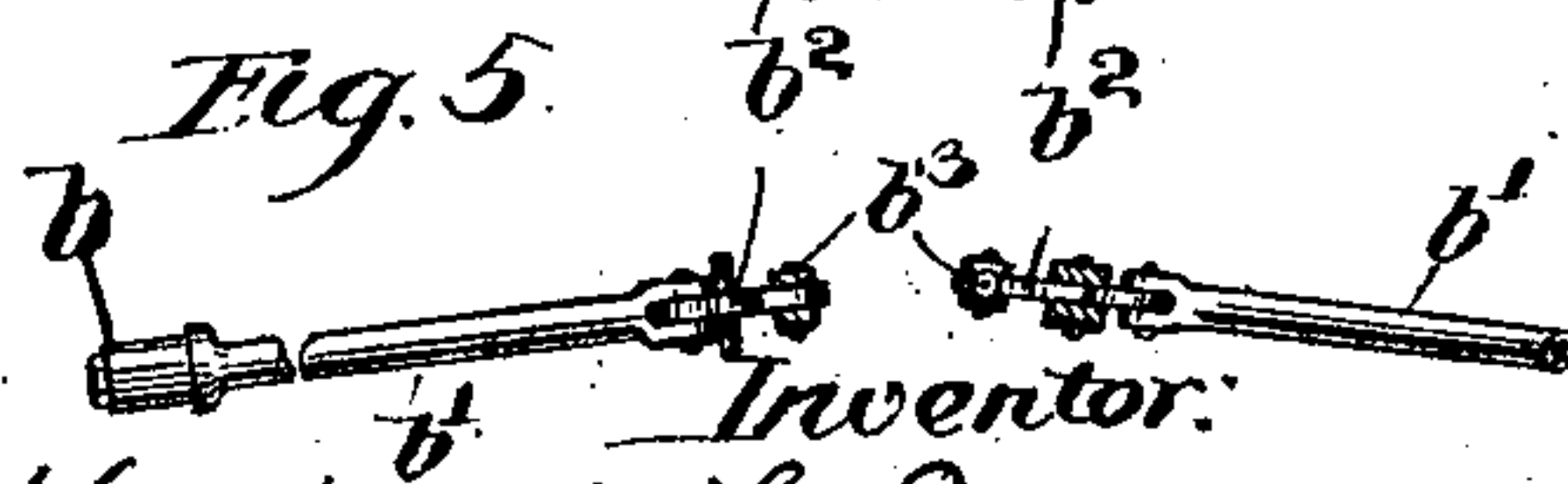
