

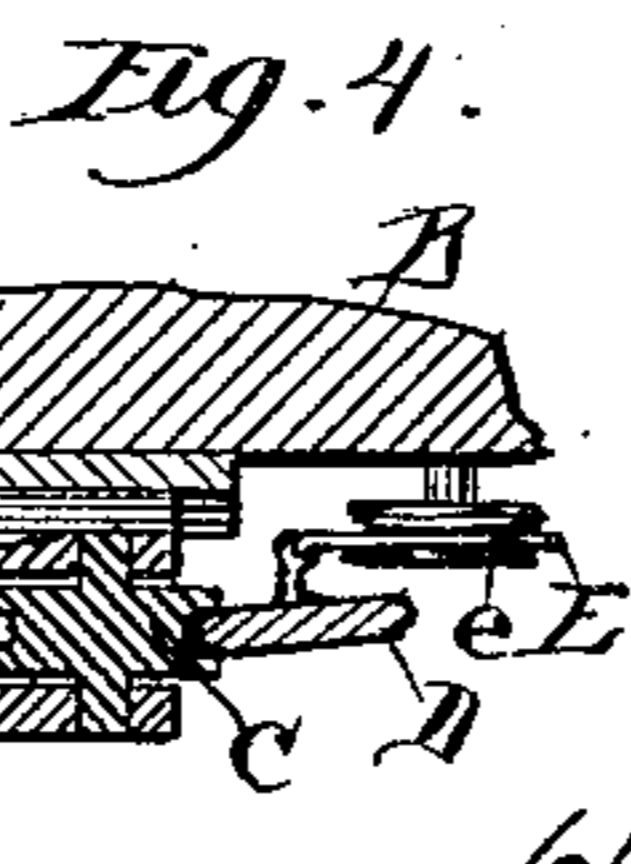
