April 13, 1926.

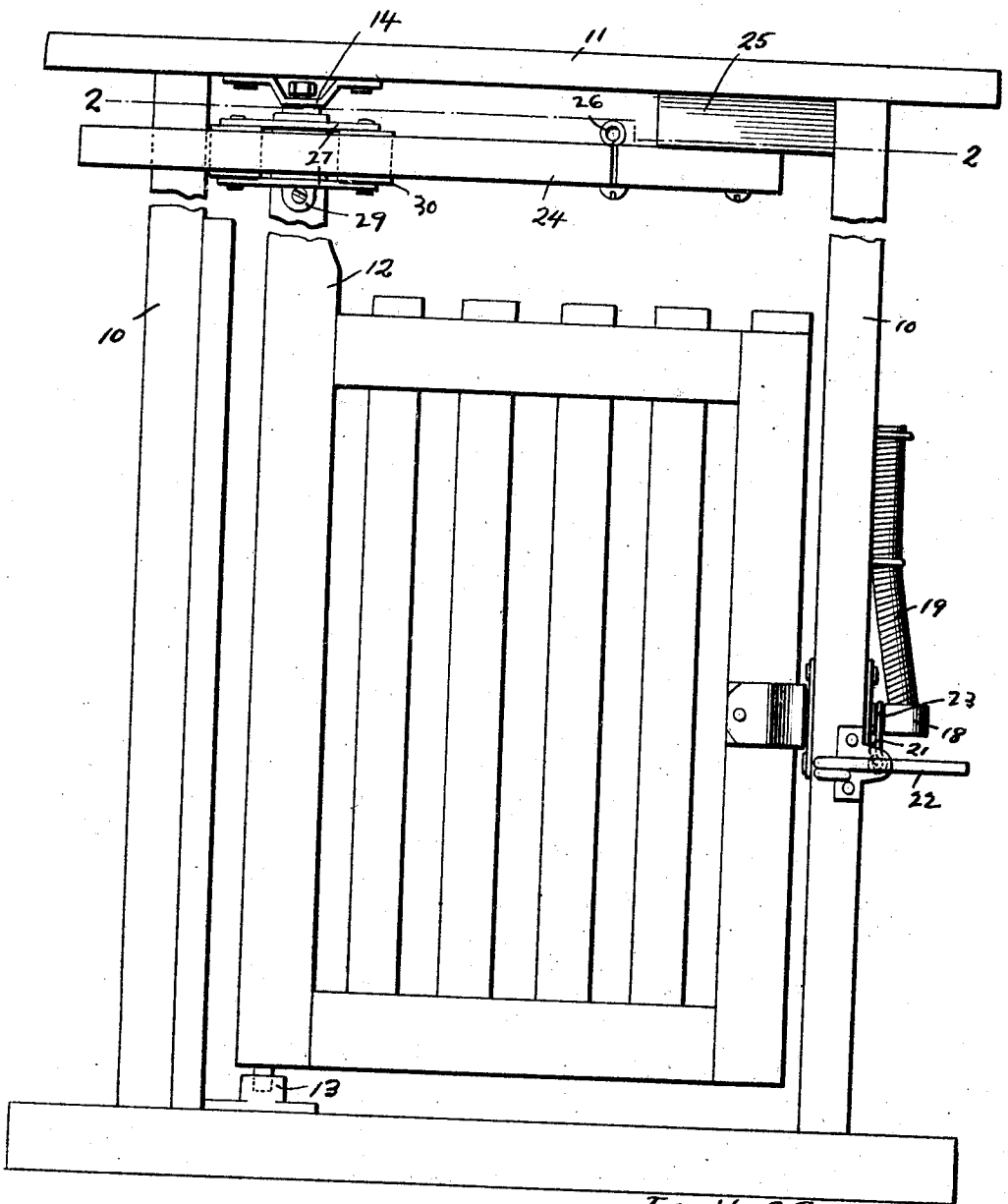
1,581,029

L. C. SMITH

DOOR AND GATE ATTACHMENT

Filed March 5, 1925 3 Sheets-Sheet 1

Fig. 1.



