

No. 620,371.

Patented Feb. 28, 1899.

D. J. SHELDRIK.
CONVEYER.

(Application filed Dec. 3, 1897.)

(No Model.)

2 Sheets—Sheet 1.

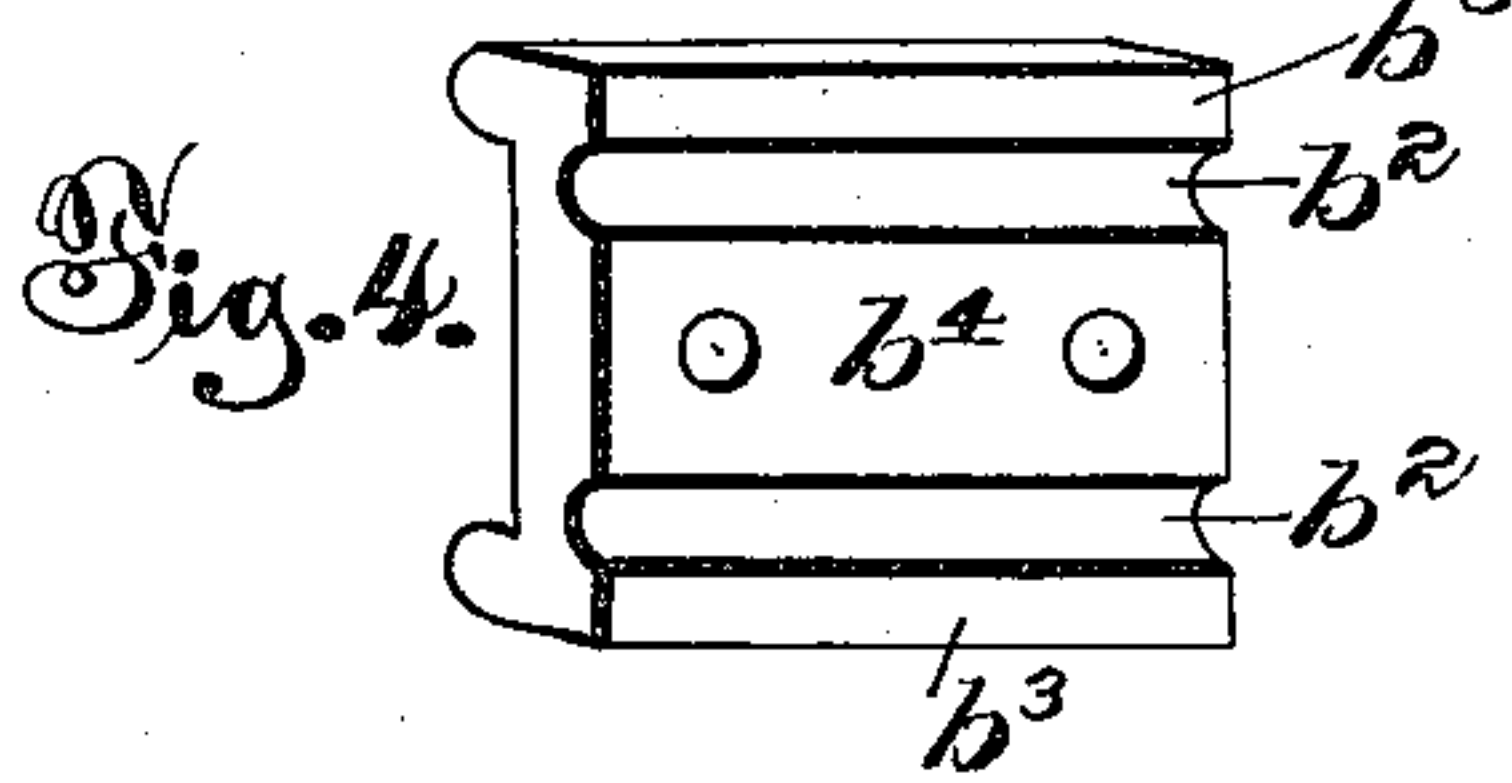
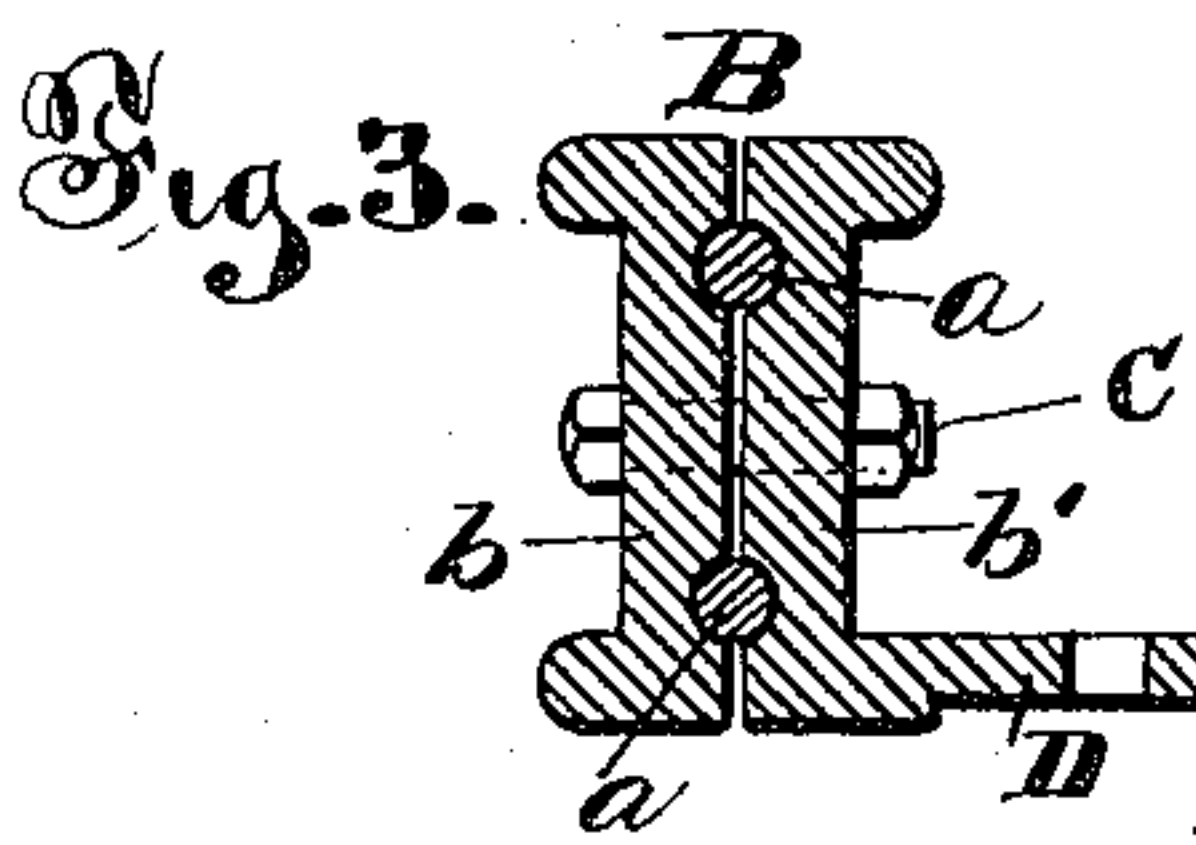
