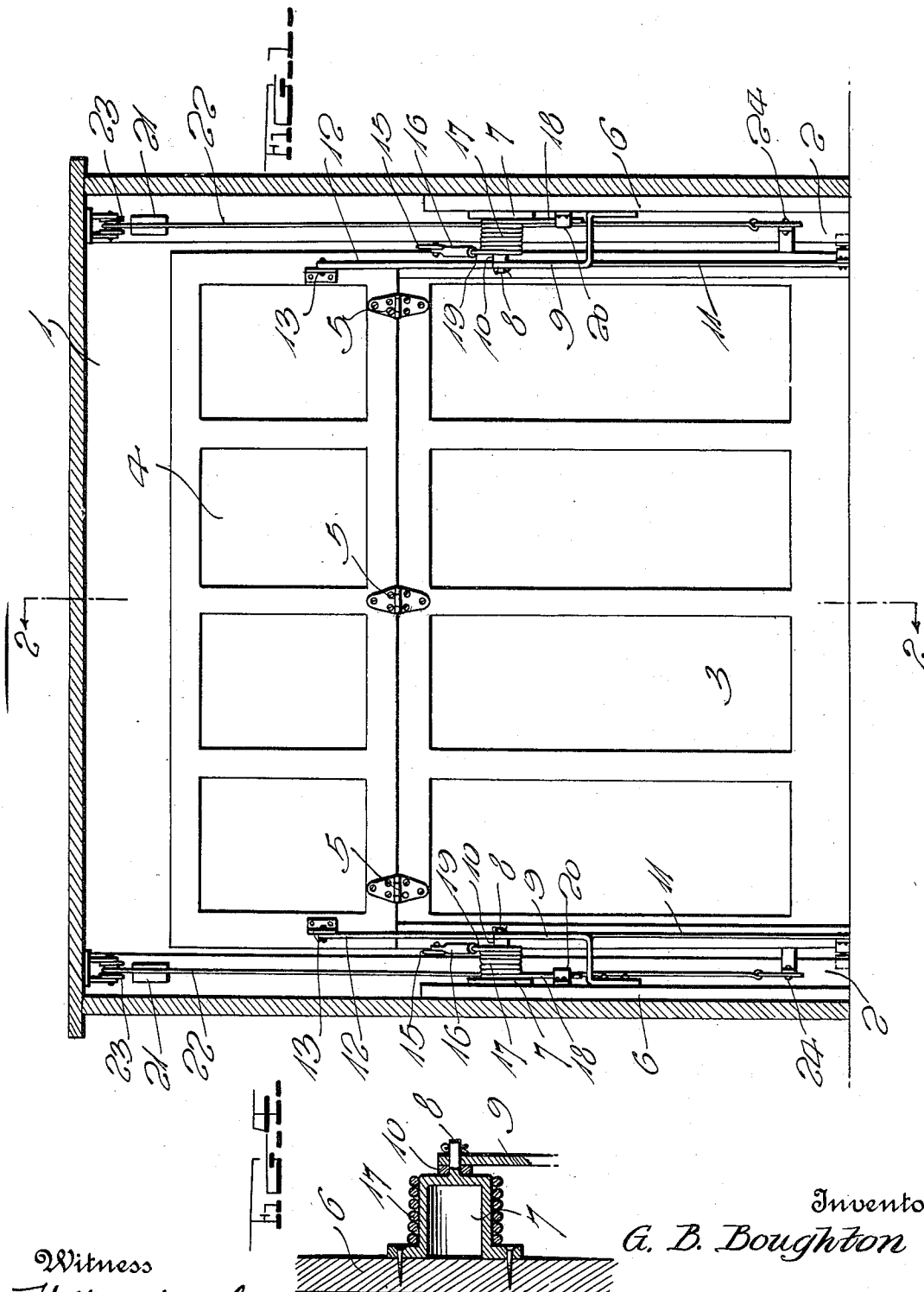


Feb. 27, 1923.

1,447,060.

