

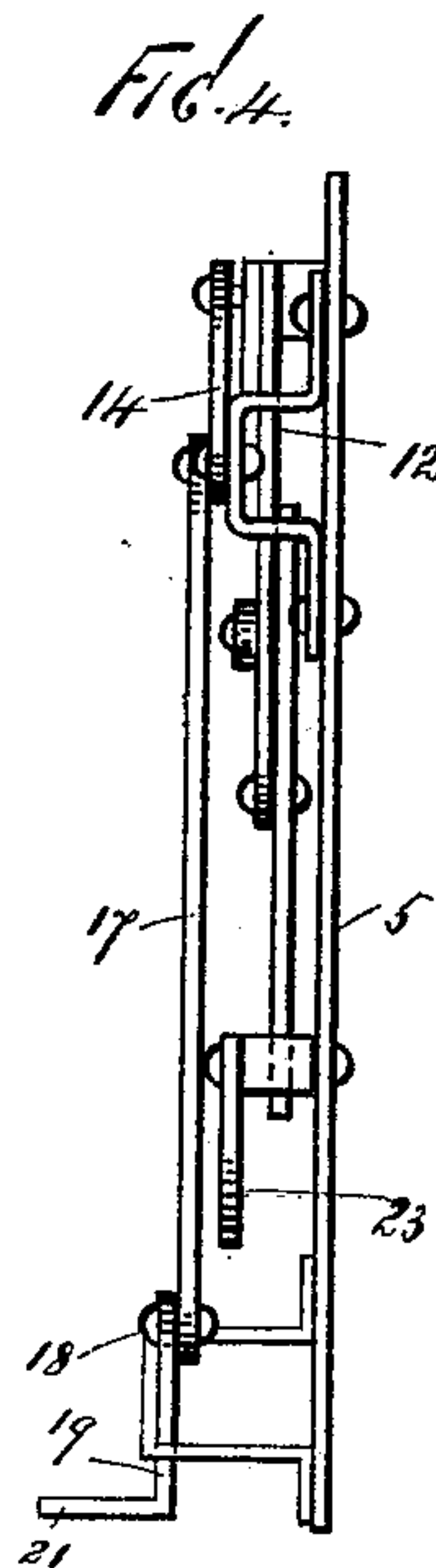
