

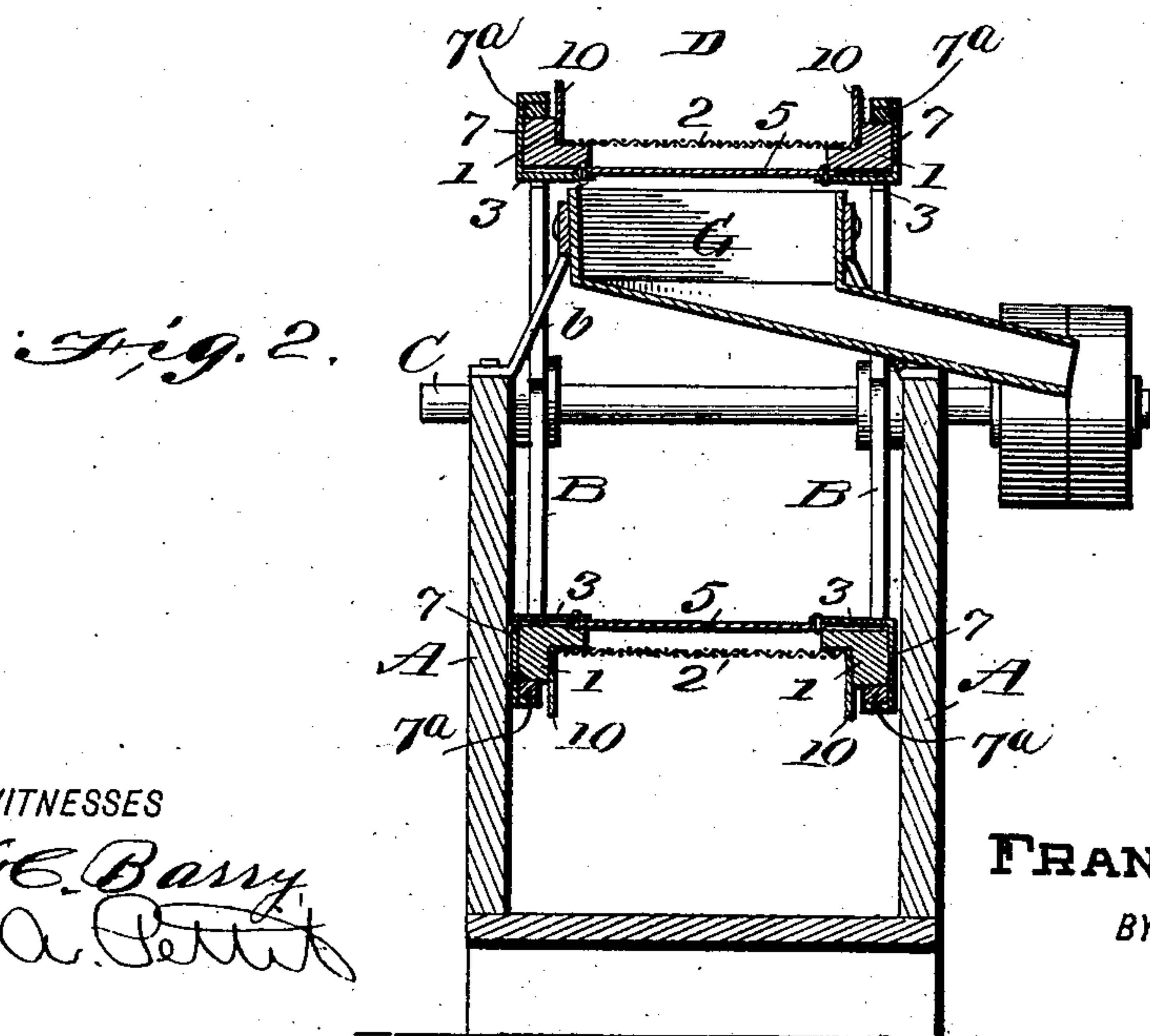
