

May 27, 1930.

J. J. MITCHELL

1,760,710

MULTIPLE CONTROL DEVICE

Filed Jan. 25, 1929

3 Sheets-Sheet 1

Fig. 1.

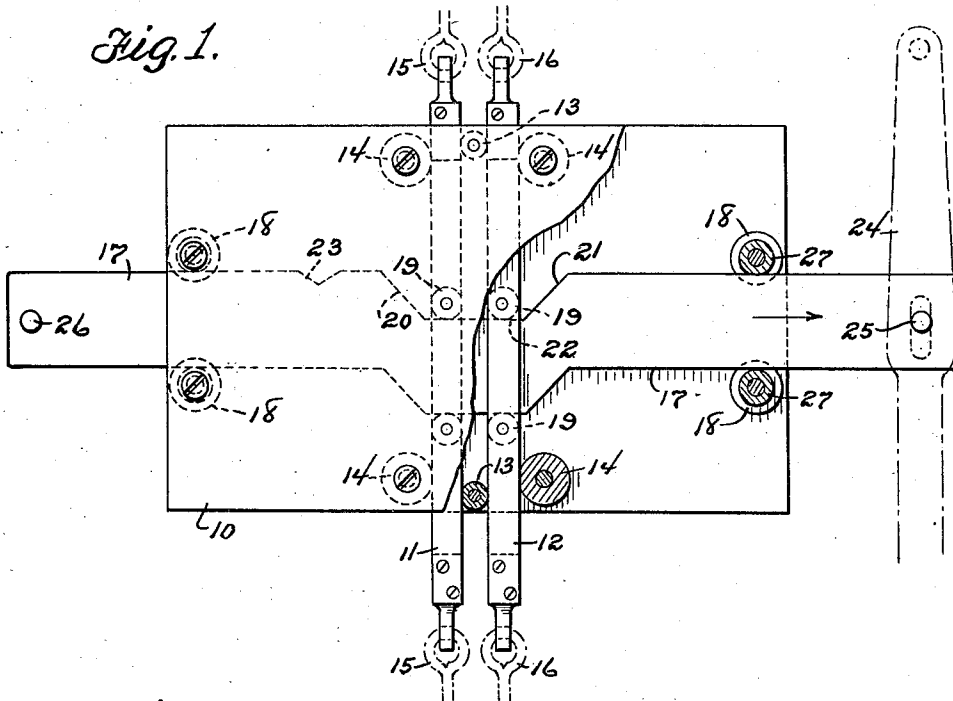
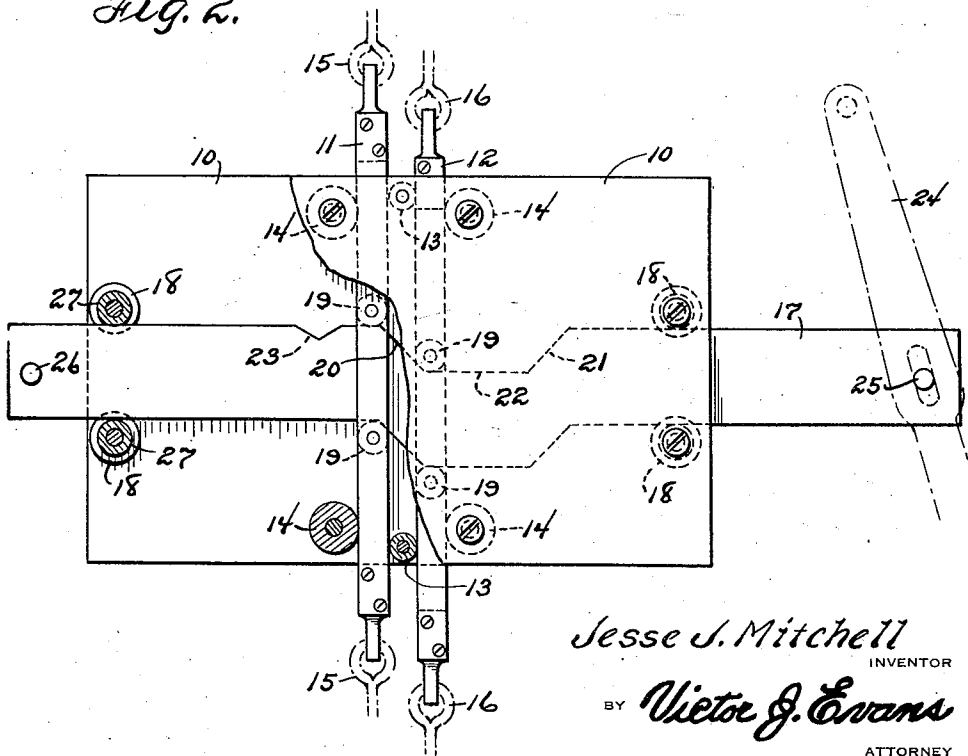


Fig. 2.