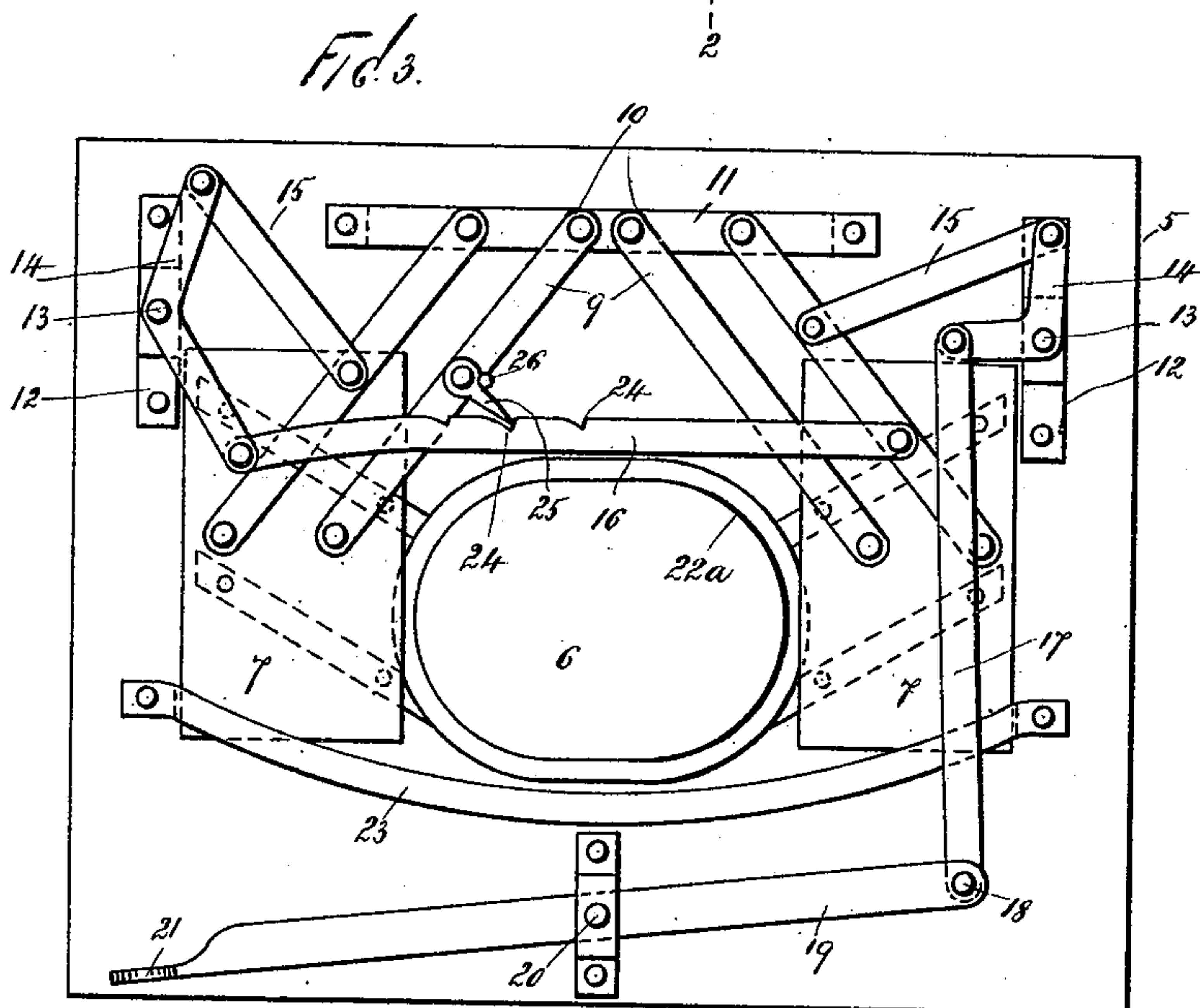
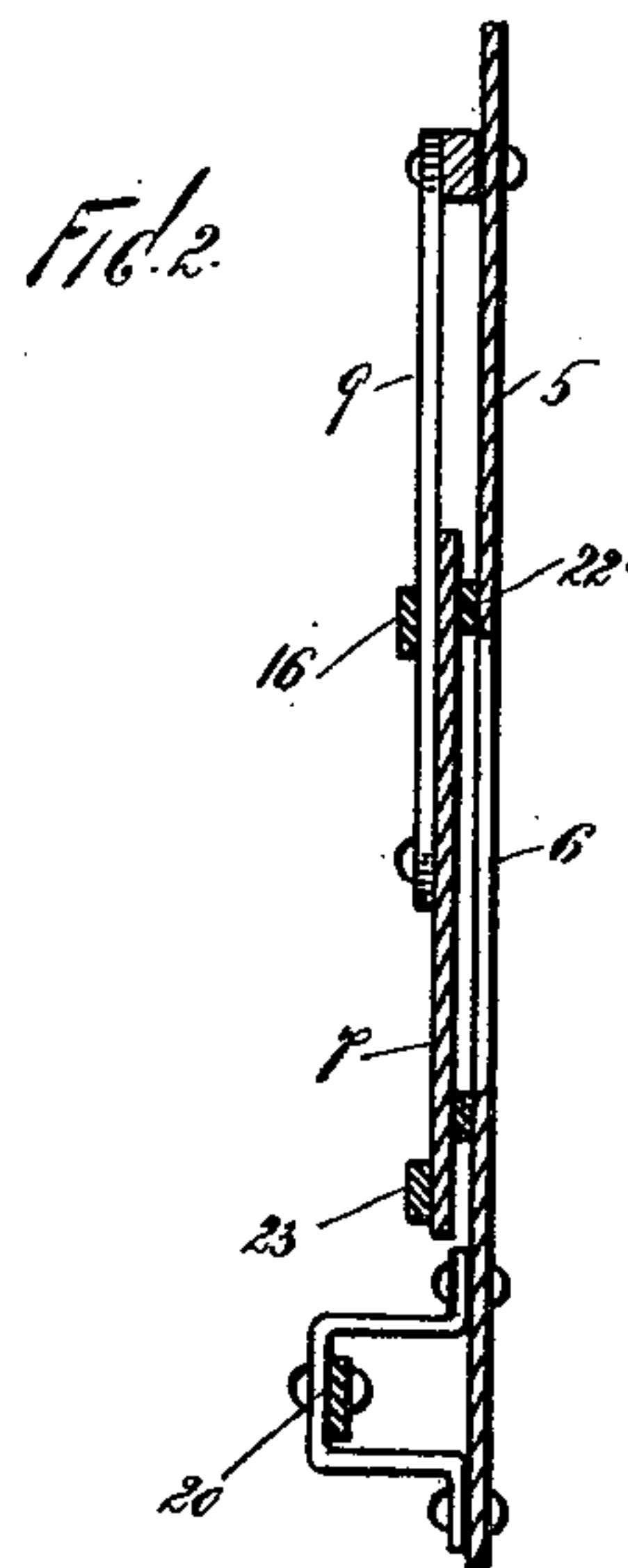