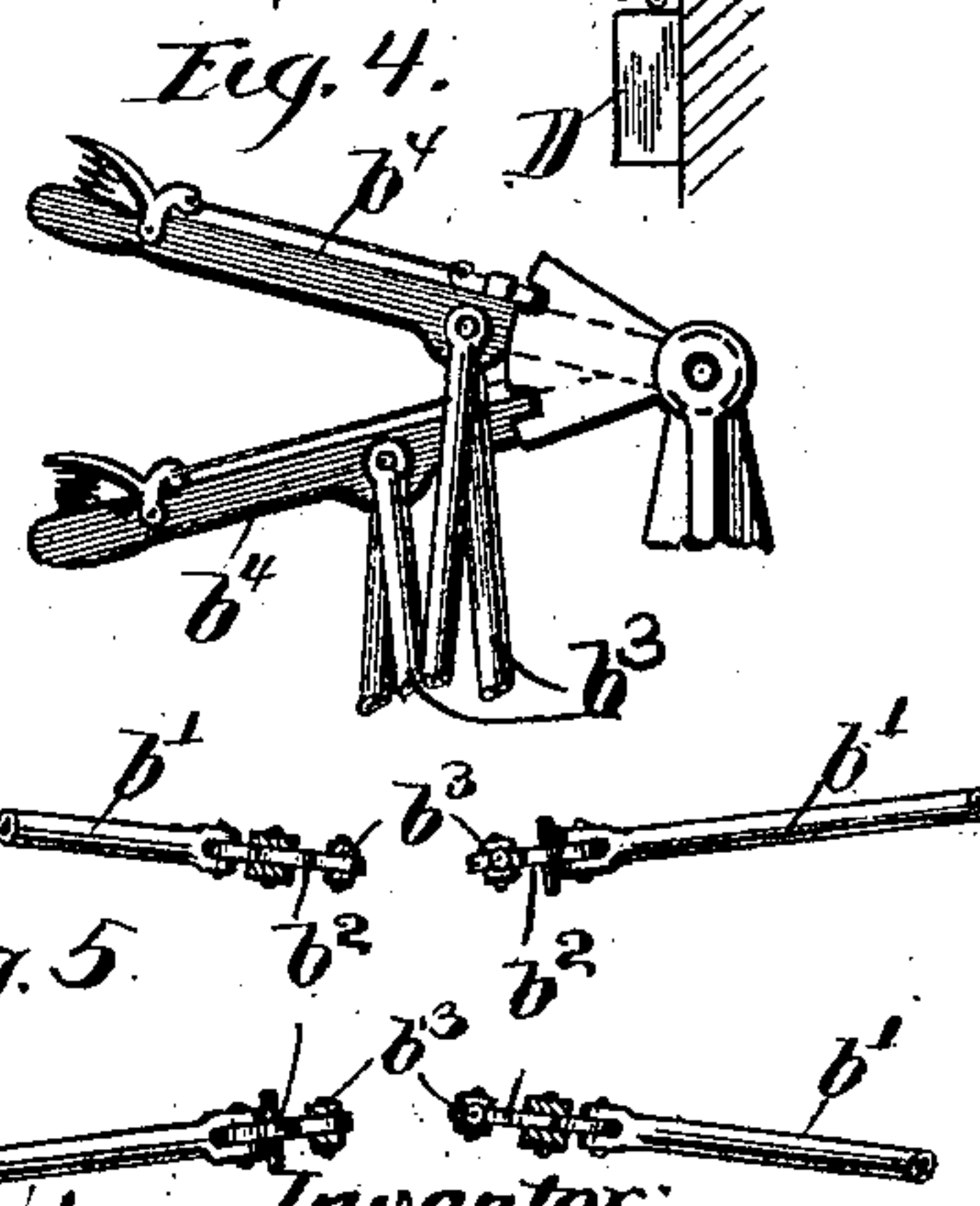
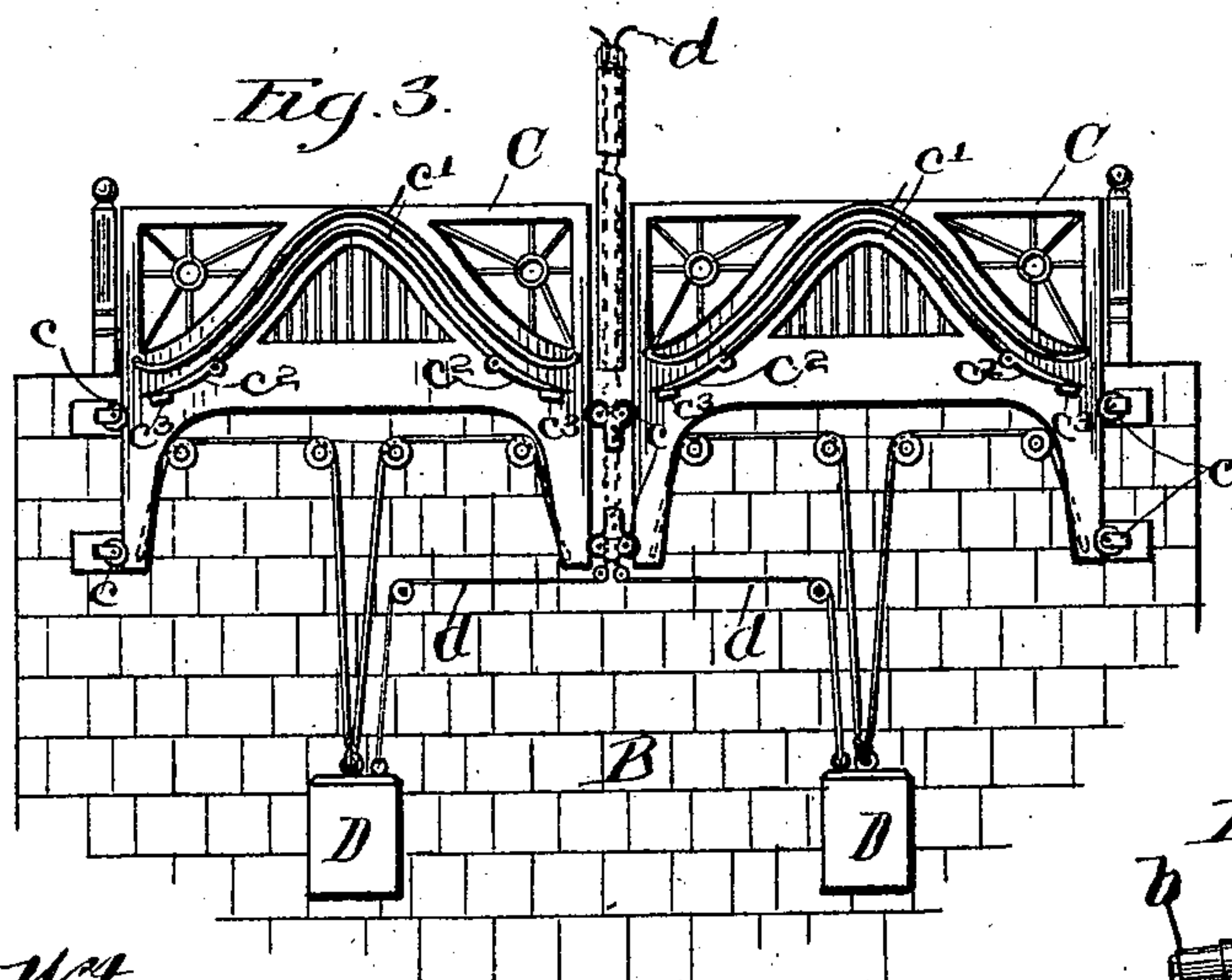
