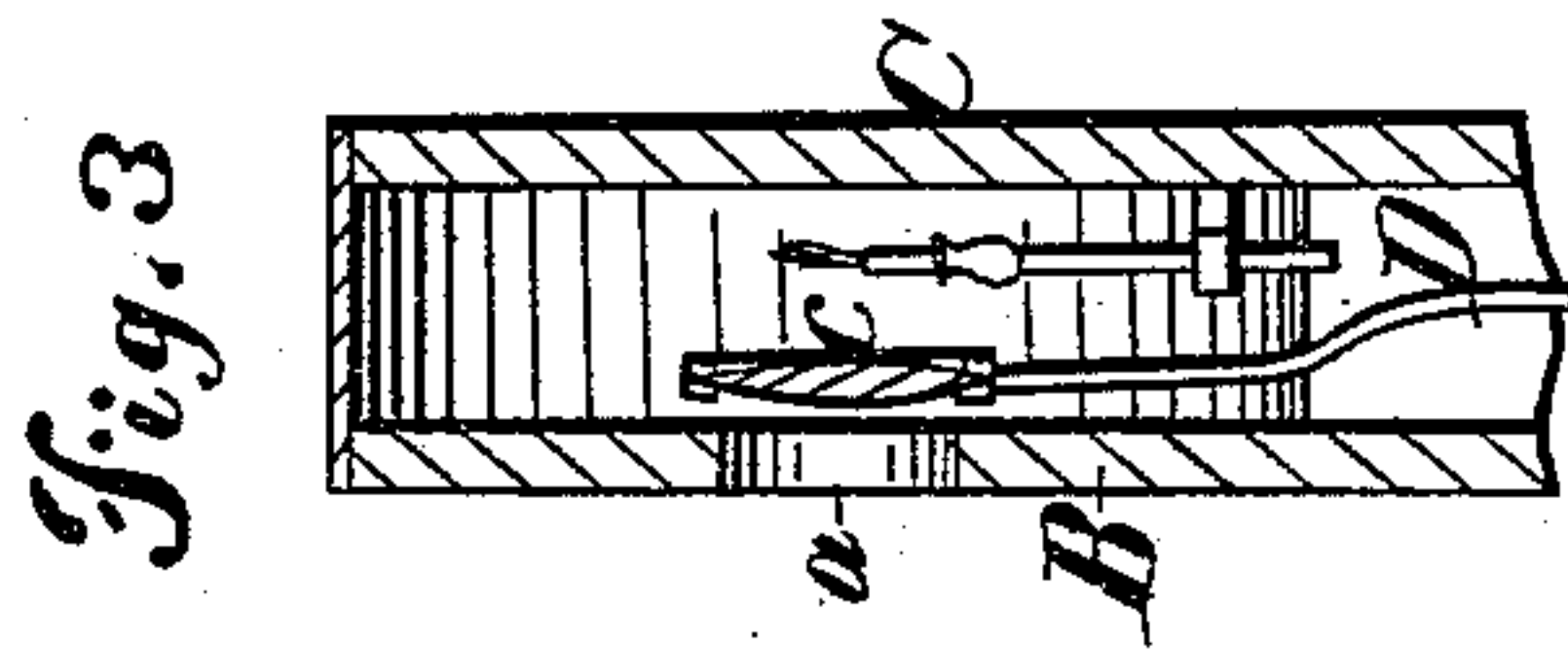
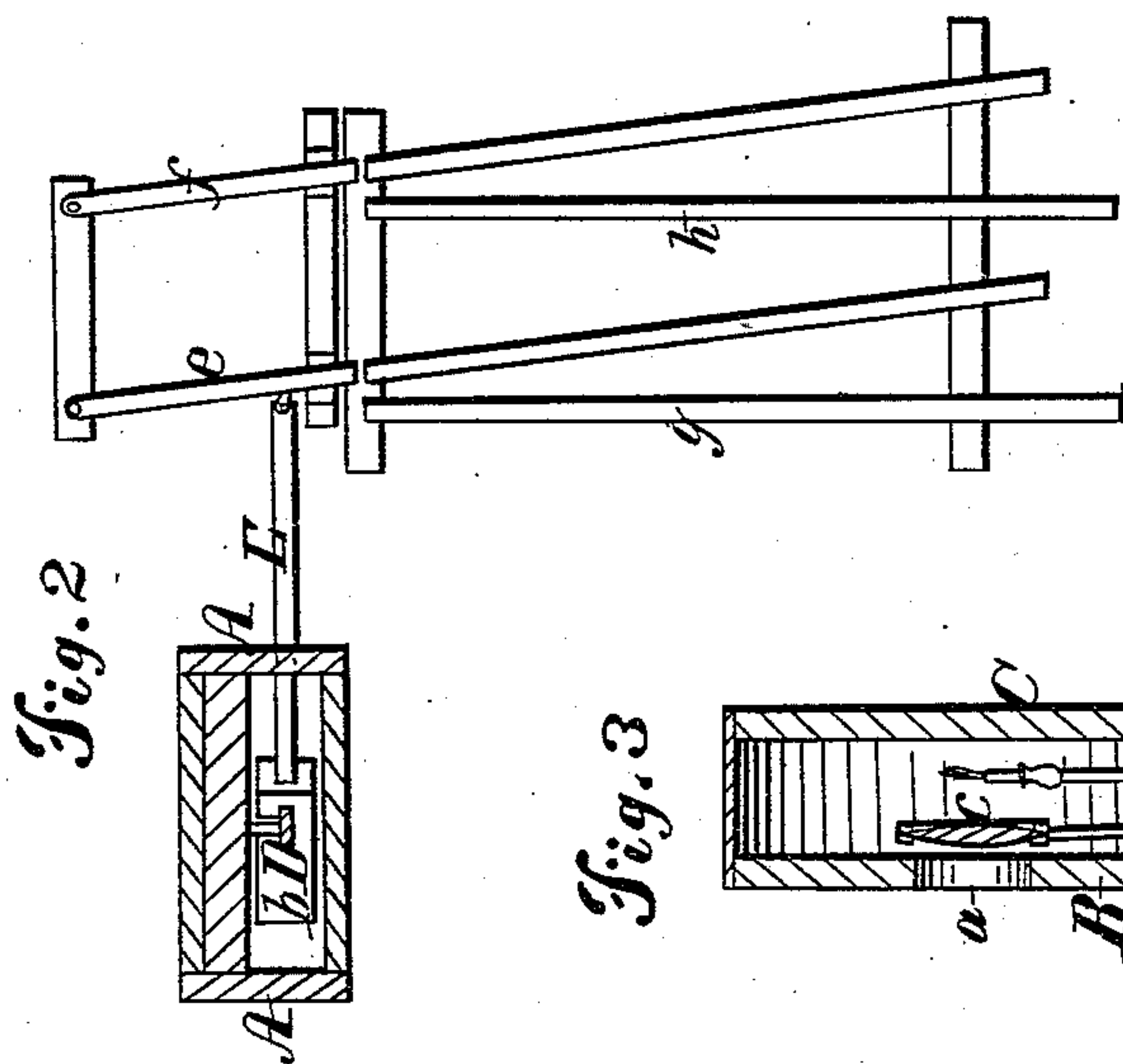