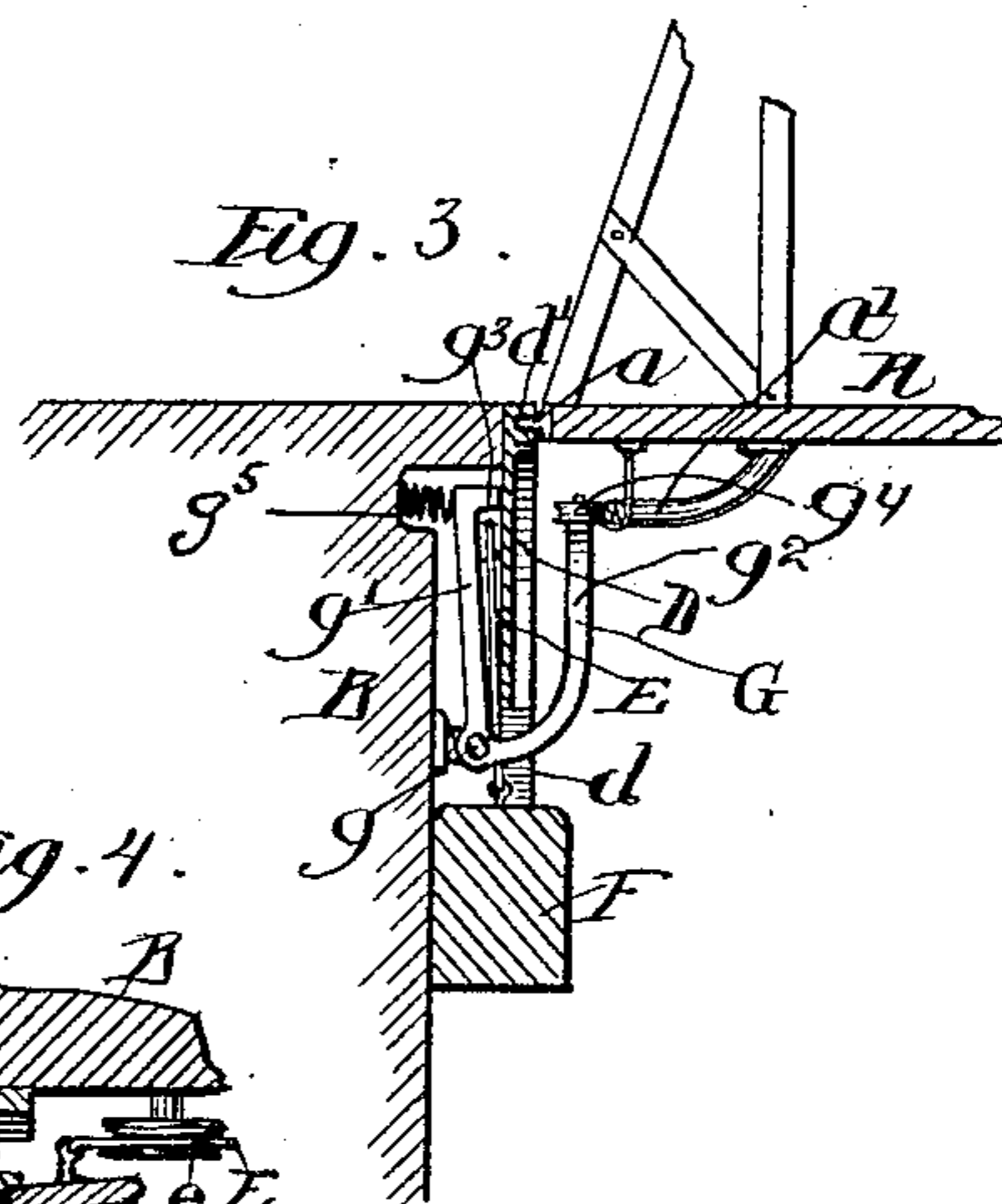
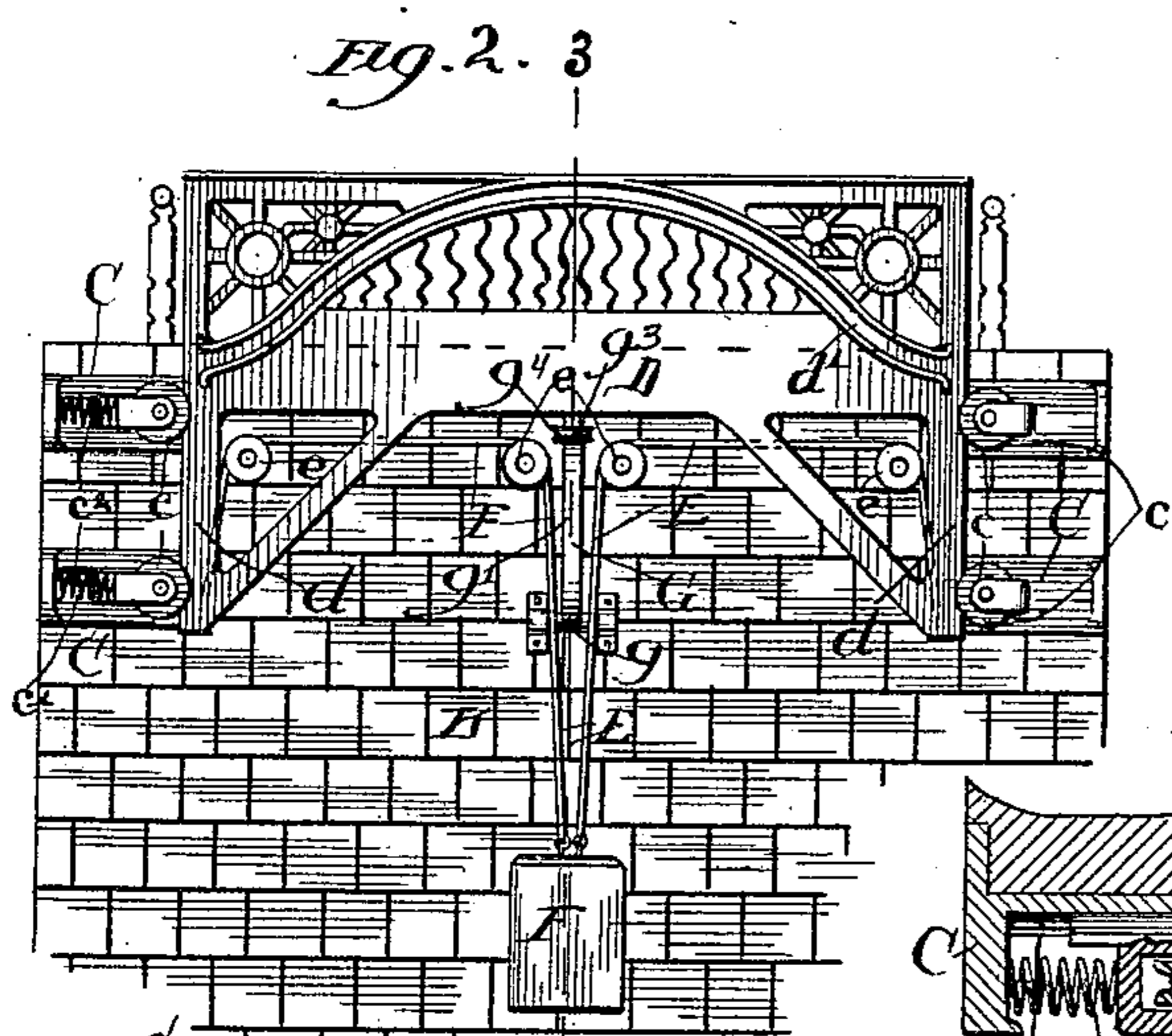
