F. D. BROWN & J. H. WERLING.

APPARATUS FOR OPENING AND CLOSING DOORS, GATES, &c.

APPLICATION FILED AUG. 27, 1913.

**1,126,380.** Patented Jan. 26, 1915.

Fig. 1.

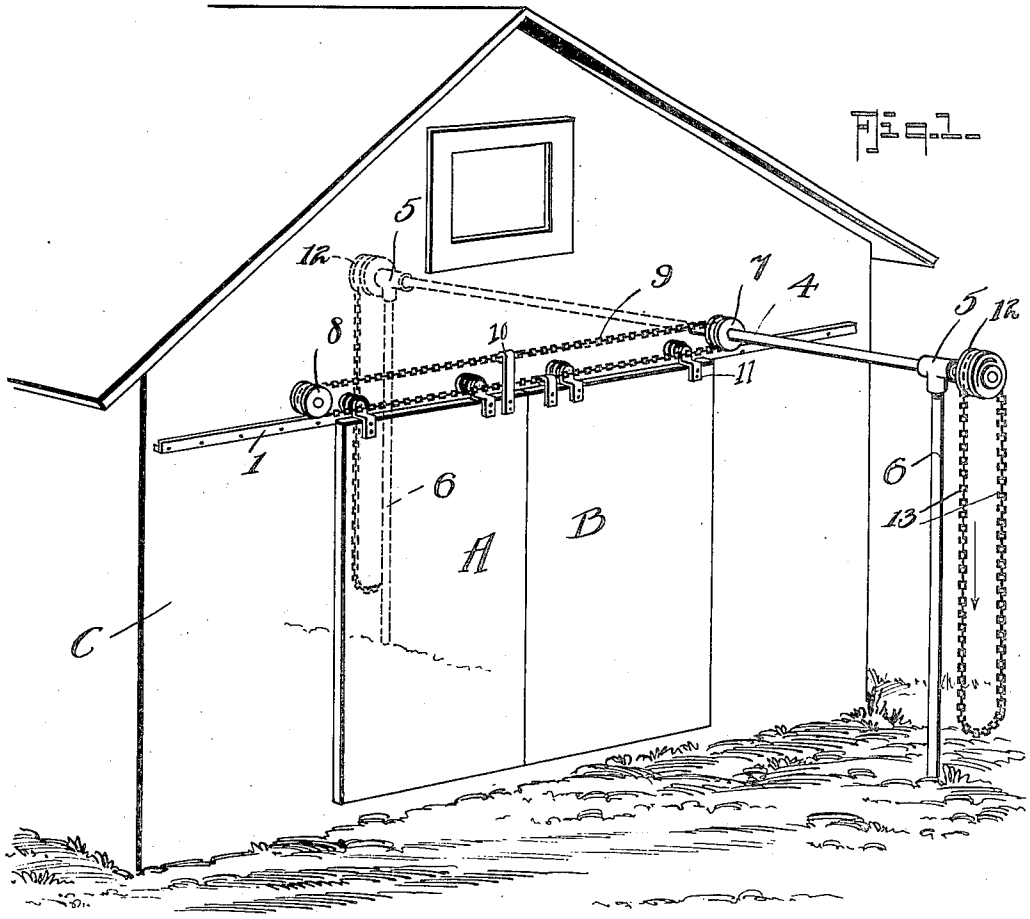



Fig. 2.

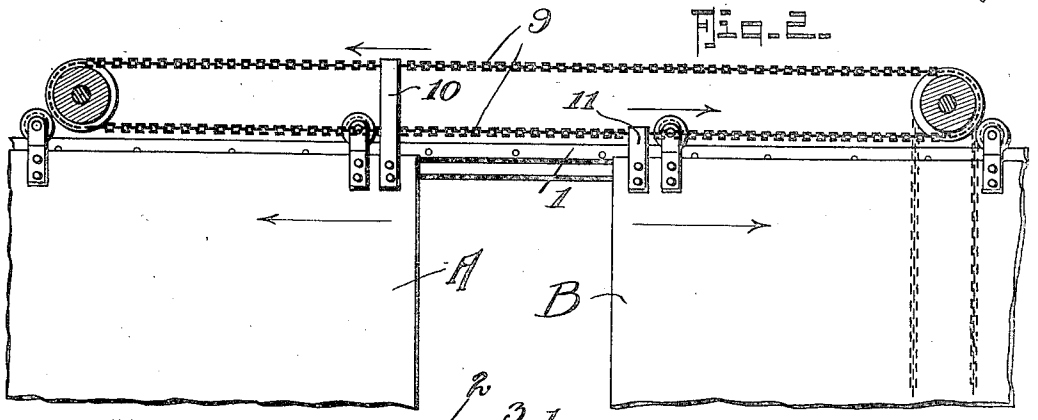
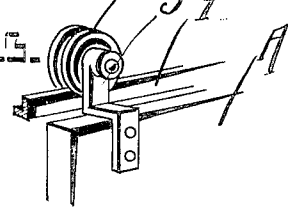



Fig. 3.




WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## APPARATUS FOR OPENING AND CLOSING DOORS, GATES, &c.