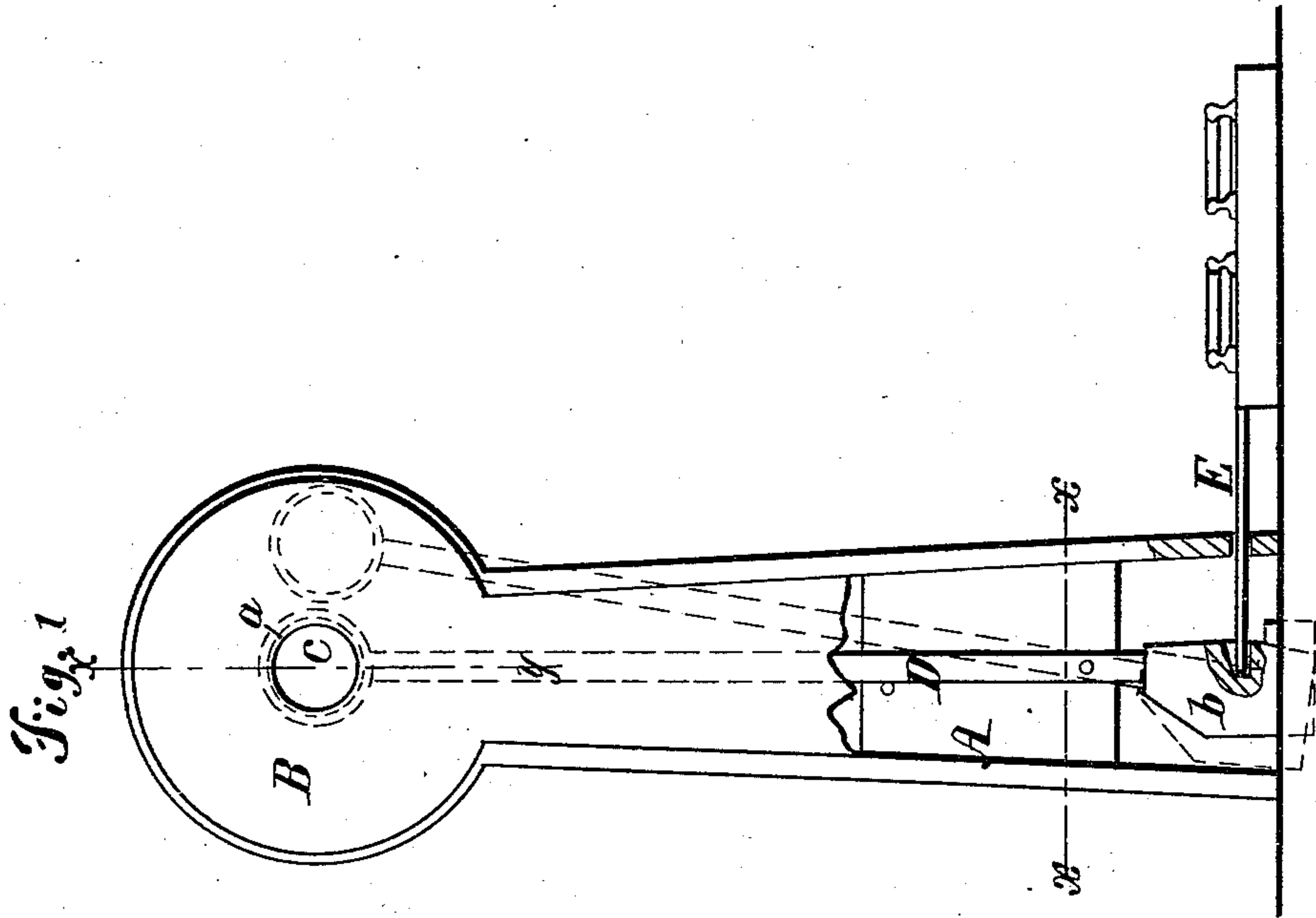