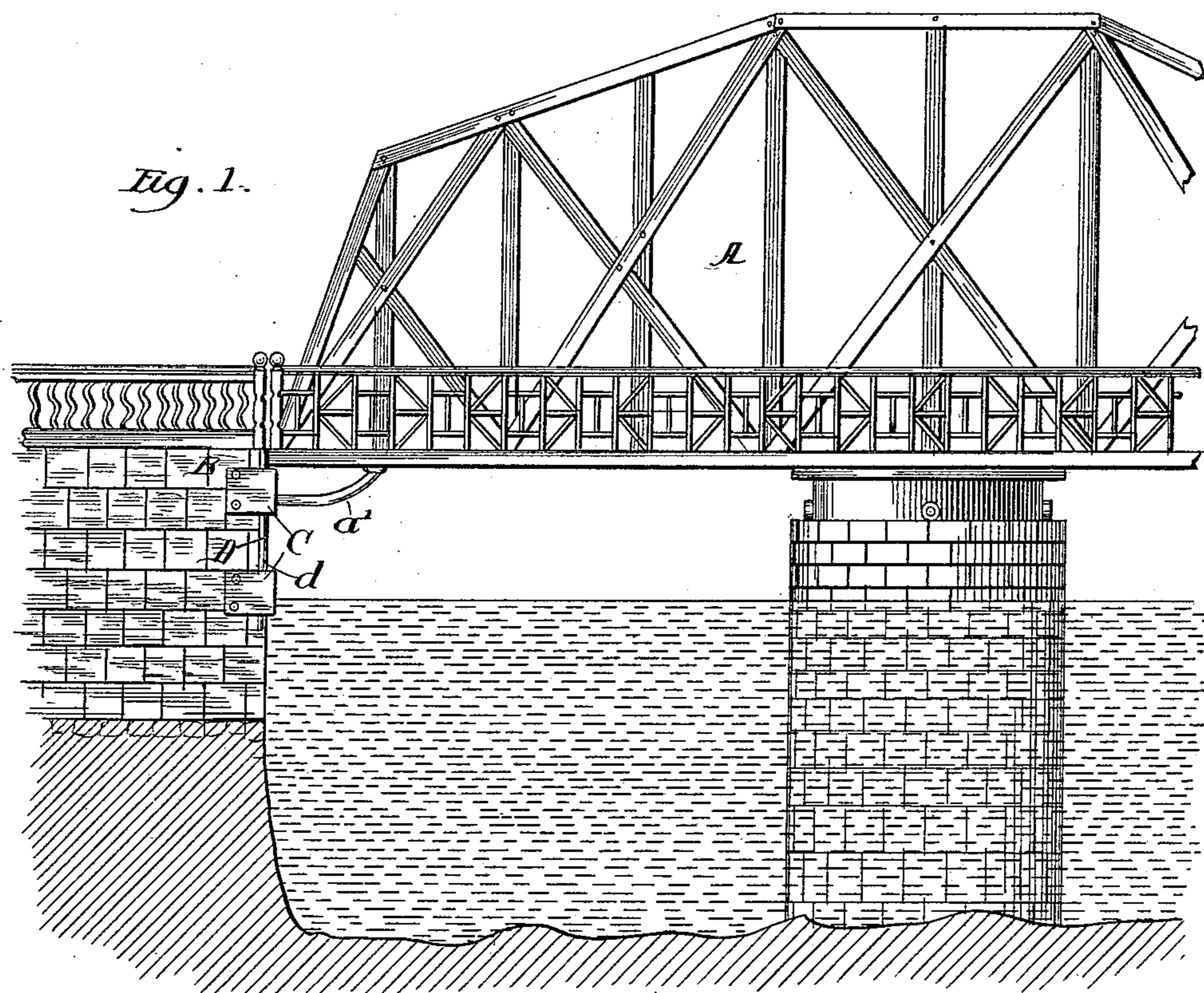
(No Model.)