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April 13, 1926. 1,581,029

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DOOR AND GATE ATTACHMENT

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Fig. 2

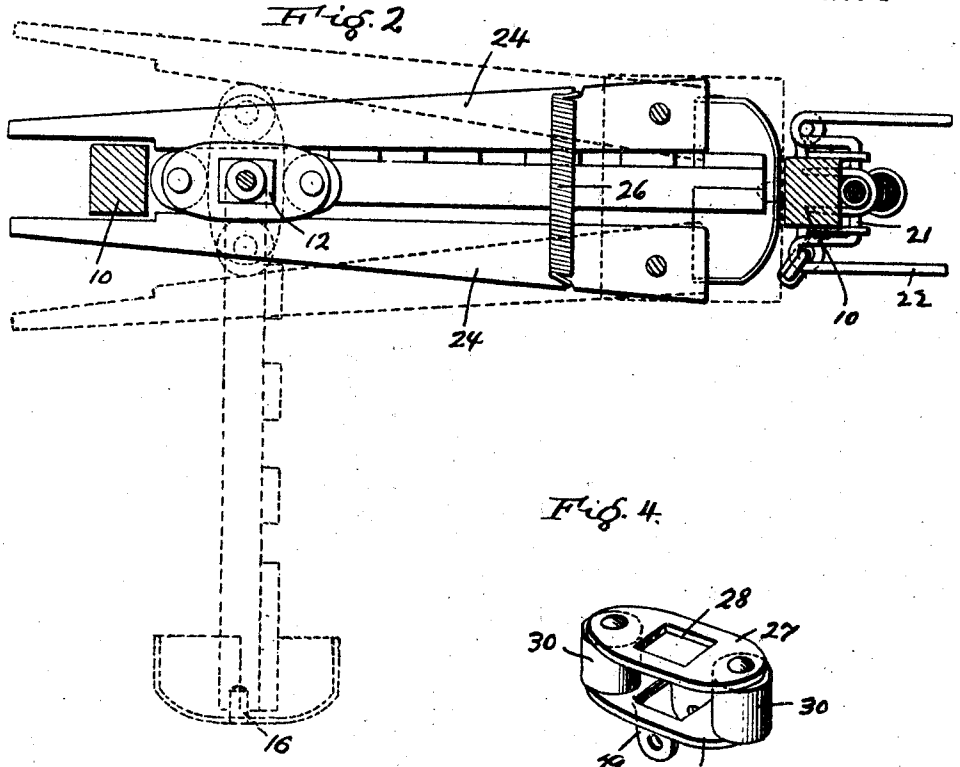
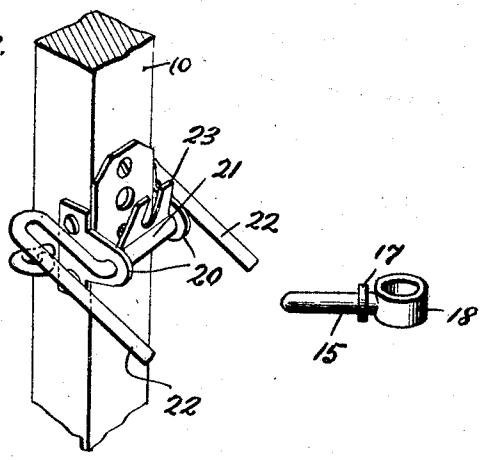


Fig. 4

Fig. 3.



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1,581,029

DOOR AND GATE ATTACHMENT

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Fig. 5.