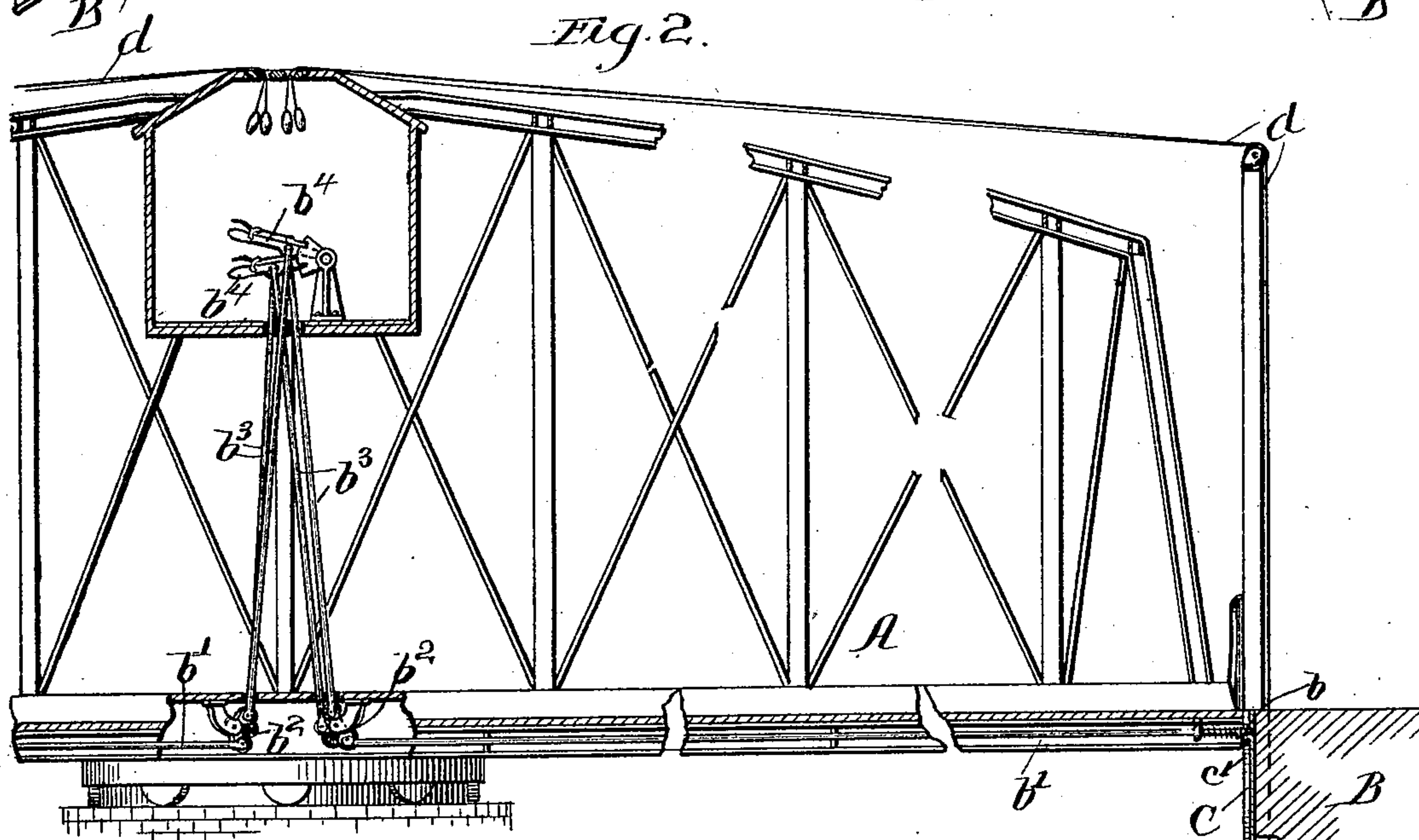