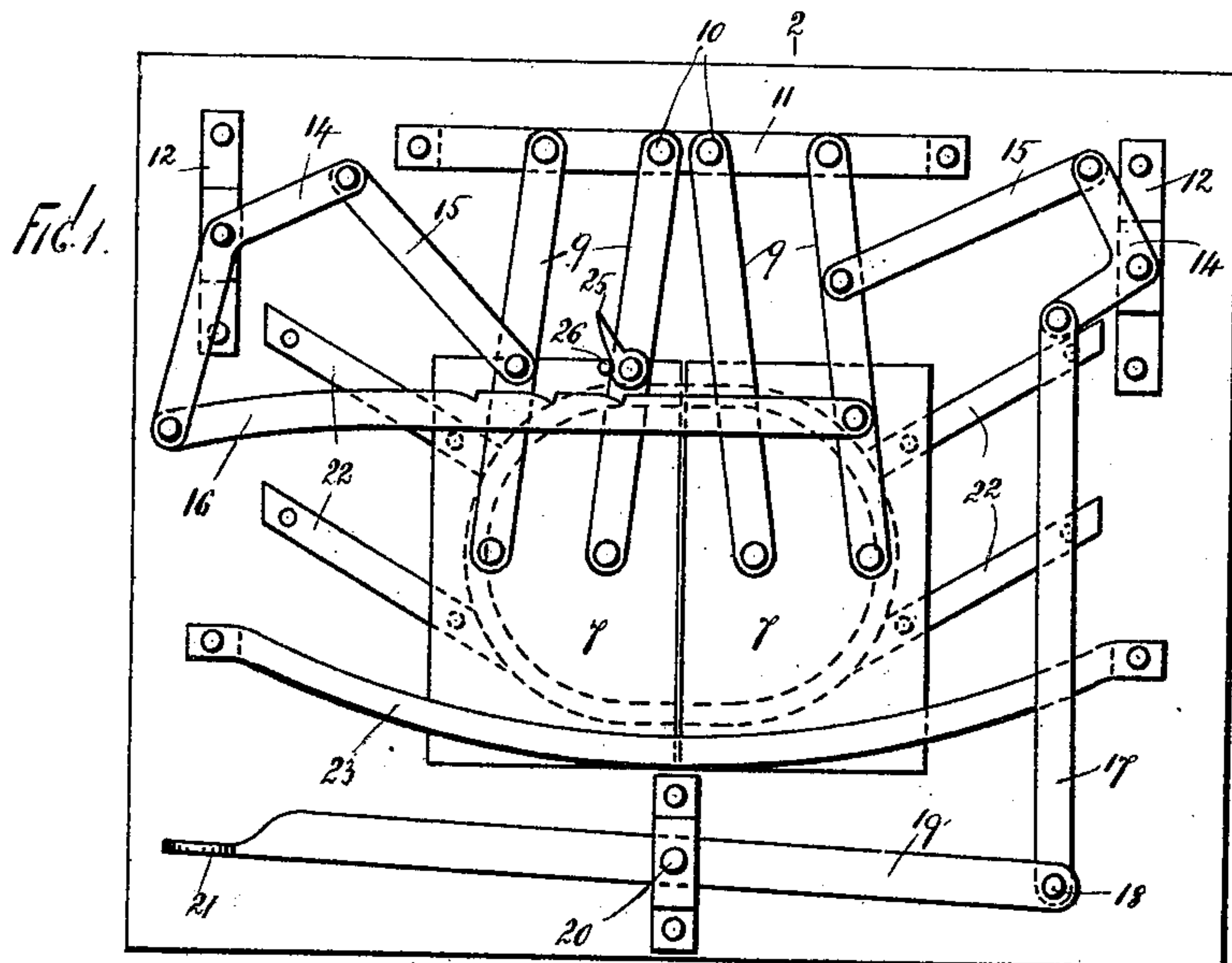
No. 619,817.