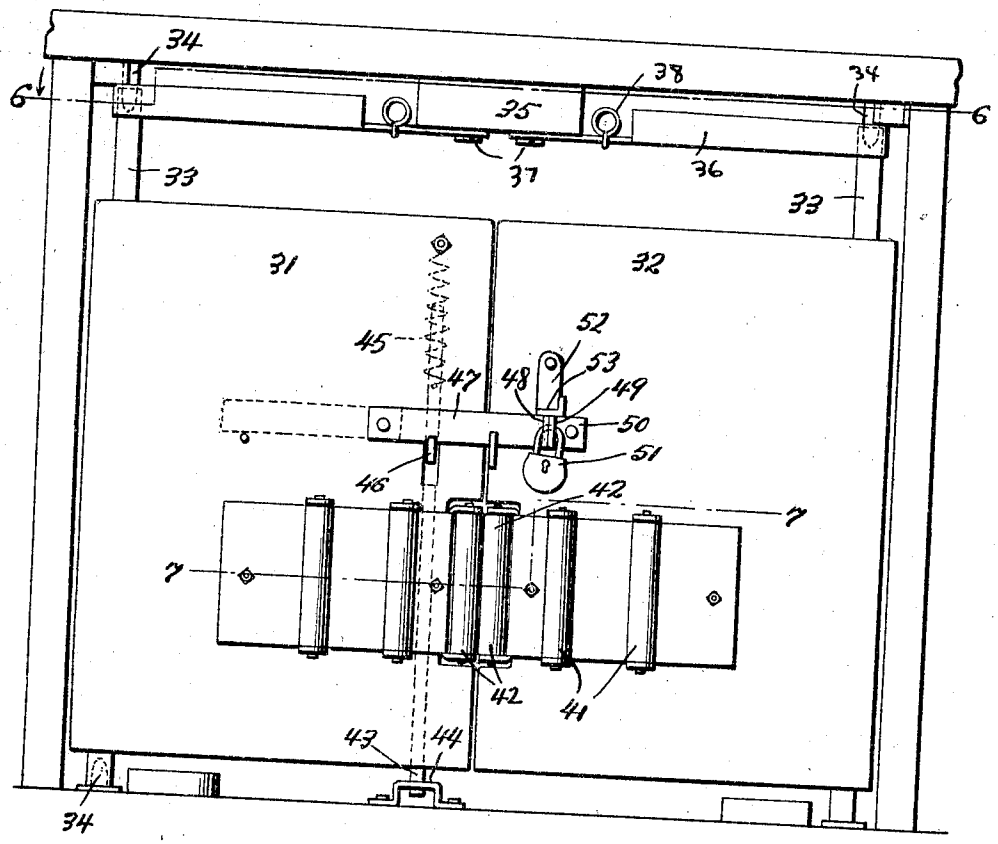


Fig. 6.

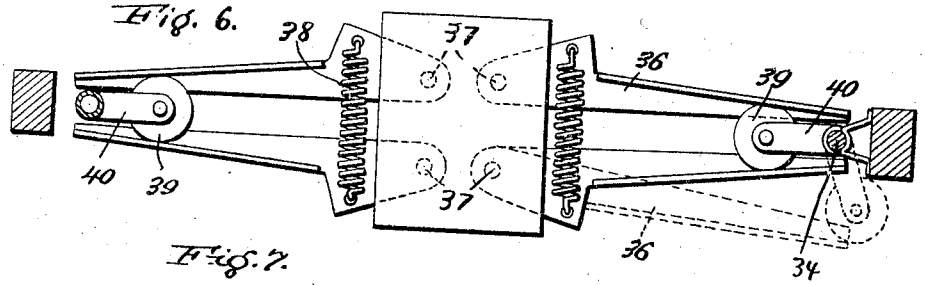
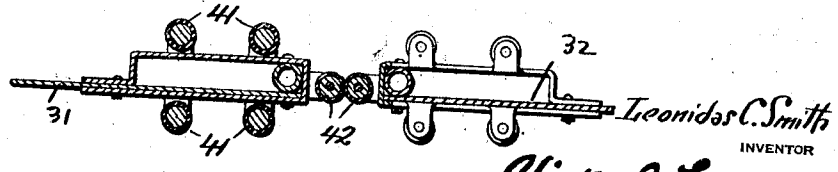


Fig. 7.



