March 8, 1932. J. FANTACI 1,848,942

CLOSURE OPERATING MEANS

Filed Sept. 22, 1930

Fig. 1.

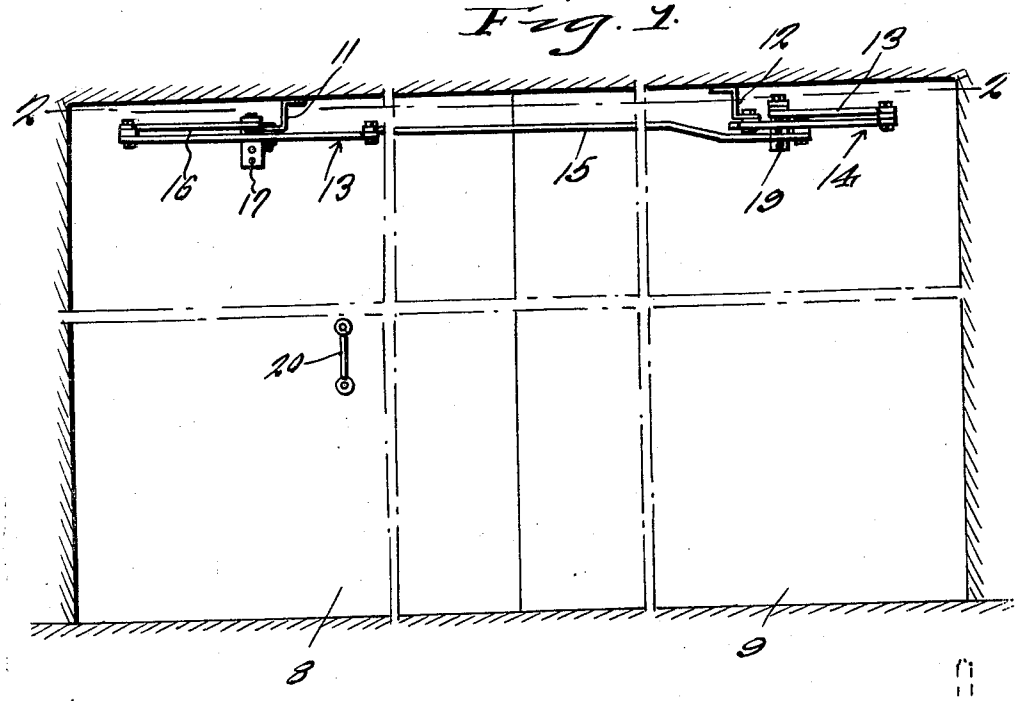
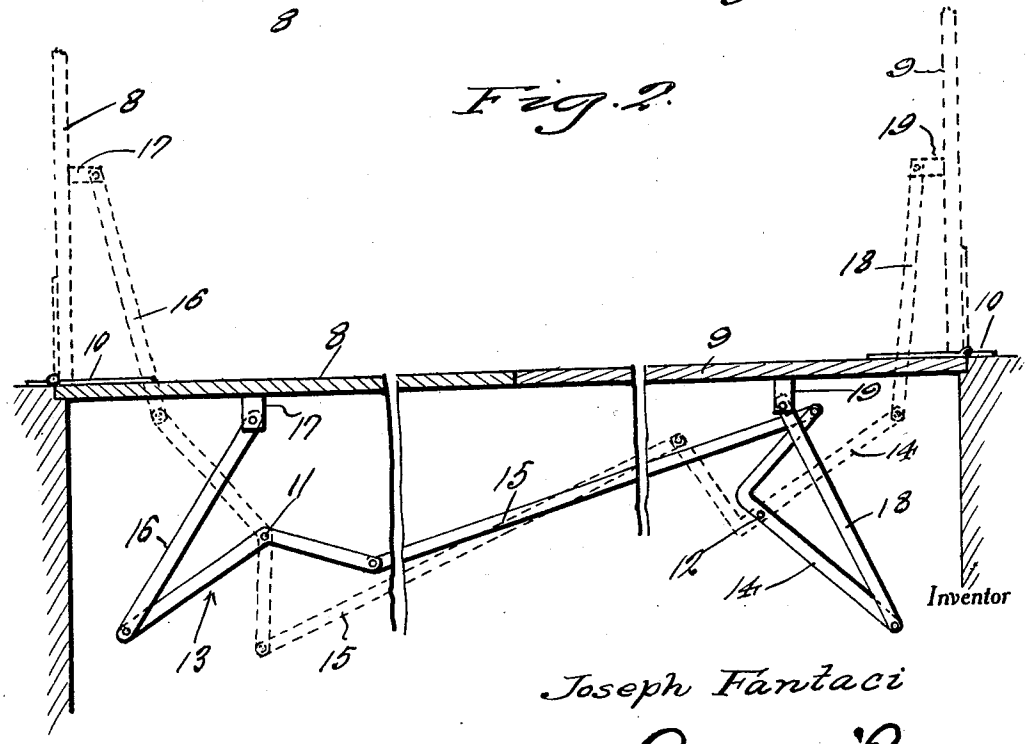