J. F. MORSELL.
Railroad-Switch Signal.

No. 84,896.

Patented Dec. 15, 1868.



Witnesses.
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UNITED STATES PATENT OFFICE.

I. FERGUSON MORSELL, OF STAMFORD, CONNECTICUT.

IMPROVED RAILWAY-SWITCH SIGNAL.

Specification forming part of Letters Patent No. 84,896, dated December 15, 1868.

To all whom it may concern:

Be it known that I, I. FERGUSON MORSELL, of Stamford, in the county of Fairfield and State of Connecticut, have invented a new and Improved Railroad-Switch Signal; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a front elevation of a railroad-switch signal constructed in accordance with my present invention, the lower portion being shown partly in section. Fig. 2 is a cross-section taken on the plane of the line *xx*, Fig. 1. Fig. 3 is a vertical transverse section taken on the plane of the line *yy*, Fig. 1.

My invention consists in the combination, with each other, of a vertically-arranged vibratory lever, provided with a colored plate, which is thereby moved opposite to and away from an opening in a stationary board of the usual or any proper construction, and also provided with a weight or its equivalent for causing said lever to automatically assume a perpendicular position when liberated by the breaking of the main line of track, and consequently bring the colored plate before said opening to indicate danger; of a rod attached to the switch-bar for operating the signal when the switch-lever is moved, and of a stand for supporting the above-specified members of the combination.