G. B. BOUGHTON.
GARAGE DOOR AND OPERATING MEANS THEREFOR.
FILED SEPT. 6, 1921.

2 SHEETS—SHEET 1.



Witness
H. Woodard

Inventor
G. B. Boughton

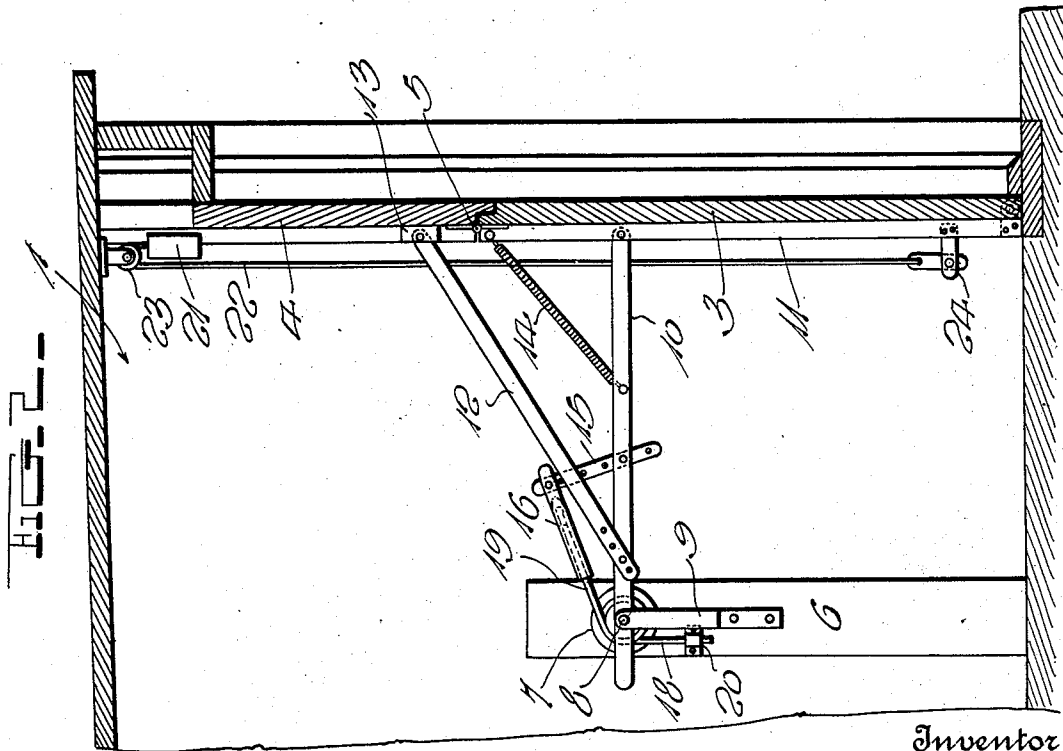
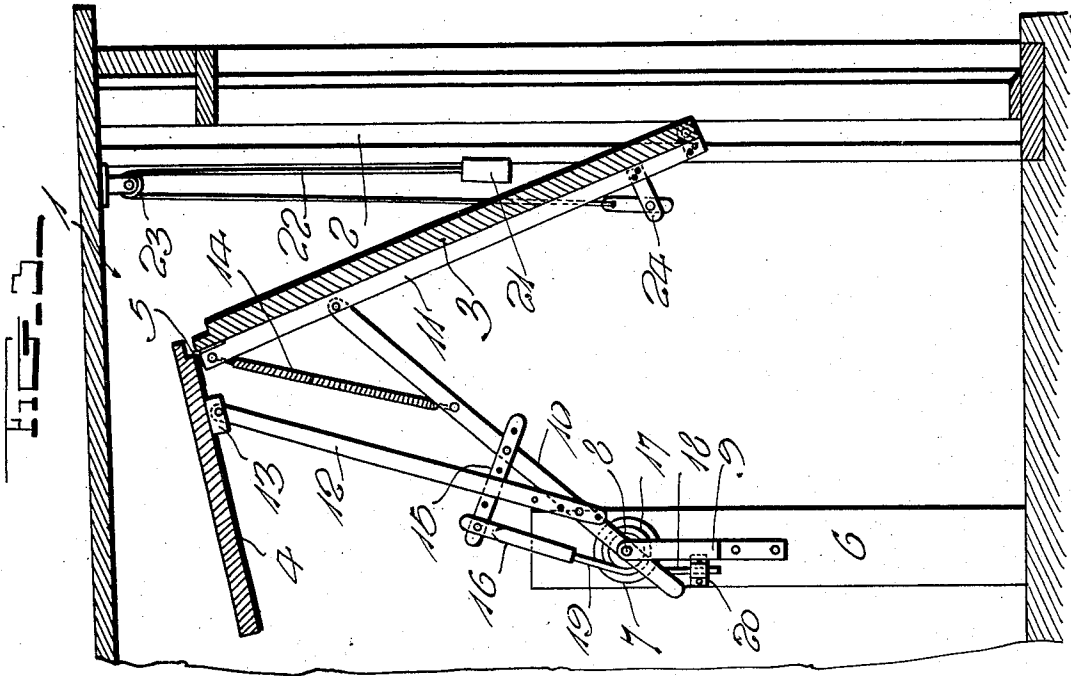
By *A. B. Wilson*
Attorneys

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE B. BOUGHTON, OF ST. LOUIS, MISSOURI.