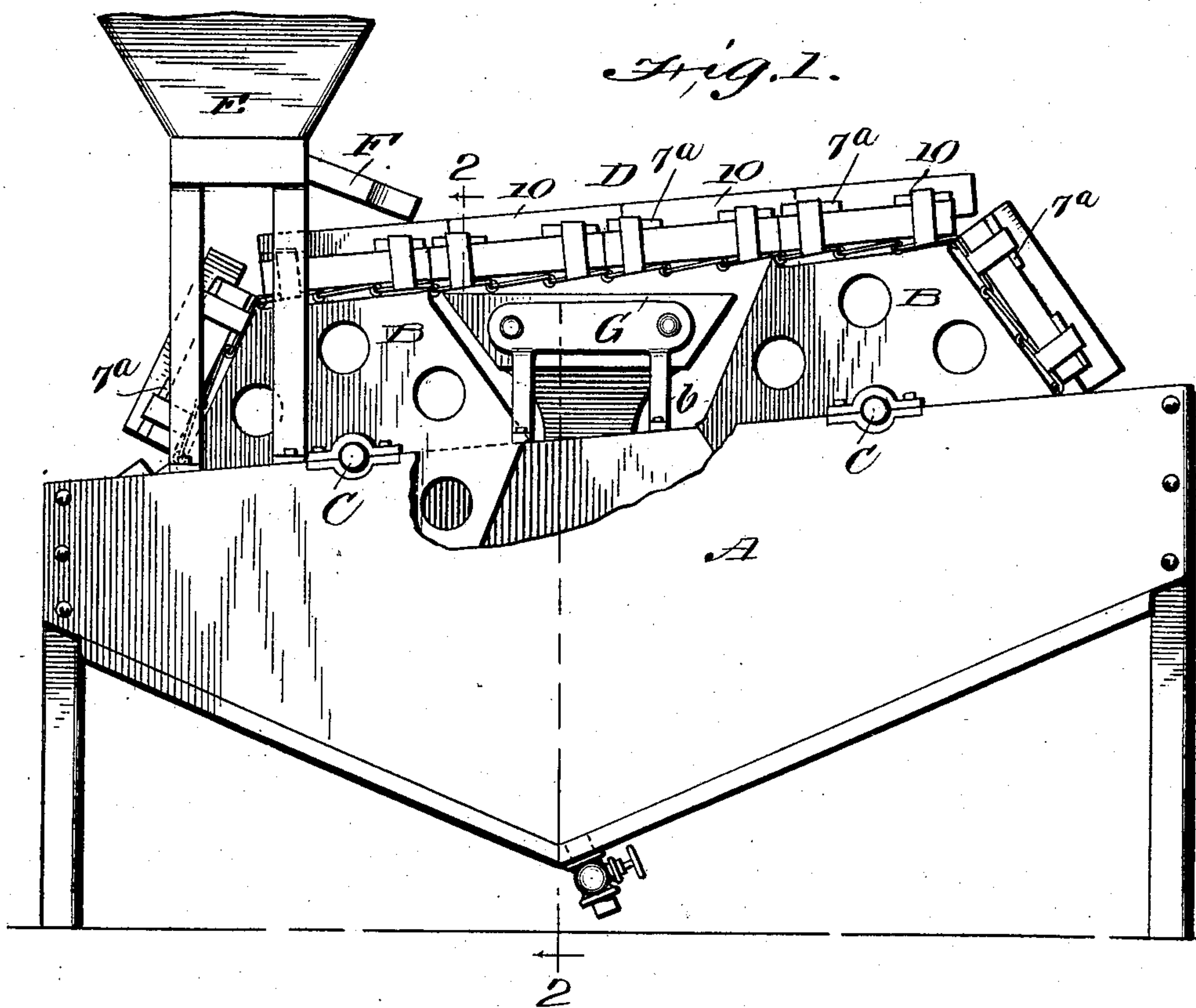
No. 889,673.