Fig. 2.



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CLOSURE OPERATING MEANS

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This invention relates to an improved structure for operating closures, such as, for instance garage doors.

A primary part of the invention is founded upon a new and improved arrangement of links and levers, forming a practicable and dependable means for mechanically opening a pair of garage doors in unison.

The primary object, of the invention is to generally improve upon prior art closure operators by providing a structure which is quite simple, positive in action, and susceptible of better fulfilling the requirements of an invention of this general classification.

Other structural features and advantages will become more readily apparent from the following description and drawings.

In the drawings:

Figure 1 is an inside view of a garage showing the general assembly of parts.

Figure 2 is a horizontal section on the line 2—2 of Figure 2.

In the drawings, the garage doors are distinguished by the numerals 8 and 9 respectively. These are of the usual horizontal swinging type and mounted on hinges 10. The numerals 11 and 12 designate supporting brackets attached to the ceiling within the vicinity of the doors.

Pivotally supported from the bracket 11 is a bell crank 13, and supported from the remaining bracket 12 is a similar bell crank 14. There is a slight difference in these bell cranks when they are supported in reversed relationship. The bell crank 13 has its short arm at approximately an acute angle with the long arm. The short arm of the bell crank 13 is at an obtuse angle to the long arm and these bell cranks are connected together, through the medium of a tie rod 15 so that they are simultaneously actuated. The numeral 16 designates a push pull link connected to the long arm of the bell crank 13 and also pivotally connected to a bracket 17 on the upper central portion of the door 8. The numeral 18 designates a similar push pull link pivotally connected to the bell crank 14 and pivotally connected at its opposite end to a bracket 19 on the door 9. When the doors are closed, the links 16 and 18 occupy the position shown, the link 18 intersecting the joint between the rod 15 and the short arm of the bell crank 14. By catching hold of the handle 20, the doors can be closed from the open dotted line position in Figure 2, to occupy the full line position shown in the same figure. By releasing the retaining means and pushing the doors outwardly, it is obvious that the linkage structure comes into play for moving the doors simultaneously or in unison.

In fact, the system is such as to prevent binding and to insure smooth operation of the doors 8 and 9 when moving either to open or closed position. This is partially brought about by the centralized outward stress of the links 16 and 18 on the properly placed brackets 17 and 19.

What is claimed is:

In combination, a pair of hingedly mounted horizontally swingable complemental doors, a pair of longitudinally spaced relatively fixed supporting brackets, a bell crank pivotally mounted in a horizontal plane at a point intermediate its ends on one bracket and having its short arm directed outwardly when the doors are closed, said short arm being at an approximate acute angle with respect to the long arm, a second bell crank pivotally supported in a horizontal plane intermediate its ends on the remaining bracket, the short arm thereof being at an obtuse angle with respect to the adjacent long arm and being directed laterally inwardly with respect to the door, a tie rod connecting said short arms together, brackets attached to the upper central portions of the doors, a pair of individual push pull links pivotally connected at their outer ends to said door brackets and pivotally connected at their inner ends to the free end portions of the long arms of the aforesaid bell cranks.

In testimony whereof I affix my signature.

JOSEPH FANTACI.