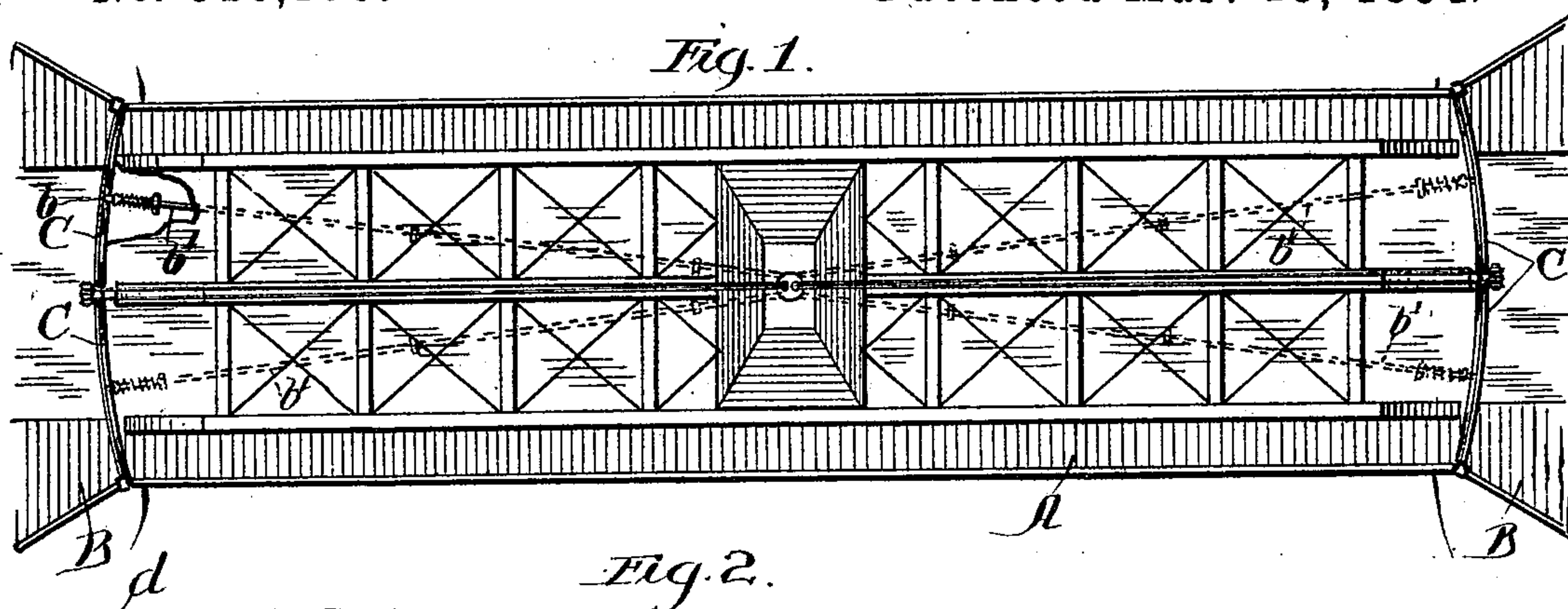