PATENTED JUNE 2, 1908.

F. FRANZ.  
ORE SCREEN.

APPLICATION FILED AUG. 27, 1907.

2 SHEETS—SHEET 1.



WITNESSES

*F. E. Barry*  
*G. A. Pettit*

INVENTOR

FRANK FRANZ

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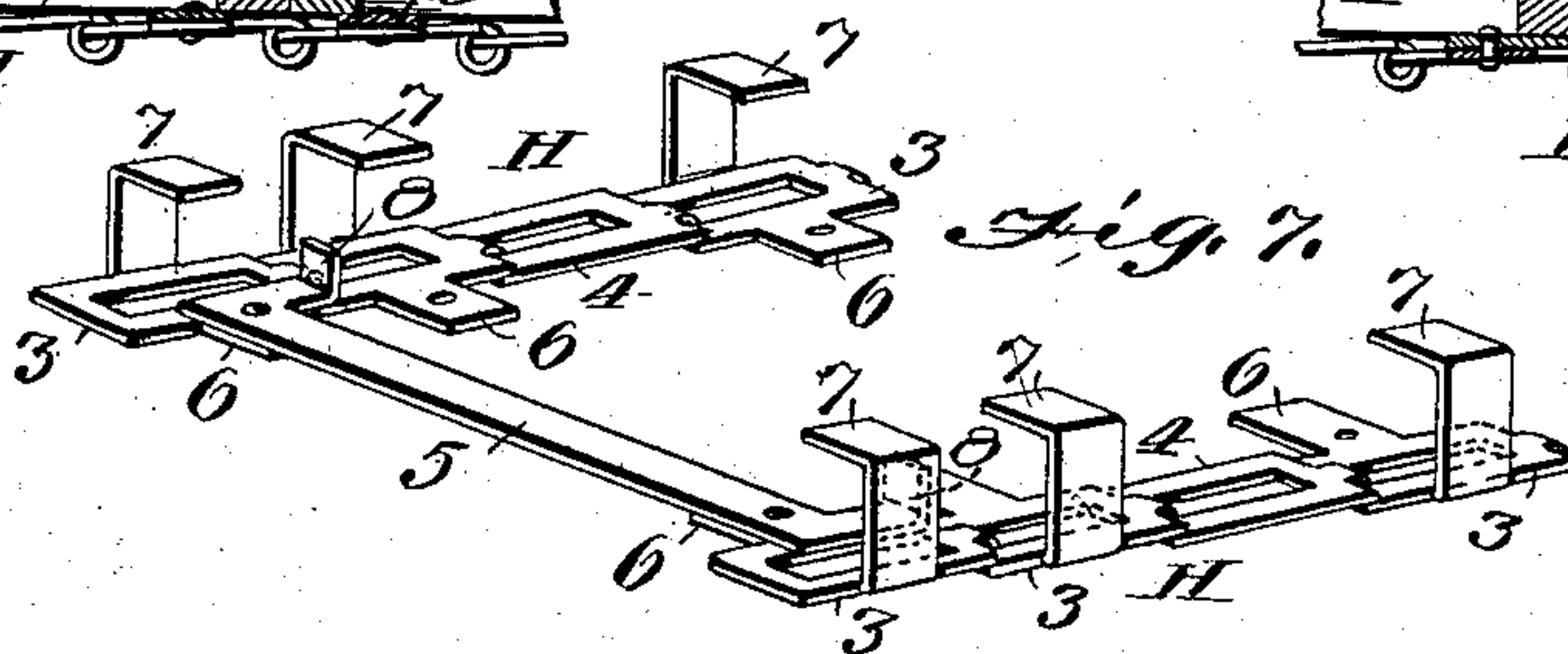
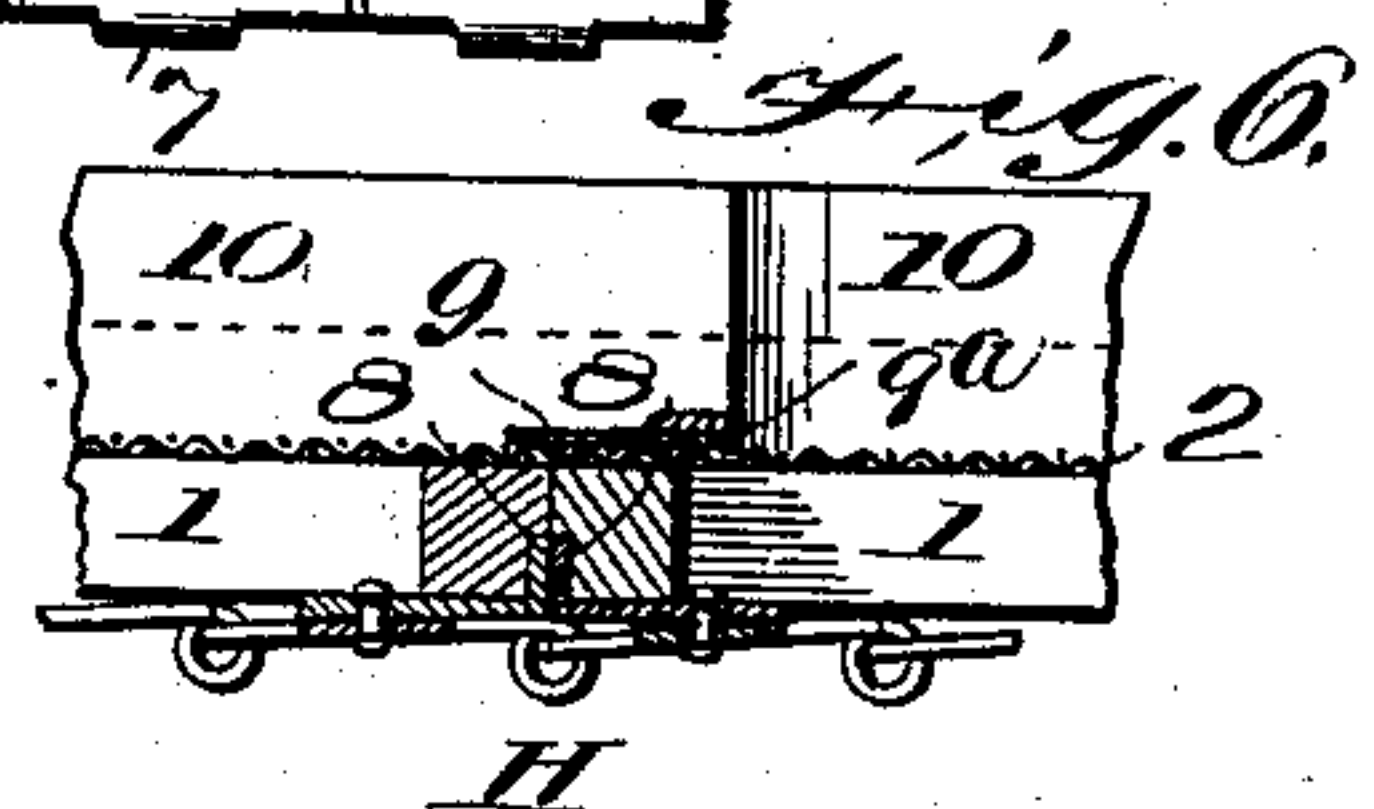