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Patented Apr. 13, 1926. 1,581,029

UNITED STATES PATENT OFFICE.

LEONIDAS C. SMITH, OF POLKTON, NORTH CAROLINA.

DOOR AND GATE ATTACHMENT.

Application filed March 5, 1925. Serial No. 13,324.

To all whom it may concern:

Be it known that I, LEONIDAS C. SMITH, a citizen of the United States, residing at Polkton, in the county of Anson and State of North Carolina, have invented new and useful Improvements in Door and Gate Attachments, of which the following is a specification.

This invention relates to pivoted closures, such as gates, doors and the like, and is in the nature of an attachment designed to hold the closure either in a fully opened position, or closed position, operating to return the closure to its closed position if not fully opened, thus preventing the closure at any time occupying a half opened or closed position.

In carrying out the invention, it is my purpose to employ the attachment with either single or double doors or closures, the attachment being designed to be used with each door, so that either door of a pair of doors can be independently controlled in the manner above stated.

More specifically stated, the invention comprehends the provision of a pair of spaced pivoted arms susceptible of movement toward and away from each other, and normally held closely related through the instrumentality of a resilient element, while carried by the said closure is a roller arranged to operate between said arms, so that when the closure is moved past center to its fully opened position, the arms cooperate with said roller to hold the gate opened; while on the other hand if the closure is not swung past center, the arms cooperate with said roller to automatically return the closure to its closed position.

The nature and advantages of the invention will be better understood when the following detailed description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:

Figure 1 is a view in elevation of a pivoted closure, showing the arrangement of the attachment forming the subject matter of the present invention.

Figure 2 is a sectional view taken on line 2—2 of Figure 1, showing the normal position of the parts by full lines, and the opened position of the closure and said arms by dotted lines.

Figure 3 is a fragmentary perspective view of a gate post and keeper.

Figure 4 is a perspective view of a pair of rollers and their support, which are employed as one embodiment of the invention.

Figure 5 is a front elevation showing the invention used with a pair of swinging doors, in contra-distinction to a single door or closure as illustrated in Figure 1.

Figure 6 is a sectional view on line 6—6 of Figure 5.

Figure 7 is a sectional view on line 7—7 of Figure 5.

Before entering into a detailed description of what is illustrated in the drawings, I desire to have it understood that the gist of the present invention resides in the means employed for preventing a pivoted closure, from at any time, occupying a half opened or a half closed position, independently of where the closure is used, or whether one or more of such doors or closures are used together. In other words, where a pair of such doors or the like are used, the invention is merely duplicated, the same construction of means being used in connection with each closure.

In Figures 1 to 4 inclusive, I have illustrated the invention with a single closure, which in this instance represents a gate, although it may be used with a door or the like. In these figures, 10 represents a pair of spaced standards forming part of a gate supporting structure, and which standards are connected by a transverse member 11. Mounted on this structure for swinging movement is the gate which is of the ordinary construction including the post 12 which is pivoted in suitable bearings at the bottom and top of the gate supporting structure as shown. The bearing for the lower end of the post is indicated at 13, while the bearing for the upper end of the post is indicated at 14. The gate is normally held in its closed position by any suitable latch mechanism, but I preferably employ a latch bolt 15 which is mounted for sliding movement through one of the standards 10 and adapted to be received by an opening 16 formed in the adjacent gate post as clearly shown in the drawings. The bolt 15 is provided with a collar 17 and a ring 18, the latter receiving the adjacent end of a resili-

ent element 19 which is mounted upon the adjacent standard 10 of the supporting structure. The element 19 is preferably in the nature of a coiled spring which is tensioned to normally hold the bolt 15 in its active position. Projecting from the standard 10 with which the bolt is associated, is a pair of apertured lugs 20, and journalled in this lug is a substantially U-shaped element 21, the parallel limbs 22 of which are of sufficient length to permit anyone to move the U-shaped member pivotally Rising from the intermediate portion of the U-shaped member is a yoke 23 which embraces the bolt 15 between the collar 17 and the ring 18, so that when the U-shaped member is tilted, the bolt 15 is retracted to release the gate, so that it may be opened. Furthermore, the gate can be opened from either side of the supporting structure, that is to say the gate can be swung inwardly or outwardly to an opened position.