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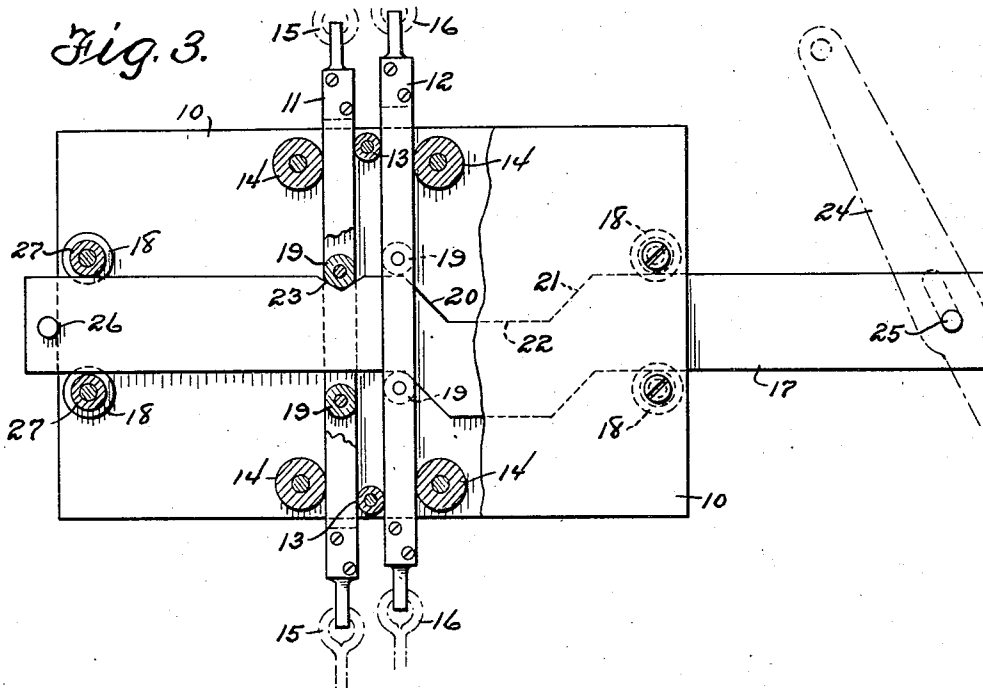
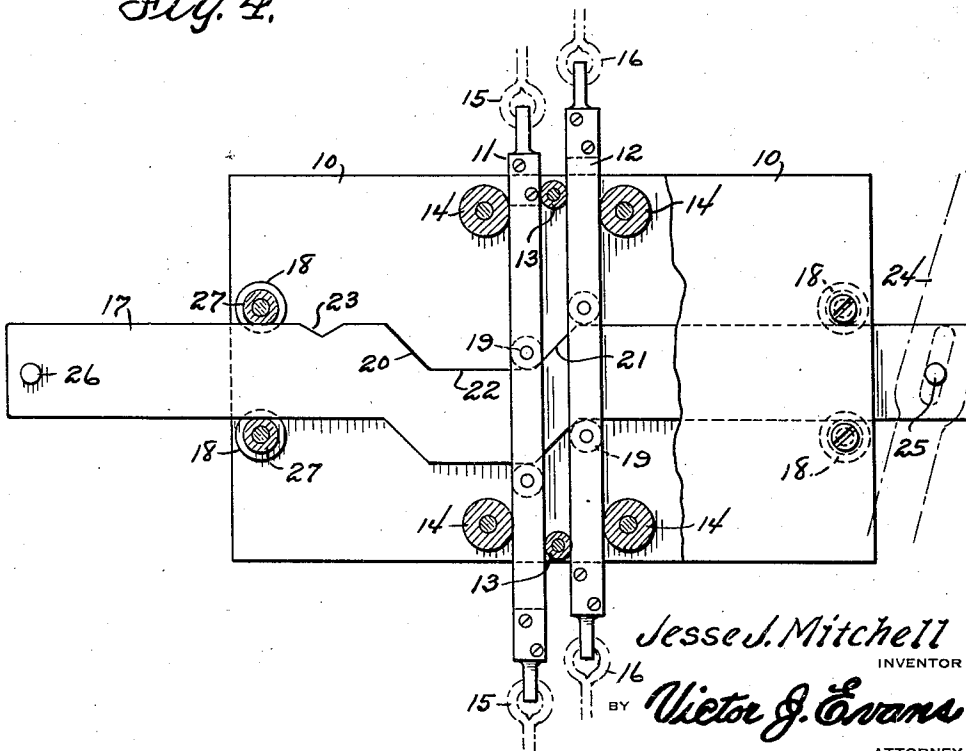


Fig. 4.