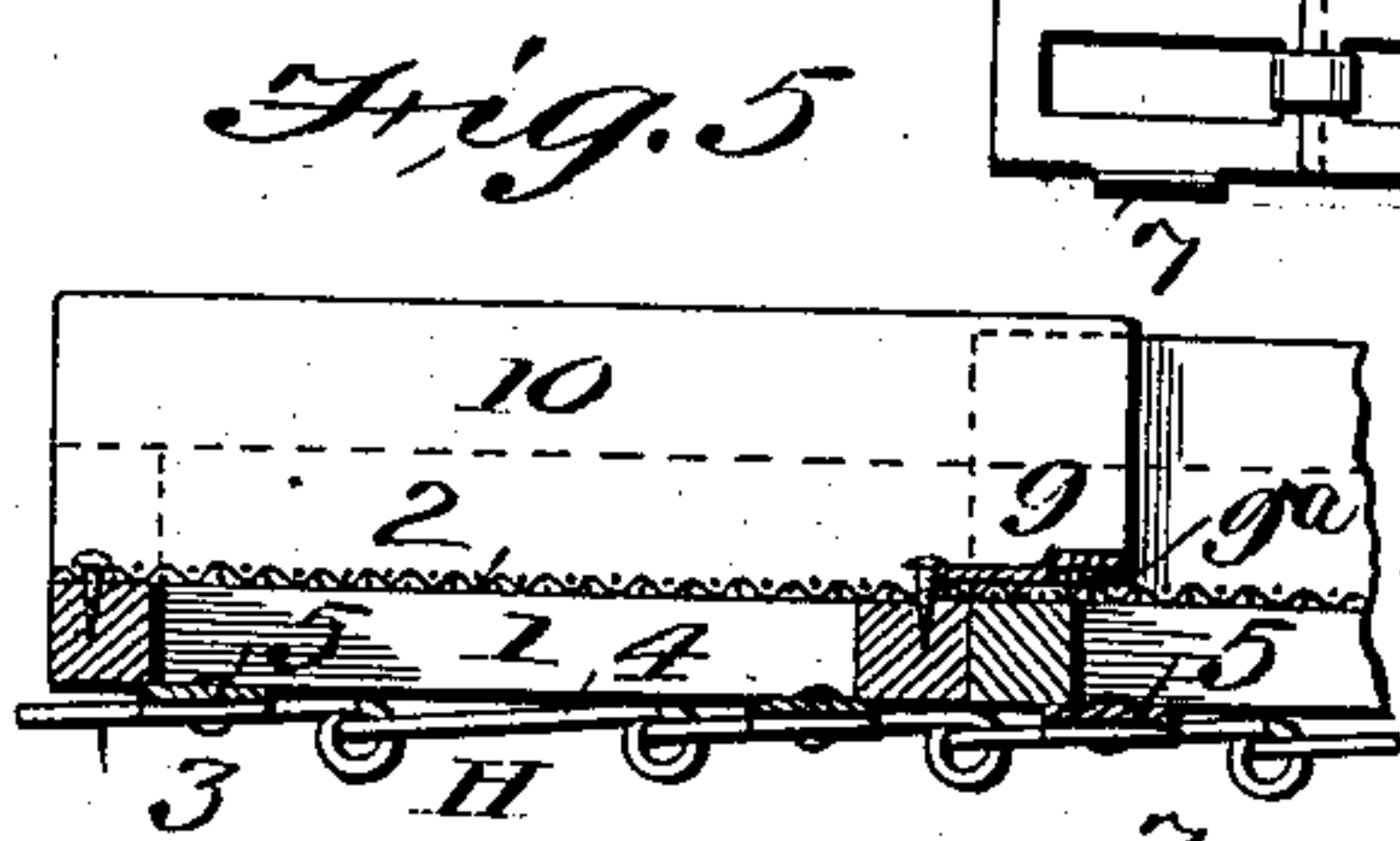
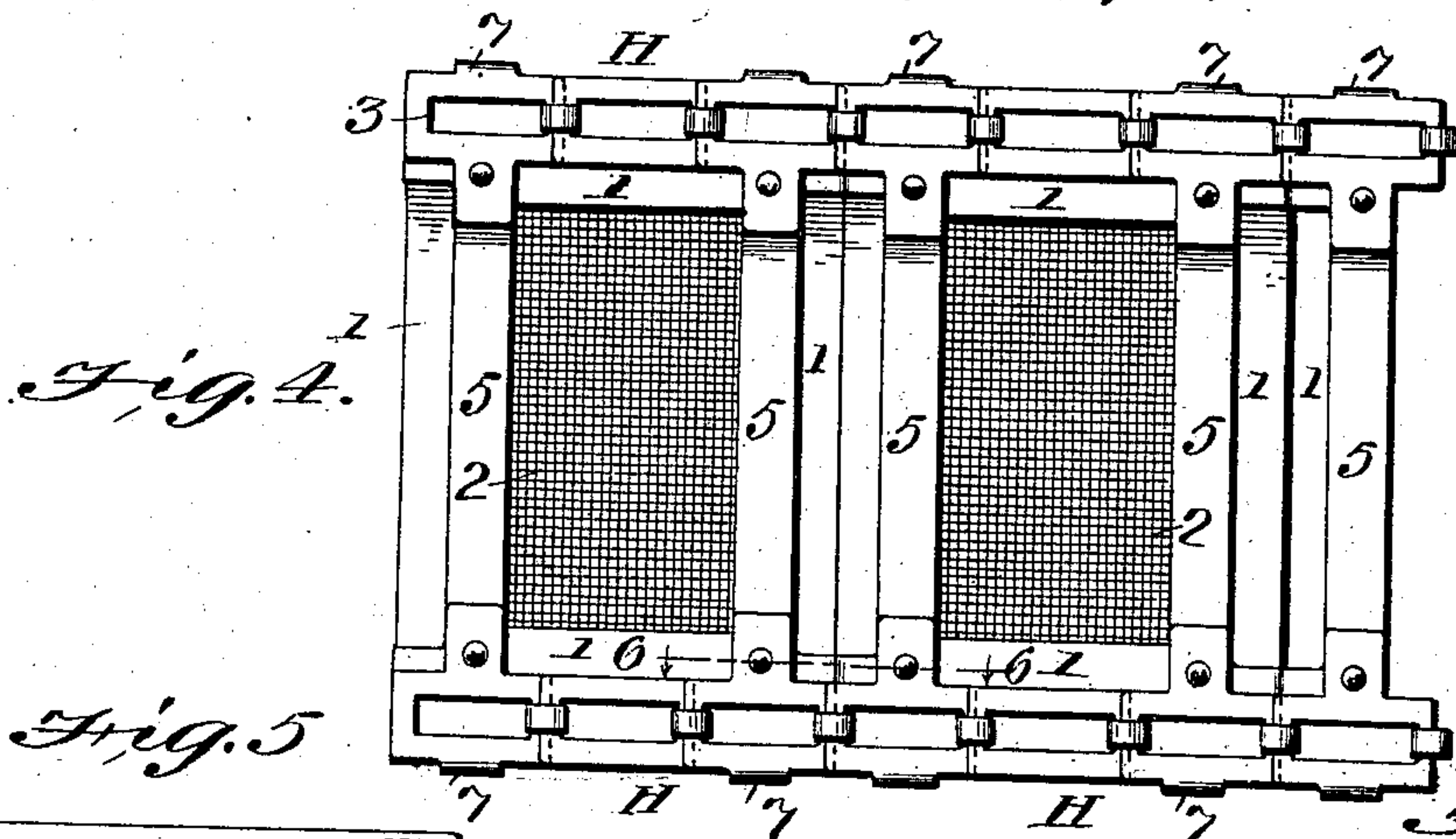
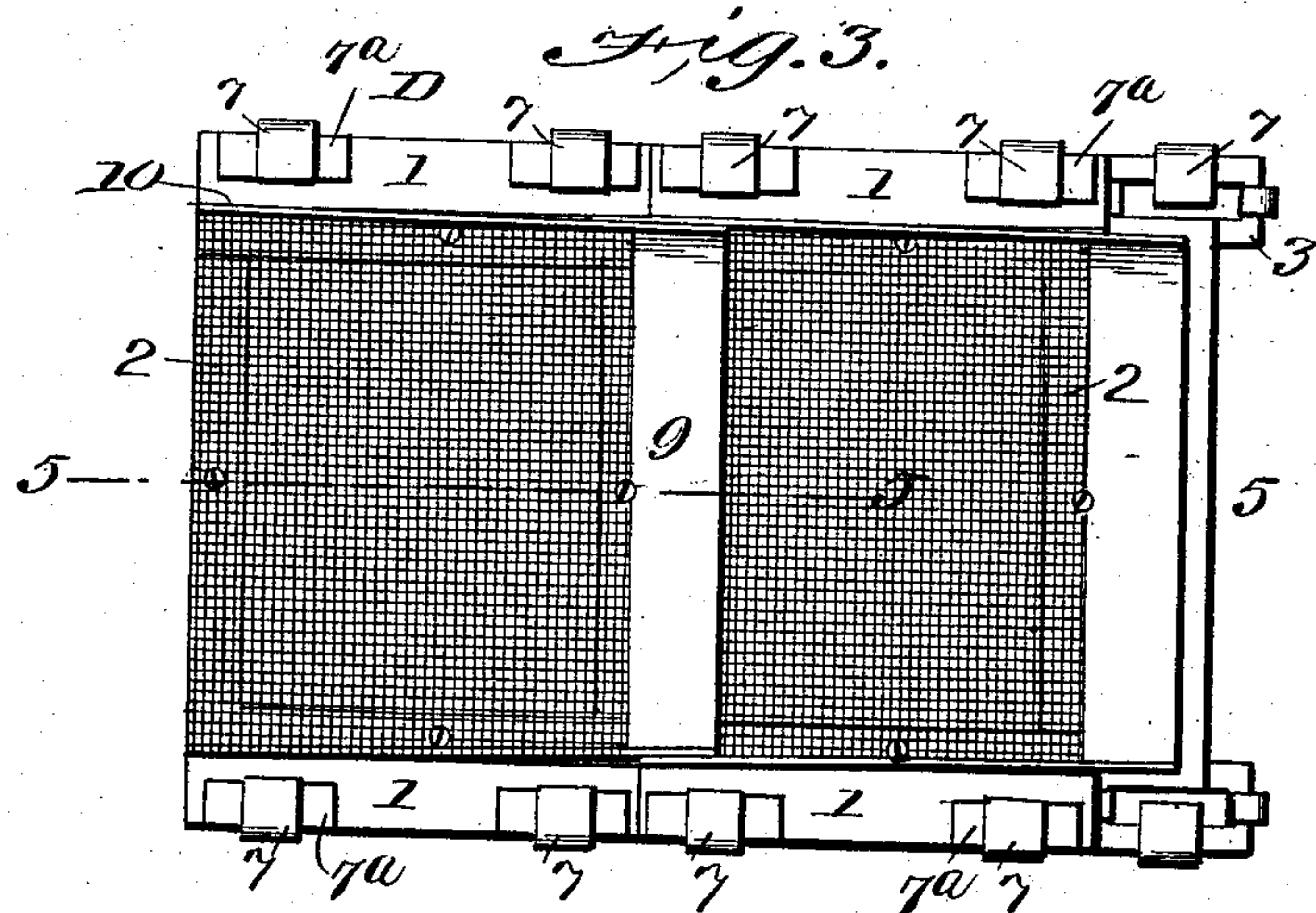