GARAGE DOOR AND OPERATING MEANS THEREFOR.

Application filed September 6, 1921. Serial No. 498,835.

To all whom it may concern:

Be it known that I, GEORGE B. BOUGHTON, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Garage Doors and Operating Means Therefor; and I do 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.

This invention relates to an improved construction in garage doors and means for operating the doors and one object of the invention is to provide improved means for swinging the door upwardly and inwardly to a raised or open position and to provide a construction whereby springs may be provided to assist in the movement of the door to the raised position.

Another object of the invention is to provide an improved arrangement of pivotally connected bars or strips which serve to guide the sections of the door in their upward movement to an open position and also serve to support the door in the raised position.

Another object of the invention is to so construct this device that springs which serve to assist in swinging the door to the raised position may be mounted upon drums with which certain of the bars are pivotally connected.

This invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a view looking at the inner face of the door with the door closed.

Figure 2 is a vertical sectional view taken along the line 2—2 of Fig. 1.

Figure 3 is a view similar to Fig. 2 showing the door moved partially into an open position.

Figure 4 is a sectional view through the spring carrying drum.

The door is to be used in connection with a garage 1 having a doorway provided with tracks 2 at its sides and adapted to receive the rollers at the lower ends of the main door section 3. This main door section has its upper end hingedly connected with the upper or auxiliary door section 4 by hinges 5 so that the door sections may be swung out of alinement with each other and then again into alinement when moving upwardly from a closed position in which it extends vertically to an open position in which it will extend horizontally a short distance beneath the roof of the garage as shown in my prior Patent No. 1,341,041.

Standards 6 are positioned against the sides of the garage and each carries a drum 7 which is provided with a pin extension 8 which passes through an opening formed in the upper end of the bracket 9, the brackets serving to brace the drum. Main bars 10 are pivotally connected with the strips 11 which are secured against the inner face of the main door section 3 and these bars 10 are loosely mounted upon the pin extensions 8 of the drums. Links or bars 12 are pivotally connected with brackets 13 secured to the upper or auxiliary door section and these links or bars 12 are provided with a plurality of openings at their inner ends so that these links may be pivotally connected with the bars 10 at a desired angle. By providing this construction, the door sections may have pivotal movement as they swing upwardly and during this movement, the links and bars 10 may swing towards and away from each other. Springs 14 are provided so that the door section 3 will normally extend at right angles to the bar 10 and will be returned to this position, when the door is in either the raised or lowered position. When the door section 3 is in the position at right angles to the bars 10, the section 4 of the door will be held in alinement with the section 3 but will move into angular relation to the same when the door section 3 is out of a position at right angles to the bars 10. Arms 15 are pivotally connected with the bars 10 between the springs 14 and links 12 and extend above these links or bars 12 and have their upper ends loosely connected with sleeves 16 which extend toward the drums 7. Coiled springs 17 are wound upon the drums and have end extensions 18 and 19, the forwardly extending ones of which are to fit into the sleeves 16 and the others of which are to extend downwardly and be engaged by fasteners 20 carried by the standards 6. Since the springs are under tension when the door is in the closed position and tend to move the arms 10 upwardly, these springs will serve to assist in swinging the arms and door sections upwardly in opening the door. The usual counterbalance weights 21 are provided, these weights being each carried by a cable 22 which passes over a pulley wheel 23 and has its ends connected with the

lower end portion of the door section 3 as shown at 24. There has thus been provided a door operating mechanism so constructed that the door may be easily swung upwardly from a vertical to a horizontal position.

I claim:

1. In a structure of the character described, a door having a main section slidably and pivotally mounted at its lower end, 10 an upper door section hingedly connected with the upper end of the main section and operating means comprising pivotally mounted bars loosely connected with the upper portion of the main door section, links 15 pivotally connected with the bars and lower portion of the upper door section, arms pivotally connected with said bars and extending upwardly therefrom, sleeves loosely connected with said arms, and coiled springs 20 having arm extensions fitting into said sleeves and tending to swing the bars upwardly to raise the door.

2. In a structure of the character described, a door having a main section slidably and pivotally mounted at its lower end, 25 an upper door section hingedly connected with the upper end of the main section, and operating means comprising bars pivotally mounted and having loose connection with the main door section, springs connected 30 with said bars and with the main door section above the bars, links pivotally connected with said upper door section and with said bars, arms pivotally connected with said bars between the springs and links and extending 35 above the links, sleeves pivotally connected with said arms, and coiled springs having end extensions fitting into said sleeves, the springs tending to swing the doors upwardly to an open position. 40

In testimony whereof I have hereunto set my hand.

GEORGE B. BOUGHTON.