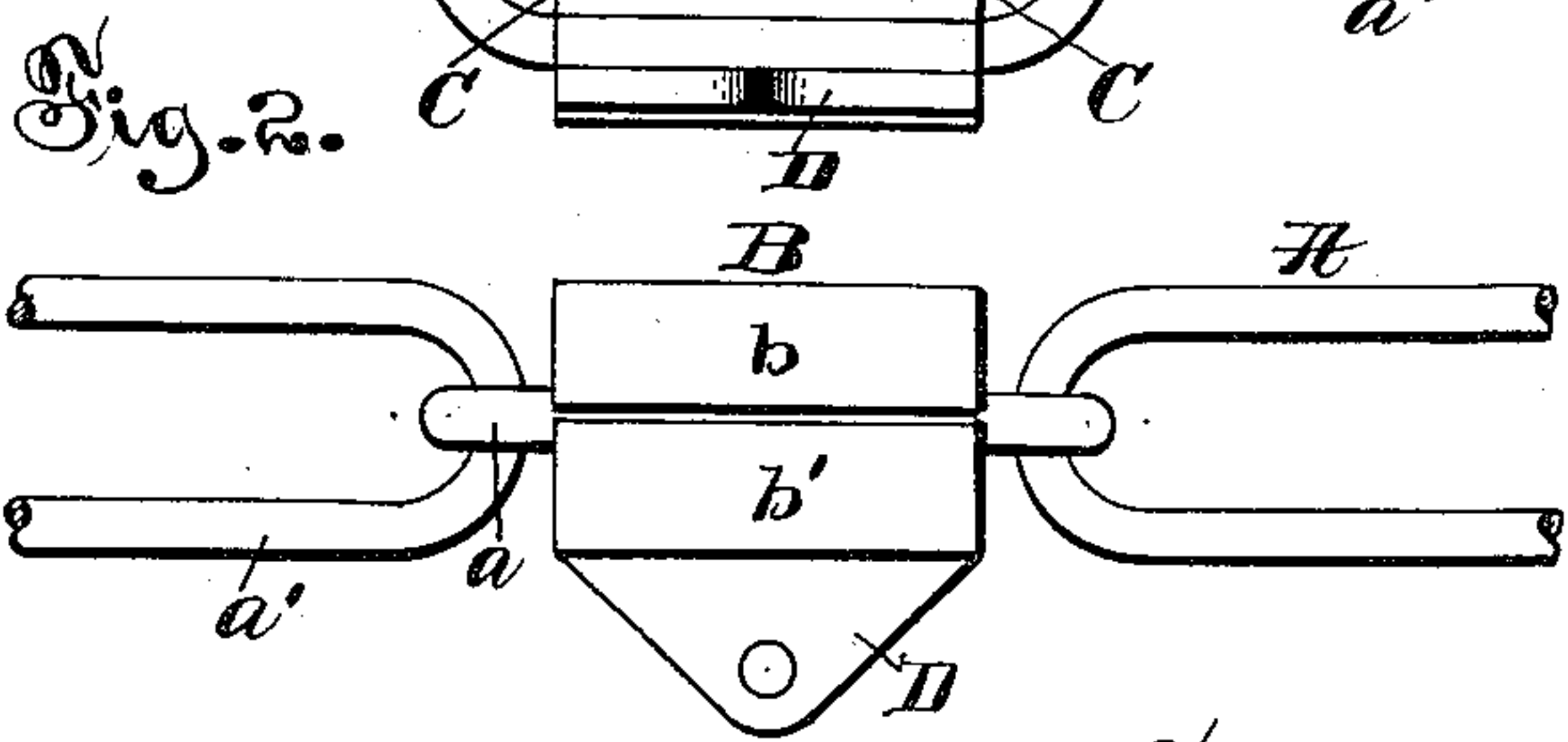
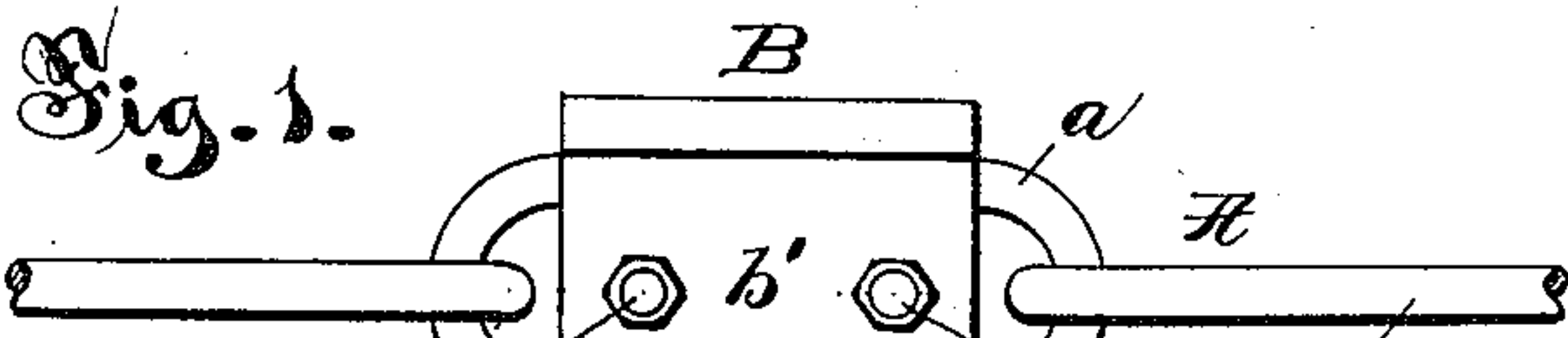