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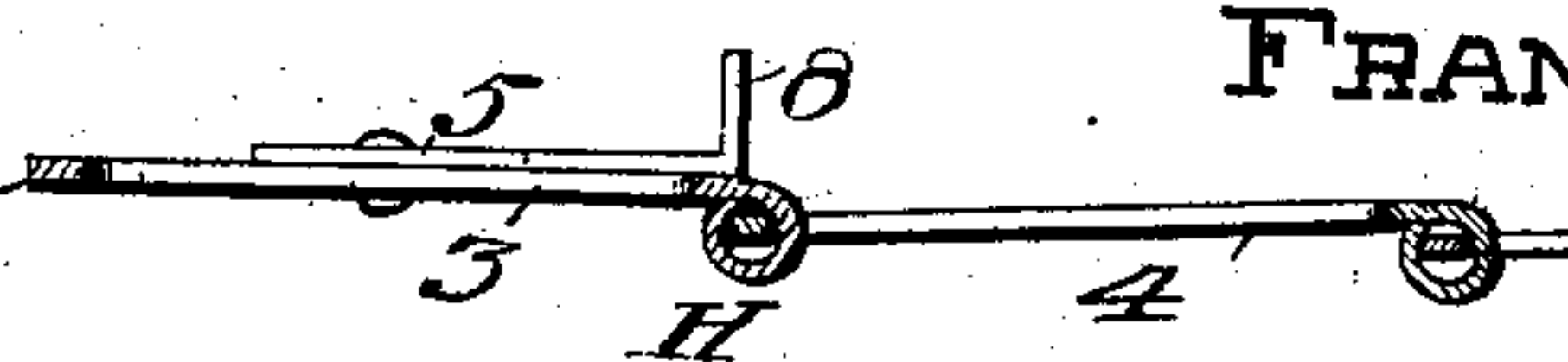
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2 SHEETS—SHEET 2.