1,126,380. Specification of Letters Patent. Patented Jan. 26, 1915.

Application filed August 27, 1913. Serial No. 786,992.

*To all whom it may concern:*

Be it known that we, FRANK D. BROWN and JULIUS H. WERLING, citizens of the United States, both residing at Huntington, in the county of Huntington and State of Indiana, have invented certain new and useful Improvements in Apparatus for Opening and Closing Doors, Gates, &c.; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to apparatus for opening and closing doors, gates and the like, and consists in the arrangements and combinations of parts hereinafter disclosed and particularly set forth in the accompanying claims.

The invention has for its purpose to provide means for opening and closing doors and gates by persons riding in vehicles without requiring such persons to leave the vehicle, as is now customary.

A further purpose of the invention is to provide an arrangement wherein the door or gate may be opened or closed on either side thereof by a simple manually performed operation, and requiring but little strength to perform; and wherein the complete apparatus will be inexpensive to install and will not readily get out of order.

The invention as disclosed herein is designed especially for operating sliding doors or gates as distinct from the swinging or hinged type, and for which latter kind we have designed a special form of apparatus disclosed in our copending application bearing Serial No. 786,991, and executed of even date herewith.

The invention is shown by way of illustration in the accompanying drawings, wherein:

Figure 1 illustrates the application of the device for operating the doors of a garage or stable. Fig. 2 is a detail view of the door operating means *per se;* and Fig. 3 is a detail perspective view of the particular type of door hanger employed.

Referring to the construction in further detail and wherein like reference characters indicate corresponding parts in the views shown, A and B represent the doors of the garage or stable C which are mounted to slide on the track 1 through the medium of suitable hangers. Each of said hangers (see Fig. 3) comprises a grooved pulley 2 journaled on a bracket arm 3 secured to the door.

A shaft 4 is suitably journaled in bearing members 5 mounted upon the supports 6, that are fixed in the ground and disposed to either side of the doors A and B. A pulley 7 is fixedly mounted on the shaft 4 and is disposed in the plane of the doors A and B, and a second and similar pulley 8 is mounted on the garage or other structure and has its groove disposed in alinement with the groove of the pulley 7. The grooves of the pair of pulleys 7 and 8 are preferably notched to engage with the links of the endless chain 9, which is mounted to travel on said pulleys 7 and 8 for opening and closing doors (A and B), as will be understood.

The means connecting the doors A and B, to be operated by the chain 9, consists of an arm 10 mounted on the door A and secured to the upper length or section of the chain 9 whereby this door will be moved in the direction of travel of that section of the chain. A similar and shorter arm 11 is mounted on the door B, and is in like manner secured to the lower length or section of the chain 9 whereby to be moved as that portion of the chain travels. By this provision it will be clearly seen that as the chain 9 is operated in either direction the doors or gates A and B will be caused to travel in respectively opposite directions.

The shaft 4 is adapted to be manually operated by means of a pair of grooved and notched pulleys 12 mounted on said shaft at its respective ends, and each provided with a chain 13 for operating its respective pulley to rotate the shaft, as will be understood.

The provision of a shaft operating chain to either side of the doors enables the doors to be opened for passing through and closed when passed through without requiring the occupants of the vehicle to leave the same.

It is obvious that those skilled in the art may vary the details of construction and arrangement of parts without departing from the spirit of our invention, and therefore we do not wish to be limited to such features except as may be required by the claims.

We claim:

1. The combination with a fixed overhead track, of a pair of doors, rollers connected to said doors and adapted to run upon said track and to support said doors, pulleys jour-

naled above said track at each side of said doors, an endless chain mounted upon said pulleys and having its lower portion connected to one of said doors, and its upper portion connected to the other of said doors, a shaft having its axis perpendicular to the plane of said doors, said shaft passing through one of said pulleys and projecting in front and rear of said doors, supports substantially at each end of said shaft, and means for rotating said shaft in reverse directions, comprising a pulley at each end of said shaft and an endless chain reaching approximately to the ground mounted over each pulley adapted to turn same, substantially as described.

2. The combination with a fixed overhead track of a pair of doors, a plurality of hangers mounted on said doors, comprising horizontal portions mounted on the tops of said doors, downwardly extending portions secured to the front of said doors, and upstanding portions from the rear of said doors, said upstanding portions being provided with bearings, spindles journaled in said bearings, rollers mounted on said spindles, adapted to run along said track, a transverse shaft above and to one side and projecting in front and rear of said doors, supports substantially at the ends of said shaft, a pulley journaled to said shaft in alinement with said doors, a second pulley in alinement with said doors and mounted above and to the other side of said doors, an endless chain supported by said pulleys, connecting means between the upper portion of said endless chain and one of said doors, connecting means between the lower portion of said endless chain and the other of said doors, and means for rotating said shaft in reverse directions comprising pulleys journaled at each end of said shaft, and endless chains reaching aproximately to the ground, mounted on each of said pulleys and adapted to turn same, substantially as described.

In testimony whereof, we affix our signatures, in presence of two witnesses.

FRANK D. BROWN.
JULIUS H. WERLING.

Witnesses:
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P. M. MCCARTY.