The attachment above referred to includes a pair of spaced arms 24 which have their corresponding ends pivoted beneath a block 25 secured to the underside of the cross member 11 of the supporting structure. These arms are normally held parallel, and are of a length to pass beyond the gate post 12 and the adjacent standard 10. As shown in Figure 2, the free ends of the arms 24 are reduced to allow the arms to move close toward the standard 10 in the normal position of the parts. These arms are influenced by a coiled spring 26 which is arranged transversely of the arms and terminally connected thereto in any suitable manner as shown. The spring serves to hold the arms normally in the position illustrated by full lines in Figure 2.

The gate post 12 projects an appreciable distance above the top of the gate, and is slightly reduced to accommodate the other part of the attachment clearly shown in Figure 5. This part of the attachment may be varied in construction, and use made of a single roller, instead of a pair of rollers without departing from the spirit of the invention. However, as is specifically illustrated, this part of the attachment includes a pair of spaced plates 27 which are arranged in superimposed relation, the plates having aligned openings 28 to receive the reduced end portion of the gate post 12. Depending from the lowermost plate 27 are spaced apertured lugs 29 by means of which the attachment is secured to the gate post. Journalled between the plates 27 is a pair of spaced rollers 30 which are arranged between the arms 24, always contacting said arms, and cooperating therewith to prevent the gate from assuming a half opened or half closed position. In other words, when the gate is opened, if it is swung to a fully opened position or past center, the rollers 30 occupy the position shown by dotted lines in Figure 2, wherein it will be noted that the arms 24 under the tension of the spring 26 engage the rollers in the manner to hold the gate in said position. However, if the gate is only partly opened, just as soon as the gate is released, the arms 24 under the influence of the spring 26 automatically returns the gate to its closed position. Consequently, by reason of the attachment, the gate must either occupy one of two positions, that is a fully opened position or a closed position.

In Figures 5 to 7 inclusive, I have shown the invention used with a pair of pivoted doors indicated at 31 and 32 respectively. The doors are mounted for swinging movement in the door frame, substantially the same as the gate above described, each door including a pivot 33 journalled in suitable bearings 34 at the top and bottom of the door frame. Secured beneath the top portion of the door frame is a block 35 upon which is pivoted the spaced pairs of arms, the arms of each pair being indicated at 36. These arms are pivoted as at 37, and it will be noted upon inspection of Figure 6 that one pair of these arms is used in connection with each door, and that the respective pairs of arms projecting from the block 35 in opposite directions. The arms of each pair are connected together by a transversely disposed spring 38 which normally holds the arms parallel and closely related. These arms may be of any suitable cross sectional configuration, but are designed to cooperate with a roller 39 carried by each door and arranged to operate between the adjacent pair of arms. Each roller 39 is journalled on a bracket 40 which is supported upon the pivot 33 for the adjacent door, projecting at a right angle therefrom as clearly shown. In this connection it might be stated, that a single roller mounted in this manner can be used with the construction shown in Figures 1 to 4, or that the double rollers shown in Figure 4 may be used with the double doors, without departing from the spirit of the invention, as the operation in each instance is exactly the same. However by employing a single roller, in contra-distinction to the structure shown in Figure 4, the gate or door is allowed to be arranged closer to the adjacent standard or side of the door frame as the case may be. As just stated, the invention when used in connection with double doors operates in the same manner as herein above described with the structures shown in Figures 1 to 4, inasmuch as each door shown in Figure 5 can be controlled by the attachment to prevent it from remaining half opened, independently of the other door. However, the invention as shown in Figure 5 is primarily intended for use with the garage doors, and it is particularly ad-

vantageous in this capacity, inasmuch as it allows the operator of an automobile to enter the garage without leaving his car to open the doors, and without fully opening the doors by the machine, so that the said doors will automatically return to their closed positions. The doors may be left unlatched in the day time, so that the owner of car may drive into the garage without leaving his machine to open the doors when desired. Inasmuch as the doors are mounted to swing in either direction, they cannot be injured if so moved by strong winds or the like while unlatched.