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Fig. 5.

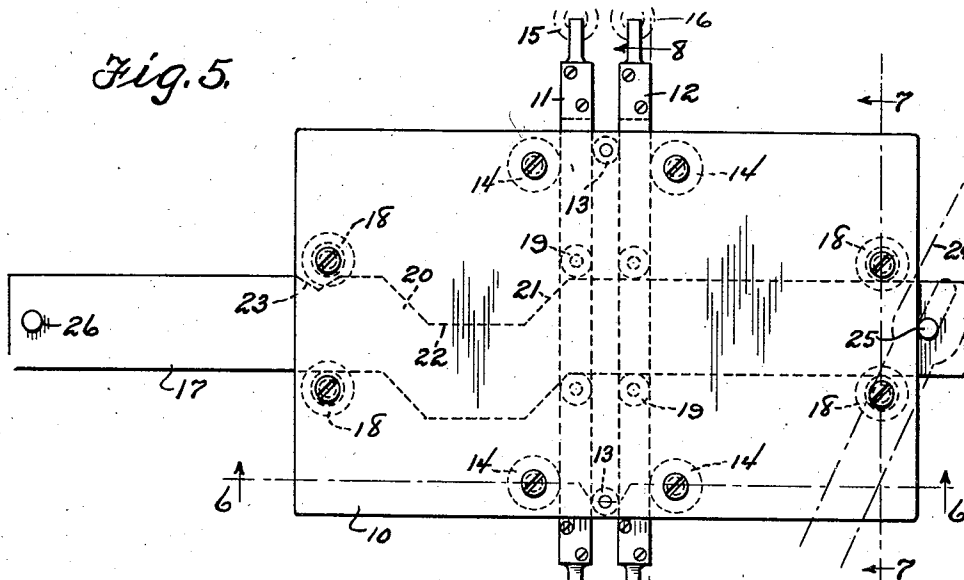


Fig. 6.

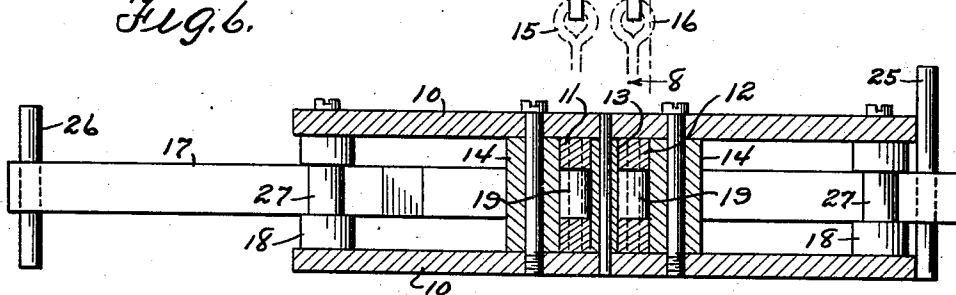


Fig. 7.

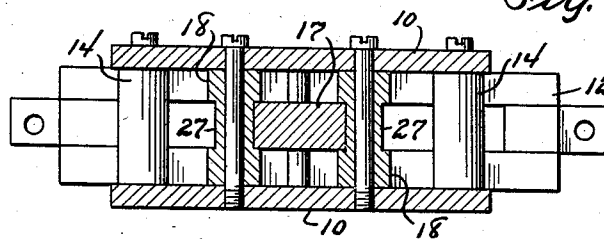
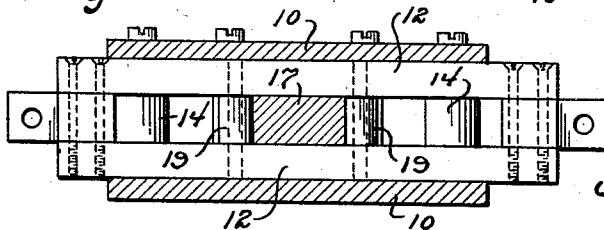


Fig. 8.



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UNITED STATES PATENT OFFICE

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MULTIPLE-CONTROL DEVICE

Application filed January 25, 1929. Serial No. 335,137.

This invention relates to multiple control devices, an object being to provide means whereby a plurality of separate devices or elements may be controlled through the manipulation of a single operating lever, the invention being especially adapted for use in connection with excavating or dredging machines using a bucket of the clam shell type.

For this purpose, the invention provides a control device which is adapted for many uses, and when used with a machine of the above character, provides means whereby through the operation of a single lever the bucket may be manipulated to raise or lower the same in either a closed or open position.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is an elevation partly broken away with parts in section illustrating the invention in a neutral position.