(No Model.)

H. F. BARNDT.
BRIDGE GATE.

No. 516,179.

Patented Mar. 13, 1894.



Witnesses:
Charles A. Sherry.
H. W. Effensen

Inventor:
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UNITED STATES PATENT OFFICE.

HALBERT F. BARNDT, OF CHICAGO, ILLINOIS.

BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 516,179, dated March 13, 1894.

Application filed November 27, 1893. Serial No. 492,080. (No model.)

To all whom it may concern:

Be it known that I, HALBERT F. BARNDT, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bridge-Gates, of which the following is a specification.

My invention relates to certain improvements in bridge gates, said improvements being in the nature of additions and alterations in the style of bridge gate for which I heretofore have obtained a patent, said patent being dated the 24th day of November, 1891, and numbered 463,677.

My improvements are illustrated by means of the drawings presented herewith, of which, Figure 1, is a plan view of a complete swing bridge. Fig. 2 is a partial elevation showing the middle of said bridge and one end. Fig. 3 is an elevation of one of the abutments looking from the bridge. Fig. 4 is a detail of the operating levers; and Fig. 5 is a broken plan in detail of certain connecting rods hereinafter described.

In the drawings, the bridge is lettered A, the abutments B, and the gates C. The latter move vertically between rollers, *c*, and are balanced by weights, D, as shown in Fig. 3. The face of each gate is provided with flanges, *c'*, forming a curved groove between them commencing at about the level of the roadway at each end of each gate and rising at the middle thereof to near the top. The ends of the bridge are provided with projecting rollers adapted to enter these grooves to crowd the gate downward as the bridge closes and raise it again as the bridge opens. The construction thus far described was illustrated in my former patent.

My present improvements have to do particularly with means for controlling the gates by hand in addition to the automatic control of the bridge itself. This renders the operation of the device much more perfect and satisfactory and also adapts it to double-track bridges which could not be operated successfully upon the plan of my former construction.

As before stated, the gates are operated by means of rollers projecting from the ends of the bridge. One of these rollers is seen in

Fig. 2 at *b*, and there are four of them, two at each end of the bridge, all journaled upon the respective ends of four sliding rods, *b'*, supported by suitable brackets beneath the bridge and extending to bell-crank levers, *b²*, under the center of the bridge. From these levers vertical rods, *b³*, extend to the box or house occupied by the operator, and are there fastened to hand-levers, *b⁴*, by means of which the rods may be moved when desired. These rods are given enough throw longitudinally to enable the rollers at their ends to be withdrawn entirely from the grooves between the flanges, *c'*, and thereby leave the gates entirely under the influence of the balancing weights, D, which at once close them. This enables the operator to close any of the gates at will, and, as in the case of a bridge with two roadways, the gates at the opposite ends of the respective roadways are always closed at the same time, one governing lever, *b⁴*, is sufficient for these two gates. For instance, the gate upon the end of each roadway toward which the vehicles are coming is always closed first to prevent other vehicles from entering the bridge, while those already upon it are getting off at the other end. It is also often convenient to be able to lower any of the gates from a central position, and for this purpose I run wires, *d*, from each of the weights, D, over suitable pulleys to the top of a post erected over the center of the abutment, and from there to a turn-table upon the top of the bridge, from which the wires extend down to handles within reach of the bridge tender, and by means of which he can raise any one of the weights and allow the gate governed thereby to drop by its own gravity.

In operating a double-track bridge the rollers, *b*, upon the ends of the bridge which approach the abutments first in closing, are held back until they pass the mouths of the first grooves, or the grooves upon the first gates, to avoid opening, and afterward closing these two gates. As it would be rather difficult to release these rollers when they come exactly to the middle of the abutments, I provide pivoted dogs, *c²*, which will permit the passage of the rollers from beneath the lower flange, *c'*, but not from above the same, the latter be-

ing prevented by stops, c^3 , upon which said dogs usually rest by their own weight.

I claim as new and desire to secure by Letters Patent—

5 1. The combination with the bridge, A, abutments, B, vertically sliding gates, C, provided with the grooves, c' , and the balancing weights, D, of the rollers, b , adapted to enter
10 said grooves and mounted upon sliding rods running to a central portion of the bridge, by means of which said rollers may be withdrawn from operative position from said central portion; substantially as described.

2. The combination with the bridge, A, 15 abutments, B, vertically sliding gates, C, provided with grooves, c' , balancing weights, D, and rollers, b , carried by sliding rods extending to the center of the bridge and provided with means located there for operating them,
20 of the pivoted dogs, c^2 , and stops, c^3 , whereby the passage of the rollers is permitted from beneath the flanges, but not above the same; substantially as described.

3. The combination with the bridge, A, abutments, B, vertically sliding gates, C, and 25 balancing weights, D, of the wires, d , attached to the weights, D, and extending over suitable pulleys to a central portion of the bridge, whereby said weights may be lifted by the operator located at said central position; substantially as described. 30

4. The combination with the bridge, A, abutments, B, vertically sliding gates, C, and balancing weights, D, of the rollers, b , carried by sliding rods extending to the center of the 35 bridge and provided with means located there for moving them, and the wires, d , attached to the weights, D, and running over suitable pulleys also extending to the center of the bridge and provided there with suitable handles; substantially as described. 40

HALBERT F. BARNDT.

Witnesses:

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