WITNESSES  
*F. C. Barry*  
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*Fig. 8.*



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# UNITED STATES PATENT OFFICE.

FRANK FRANZ, OF BURKE, IDAHO.

## ORE-SCREEN.

No. 889,673.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed August 27, 1907. Serial No. 390,270.

*To all whom it may concern:*

Be it known that I, FRANK FRANZ, a citizen of the United States, and resident of Burke, in the county of Shoshone and State of Idaho, have invented certain new and useful Improvements in Ore-Screens, of which the following is a specification.

My invention is an improvement in screens for separating pulverized ore, sand, and other granular material.

The invention is embodied in the construction, arrangement, and combination of parts hereinafter described and claimed, the same being illustrated in the accompanying drawings in which

Figure 1 is a side view of the entire apparatus, a portion of the launder or ore receptacle being broken away. Fig. 2 is a vertical cross section on the line 2—2 of Fig. 1. Fig. 3 is a plan view of the sections of endless traveling screen apron. Fig. 4 is an inverted plan view of the same. Fig. 5 is a longitudinal section on line 5—5 of Fig. 3. Fig. 6 is a section on the line 6—6 of Fig. 4. Fig. 7 is a perspective view of the chains or means for connecting the screen sections to form the endless screen apron. Fig. 8 is a longitudinal section of a portion of one of said chains.

A indicates the launder, or ore-receiving box, upon which the apparatus embodying my invention is supported.

B indicates a pair of sprocket wheels mounted upon axles C that are journaled in boxes attached to the side portion of the launder A. Upon these pairs of sprocket wheels is arranged the endless traveling apron D which constitutes the chief or most important feature of my invention. A receiving hopper E provided with a spout F is supported upon the launder A and arranged to deliver pulverized ore, sand, dirt, gravel, etc. upon the endless apron B. In practice, water will also be delivered upon the apron by a pipe or pipes suitably arranged for the purpose. Above the middle portion of the launder a receptacle G is arranged having a side-discharge spout whose function is to receive and discharge laterally the finer portion of the ore or other material delivered upon the screen apron above, the coarser portion being carried on by the apron and discharged into the farther end of the launder A.

The screen apron is formed of what may be termed screen sections, and chains by

which they are flexibly connected so that they are adapted to be supported upon and travel on the sprocket wheels B. Each screen section comprises a rectangular wooden frame 1 and a screen proper 2. As indicated in Figs. 3 and 4, each rectangular screen 2 is secured by screws or other devices to the upper side of the wooden frame. The frames 1 are in turn detachably secured to parallel chains H—see especially Figs. 2 and 3. Each of the two parallel chains is formed of slotted links 3 and 4 whose adjacent ends are flexibly connected by hooks and eyes.

