame, hinged doors mounted thereon, trip devices carried by the base frame, operative connections between the trip devices and hinged doors, said operative connections including a rod longitudinally shiftable on the base frame, bell-crank levers, each positioned beneath a trip device pivotally mounted on the base frame and connected to said trip devices, rod levers hinged to the base frame and slidably associated with said rod, and operative connections between said levers and hinged doors.

2. In automatic door opening and closing mechanism, a base frame, hinged doors mounted thereon, trip devices carried by the base frame, operative connections between the trip devices and hinged doors, said operative connections including a rod longitudinally shiftable on the base frame, bell-crank levers, each positioned beneath a trip device, pivotally mounted on the base frame and connected to said trip devices, said rod having spaced openings therein, levers pivoted to the base frame and freely extending through the rod openings, and operative connections between said levers and hinged doors.

In testimony whereof I affix my signature.

JOHN KOSTIL.