It is, of course, well known that it is the custom on railroads to display a red signal to denote "danger—stop" and a white signal to indicate "all right—track clear," and this custom is followed both night and day.

In the accompanying drawings, A designates a stand or supporting-frame, at the upper end of which a show-board or plate, B, of the ordinary or any suitable construction, is arranged. The said board B is provided with an opening, *a*, through which light may pass. I have shown a black board, C, having a white inner surface, which can be seen at a distance through the opening *a*, the side of the board B facing the approaching train being, as usual, painted black to contrast more strongly with the white face of the board C, as seen through the opening *a*, or with the light which passes through the said opening. I have shown the stand A so constructed as to inclose the working parts

of the signal; but this is not necessary, nor is a black board necessary.

D is a rod or lever, pivoted at a suitable point of its length to some part of the stand in such manner that it shall have a lateral motion as to its respective ends. The lower end of this rod is weighted or carries a weight, *b*, which is so constructed or hung as to cause the rod to automatically assume a vertical position when liberated from a device holding it away from such position. The upper end of the rod or lever B carries a plate of colored material, *c*, (red glass, for instance,) which, when the rod is perpendicular, is in a position opposite the opening *a* in the board B, and therefore displays the signal of danger, indicating that the continuity of the main track is broken or that the switch is open, and which, when the said line is continuous, is kept away from the opening and behind the board B. The device I have shown for operating the lever or rod D is a rod, E, attached to the rails or to a connecting-rod uniting them, as found most desirable.

The rails are moved in the ordinary way by a capstan or switch-lever.

I have shown in red outline in Fig. 2 a gas-jet which may be lighted at night, and thus display a white signal at all times except when the transparent plate *c* is interposed; and I have shown the signal as arranged for a line of railroad having a double track, in which case it is only necessary that the signal be observable in the direction from which the train approaches; and I will remark that should the signal be used where there is only a single track, in which case it would need to be visible from either direction, two boards B would be employed, and for a night-signal there would be two plates *c* connected to the rod D, so arranged that a light could be placed between them.

The operation of this switch-signal is easily understood. In the drawings the switch is shown as "open" and the red signal displayed, the rod E being in a perpendicular position, it having been caused to assume such position, and it being held there by the weight *b*, the said rod E having been by the act of opening the switch drawn away from the said weight, so that it could by its own gravity cause the rod E to assume a perpendicular position. Now, when the rails *ef* are moved so as to form a

continuous line of rails with the main track *g* *h* the rod *E* pushes the lower end of the lever or rod *D* to one side, and consequently the red signal *c* is thrown behind the board *B*, as shown in dotted lines in Fig. 1, and the light passing through the opening *a*, a white signal is displayed.

I will here remark that when two turn-outs or switch-tracks are employed on the same side of the main track the signal will operate in the same manner as above described, as is obvious. And I will remark in this connection that if the signal is to be used where there is only one turn-out, the rod *E* may be permanently secured to the lower end of rod or lever *D*, when the weight or its equivalent could be dispensed with. And I will also remark that as an equivalent for the weight *b* a spring could be arranged so as to cause the lever or rod to immediately assume a perpendicular position so soon as liberated by the opening of a switch, and hence display the red signal—for instance, a spiral spring arranged to draw or to push the rod *E*, so that it will assume a vertical position and answer the purpose.

The signal I have shown is simple in all its parts, and it is so constructed that should any of its exposed parts be broken or bent, a signal of "all right" could not be indicated, but, on the contrary, a signal of "danger," which it is better should be indicated a hundred times when there is no danger, than a signal of "all right" when there is danger, as is obvious.

I do not claim simply an arrangement of levers, but

What I claim as my invention, and desire to secure by Letters Patent, is—

A railroad-switch signal consisting of the combination of a suitable frame or stand, *A*, supporting a show board *B*, a perpendicularly-arranged vibrating lever *D*, provided with a weight, *b*, or its equivalent, and a colored plate, *c*, and a detached rod connecting said lever *D* with the rails of a railroad, arranged and operating substantially as and for the purposes herein specified.

I. FERGUSON MORSELL.

Witnesses:

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