Certain of the links are connected by cross bars 5, as indicated in Figs. 4 and 7, the same being riveted at their ends to ears or lugs 6 projecting inward from the links proper. Each of the links 3 is further provided with a clasp 7—see especially Fig. 7—adapted to embrace the side bars of the wooden frames 1, as shown best in Fig. 2. These clasps are right angular in form and the upper intumed ends project over the top sides of the frame bars 1, high enough to receive wedges 7<sup>a</sup> that serve to fasten the chains and frames detachably together. To further prevent endwise movement of the screen frames 1 on the chains H, stops or abutments are provided, the same being formed as ears or lugs 8 at the end portions of the cross bars 5—see Figs. 6, 7, and 8.

From the foregoing description it will now be apparent that the endless apron D formed by the screen section frames and chains is adapted for support and to travel upon the sprocket wheels B. As shown in Fig. 1 the said wheels are hexagonal in form and provided at each corner with a tooth b which is adapted to enter a slot in the chain H, and, by such engagement with the links of the chain, to propel or carry the endless apron so that it travels continuously at a uniform rate of speed.

It will be understood that one set of the sprocket wheels is caused to revolve by applying power to its shaft C and that the other set of sprocket wheels serve as idlers, being turned by engagement with the apron B. As shown in Fig. 1, several sections of the screen apron are always simultaneously in alignment and thus form a screen bed of considerable length.

As before indicated, the finer material delivered upon the several sections will pass through into the middle spout G and the



coarser material will be carried by the apron and delivered into the end of the launder A, which is farthest from the receiving hopper E. In order to prevent the material finding its way into the joints of the frames, or in other words, between the meeting end bars of the screen frames 1, I provide a guard consisting of a narrow sheet metal plate 9—see Figs. 3 and 5—the same being secured by nails or screws on one of the end bars of the screen frame and overlapping the joint, as will be readily understood. A rubber strip 9<sup>a</sup> is laid under the free edge of the plate 9, to form an elastic packing for preventing coarse material escaping through the joint between the frames. The ends of the guard plate 9 are connected, and preferably formed integrally, with side plates 10, the same being formed of sheet metal and extending along the sides of the screen proper 2. These vertical side guards 10—see also Fig. 2—where perforated metal screens are used, metal screen can project over screen frame to form guard 9, in effect produce a screen guard which prevents lateral escape of the sand, ore or other material discharged upon the screen apron. If perforated metal screens are employed in place of woven wire they may be extended to project over the joint in the same manner as the plates 9.

It will be seen that by my improved apparatus I am able to effect in a cheap and expeditious manner the separation of the finer portions of pulverized ore and other material from the coarser and less valuable portions and a worn out or defective screen may be easily replaced by a new one, while the frames proper to which the screens are attached may be readily detached, by removing the wedges 7<sup>a</sup>, from the chains. I desire it to be understood that any suitable substitute for the sprocket wheels may be employed, the construction of the same in respect to details being of little importance.

What I claim is:

1. The improved endless screen apron comprising a series of sections formed of screens proper and rectangular wooden

frames upon which such screens are secured, and cross bars and parallel chains which said bars connect, the chains being formed of flat links to which the screen frames are attached, the ends of the frames abutting as shown and described.

2. The combination with a series of screen sections comprising rectangular frames and screens proper secured thereto, of parallel chains having links provided with clasp members 7 projecting over and detachably engaging the sides of the frames, the ends of the latter abutting, and sheet metal plates 9 overlying the joints between the frames, and vertical side guides 10 as shown and described.

3. The endless screen apron composed of rectangular wooden screen frames, and parallel chains composed of slotted links jointed together, some of said links having inwardly projecting lugs 6 and clasps 7 extending upward and over the side edges of said frames, and bars extending between and rigidly connecting the chains as described.

4. The combination of a series of rectangular screen sections and parallel chains formed of connecting bars and slotted links jointed together and having integral clasps 7 that embrace the sides of said frames and stops formed on said bars and engaging the ends of the screen frames and serving to prevent endwise movement of the same on the chains as described.

5. The combination with rectangular frames and screens proper secured thereon, of transverse connecting bars, parallel chains, composed of links jointed together and some of them having right angular clasps 7 formed of metal pieces extending over the sides of said frames, and wedges 7<sup>a</sup> inserted between the ends of said clasps and the upper sides of the frames whereby the latter are held detachably, as shown and described.

FRANK FRANZ.

Witnesses:

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H. L. HANSON.