Patented Feb. 21, 1899.

G. W. WOLF.
FURNACE DOOR.

(Application filed Nov. 15, 1898.)

(No Model.)



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GEORGE W. WOLF, OF KEYSER, WEST VIRGINIA.

FURNACE-DOOR.

SPECIFICATION forming part of Letters Patent No. 619,817, dated February 21, 1899.

Application filed November 15, 1898. Serial No. 696,511. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WOLF, a citizen of the United States, residing at Keyser, in the county of Mineral and State of West Virginia, have invented certain new and useful Improvements in Furnace-Doors, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to furnace-doors and devices for opening and closing the same; and the object thereof is to provide improved devices of this class which are simple in construction and operation and which are applicable both to stationary and movable furnaces.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a front view of the end of a furnace provided with my improvement, the doors being closed; Fig. 2, a section on the line 2 2 of Fig. 1; Fig. 3, a view similar to Fig. 1, showing the doors open; and Fig. 4 a side view thereof.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same numerals of reference in each of the views, and in said drawings I have shown at 5 the front plate of a furnace with which the door attachments are usually connected. The plate 5 is provided with the usual central opening 6, which is adapted to be closed by two similar doors 7. The doors 7 are each suspended by means of two lever-arms 9, which are pivotally connected with the plate 5 at their upper ends, as shown at 10, or with a horizontal bar 11, secured to said plate 5, and near the outer upper corners of the plate 5 are secured vertical yoke-shaped supports 12, with each of which is pivotally connected, as shown at 13, a crank-lever 14. One arm of each of the crank-levers 14 is connected with the adjacent outer lever-arm 9 by a link 15, and the lower arm of the crank-lever 14 at the left is pivotally connected with a horizontal bar 16, the opposite end of which is connected with the outer lever-arm 9 at the right. The lower arm of the crank-lever 14 at the right is pivotally connected with a bar 17, the lower end

of which is pivotally connected at 18 with a pedal-lever 19, which is pivotally connected at 20 with the central portion of the plate 5, and one end of which is provided with a treadle 21.

Secured to the plate 5, at the opposite sides of the furnace-opening 6, are upwardly-ranging bearing or guide plates 22, over which the doors 7 slide in the operation of the device, as hereinafter described, and the furnace-opening 6 is provided with a rim-plate 22^a of substantially the same thickness as the guide-plates 22, and below the furnace-opening is a horizontal downwardly-curved and outset guide-bar 23, between which and the plate 5 the doors 7 move.

The upper horizontal bar 16, which is connected with one of the levers 14 and one of the lever-arms 9, is also provided in its upper surface with notches or recesses 24, and pivotally connected with one of the inner lever-arms 9, preferably on the left, is a pawl 25, which is adapted to operate in said notches or recesses, and said pawl is provided with a circular head having an outwardly-directed pin or projection 26, and the operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof.

When the doors are closed, the operative mechanism is in the position shown in Fig. 1 and all that is necessary to open the doors, as shown in Fig. 3, is to press the foot upon the treadle 21. This operation swings the doors and the suspending devices into the position shown in Fig. 3, and the pawl 25 is turned downwardly and enters one of the notches or recesses 24 in the bar 16 and prevents the doors from dropping into the closed position. When it is desired to close the doors, the pawl 25 is thrown upwardly by means of the forwardly-directed pin 26, a poker or other instrument being employed for this purpose, and the doors at once drop into the position shown in Fig. 1. By means of the number of the notches or recesses 24 and the location thereof the doors 7 may be slightly opened or entirely opened or adjusted to any desired position and held therein.

My improved devices for operating furnace-doors are simple in construction and opera-

tion, and it will be observed that the entire apparatus is automatic with the exception of the necessity of depressing the treadle 21.

My invention is not limited to the exact form, construction, and arrangement of the parts herein described, as it will be apparent that changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A furnace provided with two similar doors, which are suspended by lever-arms, a crank-lever supported laterally of said lever-arms at each side, one arm of each of said crank-levers being connected by means of pivoted links with the adjacent lever-arms, and one arm of one of said crank-levers being pivotally connected with a lever-arm on the opposite side by a horizontal cross-bar, and a treadle-lever in operative connection with one arm of the opposite crank-lever, substantially as shown and described.

2. A furnace provided with two similar doors which are suspended by lever-arms, a crank-lever supported laterally of said lever-arms at each side, one arm of each of said crank-levers being connected by means of pivoted links with the adjacent lever-arms, and one arm of one of said crank-levers being pivotally connected with a lever-arm on the opposite side by a horizontal cross-bar, and a treadle-lever in operative connection with one arm of the opposite crank-lever, said horizontal cross-bar being provided with notches or recesses, and one of the lever-arms

being provided with a pivoted pawl which operates in connection therewith, substantially as shown and described.

3. A furnace provided with two similar doors which are suspended by lever-arms, a crank-lever supported laterally of said lever-arms at each side, one arm of each of said crank-levers being connected by means of pivoted links with the adjacent lever-arms, and one arm of one of said crank-levers being pivotally connected with a lever-arm on the opposite side by a horizontal cross-bar, and a treadle-lever in operative connection with one arm of the opposite crank-lever, said horizontal cross-bar being provided with notches or recesses, and one of the lever-arms being provided with a pivoted pawl which operates in connection therewith, and a horizontal bar forming a guide for the lower end of the doors, substantially as shown and described.

4. A furnace provided with two similar doors which are suspended by lever-arms and adapted to swing laterally in a vertical plane, a crank-lever supported laterally of said lever-arms at each side, one arm of each of said crank-levers being connected with the adjacent lever-arm, and means for operating said crank-levers, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 12th day of November, 1898.

GEORGE W. WOLF.

Witnesses:

J. R. BEAN,
CHAS. N. FINNELL.