In view of these facts, I provide each door with a series of spaced parallel rollers each of which is covered with rubber or other soft material, so that the doors of the garage may be opened in the manner above stated without scratching or otherwise injuring the vehicle. These rollers are arranged vertically on the opposite sides of each door and indicated at 41, while journalled on the meeting edges of the respective doors are similar rollers 42 which are also covered with rubber or other soft material for the same purpose. The meeting edge of each door is slightly cut away to accommodate the adjacent roller 42, and it might here be stated that all of the above mentioned rollers may be made in any desired size for the purpose for which they are intended. Furthermore the rollers are located on said doors so that when it is desired to enter or leave the garage, the front or rear bumper of the machine initially contacts said rollers, moving the doors in the proper direction to open the same. As the machine passes through the door opening, the rollers glide along the fenders and running boards of the machine, and in this way the doors are opened to allow the car to pass without damaging the same.

In the invention shown in Figures 5 to 7 inclusive, I provide a combined day latch and lock for said doors, which includes a sliding bolt 43 which is arranged vertically on the door 31, and adapted to be projected beneath the lower edges thereof to be received by a suitable keeper 44. Associated with this bolt is a coiled spring 45 which normally holds the bolt in an elevated inactive position, although carried by the bolt and projecting through a slot in said door is a lug or extension 46 for a purpose to be presently described. Pivoted on the door 31 is an arm 47 which is adapted to bridge the meeting edges of the doors in its active position, said arm being provided with an offset apertured terminal 48 adapted to be arranged in confronting relation to the offset apertured extremity 49 of a keeper 50 secured to the door 32. When it is desired to lock the doors, the parts are arranged in the manner just described, and a suitable padlock 51 utilized to connect the arm 47 and the keeper 50. The arm 47 however, is so mounted with relation to the lug 46 carried by the locking bolt 43, that when the arm is swung to its active position it engages said lug 46, and depresses the bolt 43 into its active association with the keeper 44 against the tension of the spring 45. By reason of this construction, it is manifest that when the arm 47 is released, from the lock 51 or the pivoted lever 52, the said arm is automatically swung to an inactive position under the influence of the spring 45, which at the same time elevates the bolt 43. The lever 52 is pivoted upon the door 32 immediately above the keeper 50, and is formed with an offset extremity 53, which is adapted to engage the keeper and the offset extremity 48 of the arm 47 when the parts are arranged in the manner shown in Figure 5. Consequently this lever 52 is employed to hold the bolt 43 in its active position without the use of a padlock 52, and forms part of the day latch above referred to. Manifestly, by swinging the lever 52 to a horizontal or inactive position, the arm 47 is released so that it may be swung to an inactive position in the manner above described.

While it is believed that from the foregoing description, the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

Having thus described the invention, I claim:

The combination with a pivoted closure, of means for holding the same fully opened, or returning it from a partly opened to a closed position, said means including a pair of pivoted arms arranged horizontally above the closure, resilient means connecting said arms and normally holding the latter parallel, a bracket including spaced superimposed plates of elliptical contour, and having alined square openings centrally thereof to accommodate the pivot of said closure, depending lugs projecting from the lowermost plate and adapted to be secured to said pivot, and rollers journaled between said plates and projecting beyond the ends thereof, and arranged to operate between said arms for the purpose specified.

In testimony whereof I affix my signature.

LEONIDAS C. SMITH.