Figure 2 is a like view with one of the individual control members moved to an active position.

Figure 3 is a similar view with both of the individual control members in active position.

Figure 4 is a like view showing the individual control members in a reverse position from that shown in Figure 1.

Figure 5 is an elevation with both of the individual control members in a position reverse to that shown in Figure 3.

Figures 6, 7 and 8 are sectional views taken respectively on the lines 6—6, 7—7 and 8—8 of Figure 5.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the invention which is capable of many uses, will be described in connection with the operation of the bucket of an excavating or dredging machine, the bucket and its mounting however not being illustrated.

The invention comprises a suitable casing

which includes spaced plates 10 between which are slidably mounted individual control members in the form of bars 11 and 12. These bars are guided between rollers 13 and 14 which are positioned between the plates 10 and which act to connect the plates in spaced relation.

The opposite ends of the bar 11 are adapted for connection with a cable or cables 15 which have suitable connection with means to open and close a bucket. In other words, movement of the bar 11 in one direction will close the bucket while movement in an opposite direction will open the bucket.

The bar 12 is adapted to have its opposite ends connected with a cable or cables 16 which lead to suitable elements or devices for hoisting or lowering the bucket, depending upon the direction of movement of the bar 12.

For the purpose of moving the bars 11 and 12 the invention provides a main control bar 17 which is mounted for sliding movement between the plates 10 through the medium of rollers 18. These rollers like the rollers 13 and 14 also act as spacing and connecting means for the plates 10.

The bar 17 is movable transversely of the bars 11 and 12 and these bars 11 and 12 carry spaced rollers 19 which ride upon the edges of the bar 17. The bar 17 is offset intermediate its ends so as to provide oppositely inclined portions 20 and 21 which are connected by a straight portion 22 which is on a line parallel with the direction of movement of the bar 17. The bar 17 is also provided with a notch 23 in one edge adjacent the inclined portion 20.

In Figure 1 the parts are shown in neutral position, that is, with the bucket open and lowered.

By moving the main control bar 17 in the direction of the arrow shown in Figure 1 of the drawings, one of the rollers 19 of the individual control bar 11 will be caused to ride upward along the inclined portion 20 of the bar 17 to the position shown in Figure 2. In this position the bucket will be closed. Movement of the main control bar 17 may be effected by suitable means, such for ex-

ample, as a lever 24 which is shown by dotted lines in the drawings and which engages a pivot pin 25 at one end of the bar 17. This pin and a pin 26 at the opposite end of the bar serves to limit sliding movement of the bar.

Continued movement of the main bar 17 in the direction of the arrow shown in Figure 1 will cause the uppermost roller 19 of the bar 11 to enter the notch 23 of the bar 17 and equalize the pull upon the cable or cables 15 so that the bucket will remain closed. This movement of the bar 17 will also cause one of the rollers 19 of the bar 12 to ride up the inclined portion 20 of the bar 17 so that the bars 11 and 12 will occupy the position shown in Figure 3 with the bucket closed and in hoisting position. To stop hoisting movement of the bucket the bar 17 is moved in a reverse direction until the bar 12 returns to neutral position, while to open the bucket to release its contents the bar 11 is returned to neutral position.

In order to hoist the bucket with the latter in open position the bar 17 is moved to the position shown in Figure 4 of the drawings.

The rollers 18 are preferably circumferentially curved as shown at 27 in Figures 6 and 7 of the drawings. The bars 11 and 12 are formed of spaced members as shown in Figure 8 so as to provide for the passage of the bar 17 therebetween.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:

1. In a multiple control device for excavating machines, spaced parallel slidably mounted individual control bars, one of said bars being adapted to have its opposite ends connected with means to open and close the bucket of an excavating machine, and the other of said bars adapted to have its opposite ends connected with bucket raising and lowering means, a main control bar slidable transversely of and engaging the individual bars, an offset portion included in the main control bar to selectively operate the individual control bars, said offset portion including an intermediate straight section and reversely inclined sections, and cooperating means between the main control bar and one of the individual control bars to provide an equalizing position for the latter.

2. In a multiple control device for excavating machines, spaced parallel slidably mounted individual control bars, one of said bars being adapted to have its opposite ends connected with means to open and close the bucket of an excavating machine, and the other of said bars adapted to have its opposite ends connected with bucket raising and

lowering means, a main control bar slidable transversely of and engaging the individual bars, means included in the main control bar to selectively operate the individual control bars, said main control bar having a notch in one edge, and means carried by one of the individual control bars to engage within the notch and provide an equalizing position for said individual control bar.

In testimony whereof I affix my signature.
JESSE J. MITCHELL.

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