H. F. BARNDT.

BRIDGE GATE.

No. 463,677.

Patented Nov. 24, 1891.



Witnesses:

Chas. O. Sherway

C. P. Smith.

Inventor:

Halburt F. Barndt

By Wiles, Green & Bitton
Attorneys.

UNITED STATES PATENT OFFICE.

HALBERT F. BARNDT, OF CHICAGO, ILLINOIS.

BRIDGE-GATE.

SPECIFICATION forming part of Letters Patent No. 463,677, dated November 24, 1891.

Application filed May 6, 1891. Serial No. 391,706. (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.

In the use of the ordinary swinging or draw bridges in large cities, where navigable streams of water are crossed by numerous thoroughfares constantly filled with all manner of vehicles, there is a great and constant danger when the bridge is drawn or open of persons or teams falling from the unprotected approach into the water. This danger is ordinarily unprovided for, and in case of a runaway or a dark night and a poorly-lighted bridge a serious accident is almost unavoidable.

It is my purpose to devise means for automatically blocking the passage-ways both of the vehicles and of the foot-passengers by the very act of opening the bridge, and to thus render it impossible for any object or person to pass from the edge of the abutment unless the bridge is in proper position to receive them.

To this end my invention consists in certain new and improved devices, fully described below, the essential features and combinations of which will be closely defined in the claims at the end of this specification.

Referring to the drawings for an illustration of the preferred form, in which I have embodied my improvements, the same are shown in Figure 1 by means of a side elevation of a portion of a bridge and abutment, with said improvements attached, and certain portions are more clearly illustrated in Figs. 2, 3, and 4, of which Fig. 2 is a face view of one of the abutments, the bridge being removed. Fig. 3 is a section in line 3 3 of Fig. 2, and shows the bridge in position; and Fig. 4 is a detail view.

In the figures the bridge is lettered A and the abutment B. As both ends of the bridge and both abutments are alike, only one end and one abutment are shown. At each corner of the abutment, and just in front of the face thereof, I secure brackets C, in which are journaled flanged rollers c, and I construct a gate D of suitable width and height to com-

pletely close the passage-way upon the bridge, and having downwardly-extended side posts d of sufficient length, so that when the gate is up they will reach to the lower rollers. As it is desirable to make the gate of iron or steel, the brackets C upon one side are mounted in guides c' and provided with springs c² to press the rollers against the gate, and at the same time allow them to yield when the latter expands.

To balance the gates and enable them to be raised and lowered with ease, I attach chains E to the side posts, pass them over pulleys e, journaled in brackets attached to the face of the abutment, and finally suspend from them a balancing-weight F. The chains from both sides of the gate are preferably carried to the same weight, in order that the gate may be compelled to rise and fall equally at both ends. By so doing, if one end of the gate should be raised faster than the other, the chain running from that end will become slack and the entire gravity of the weight be brought to bear upon the other end of the gate, immediately compelling that end to rise, inasmuch as the weight is large enough to balance the entire gate.

Upon the face of each one of the gates I provide a groove d', and upon the end of the bridge a stud or roller a, adapted to run in this groove. The groove is inclined from the center of the gate in both directions, preferably in the form of a curve convex upward, so that when the roller rests in the middle portion of the groove and the bridge is closed the gate will be flush with the roadway; but when the roller is at either end of the groove and the bridge has opened thus far the gate will be closed. It will be clear from a glance at the drawings that this causes the operation of the bridge to automatically close and open the gate, and under ordinary circumstances would probably be a sufficient precaution against accidents; but as the gate is designed to be perfectly balanced, meddlesome persons might push it down when the bridge was open, and I have provided means for effectually guarding against this, said means consisting in an automatic lock operated by the bridge itself and adapted to hold the gate in its upper position when the bridge is open, but to allow it to drop during the

closing thereof. Said means consist, preferably, of a U-shaped lever G, pivoted at g to the abutment, and having two upwardly-extending arms $g' g^2$, the first of which lies
5 within the wall of the abutment and bears at the top an outwardly-extending head g^3 . The other arm extends upward in front of the face of the abutment and far enough therefrom to allow the gate to swing up and down between
10 the two, and preferably has at the top a roller g^4 .

Upon each end of the bridge a curved rod a' is secured, so located that when the bridge closes it engages with the roller g^4 , and,
15 crowding it backward, forces the head g^3 of the arm g' back out of the way to allow the gate to drop. A spring g^5 is placed behind the arm g' to force it outward when not prevented.

20 It is obvious that a great many variations or modifications may be made in the precise construction of my invention, and I do not desire to limit myself to any particular form, but believe my invention to be clearly defined
25 in the following claims.

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

1. The combination, with a reciprocating gate, of guiding and supporting rollers at the

opposite ends thereof, those at one end being
30 pressed against the gate by a yielding force, whereby they are always kept in close contact therewith and may yield to allow the expansion of the gate, substantially as described.

35 2. The combination, with a gate operating vertically in suitable guides, of two cords secured at one end to opposite ends of the gate, respectively, and sustaining through suitable
40 connections a single balancing-weight at substantially the same point, whereby when one end of the gate alone is moved upward the entire gravity of the weight is thrown upon the other end, substantially as described.

45 3. The combination, with the bridge A, bearing the operating-rod a' , the abutment B, and the vertically-sliding gate D, of the bent lever G, having one arm extended up in front of the gate in position to be engaged by the
50 rod a' and the other end extending up behind the gate and pressed forward by a spring, whereby it may lock the gate when the rod a' ceases to engage the other arm of the lever, substantially as described.

HALBERT F. BARNDT.

Witnesses:

C. P. SMITH,

CHARLES O. SHERVEY.