Fig. 5.

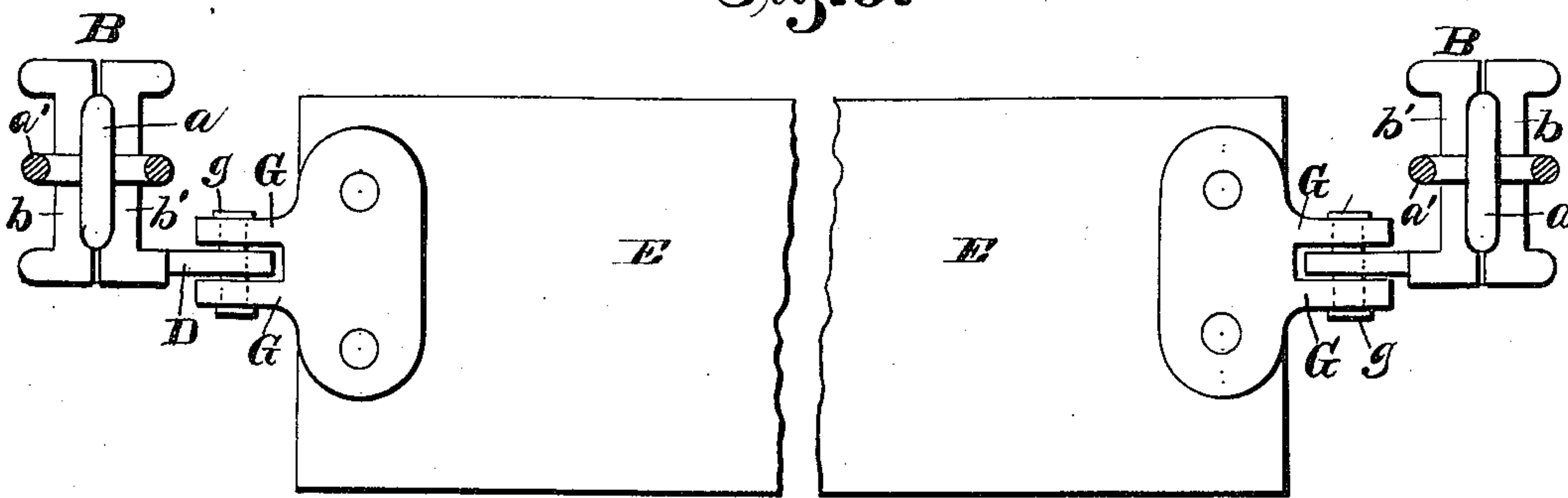


Fig. 6.

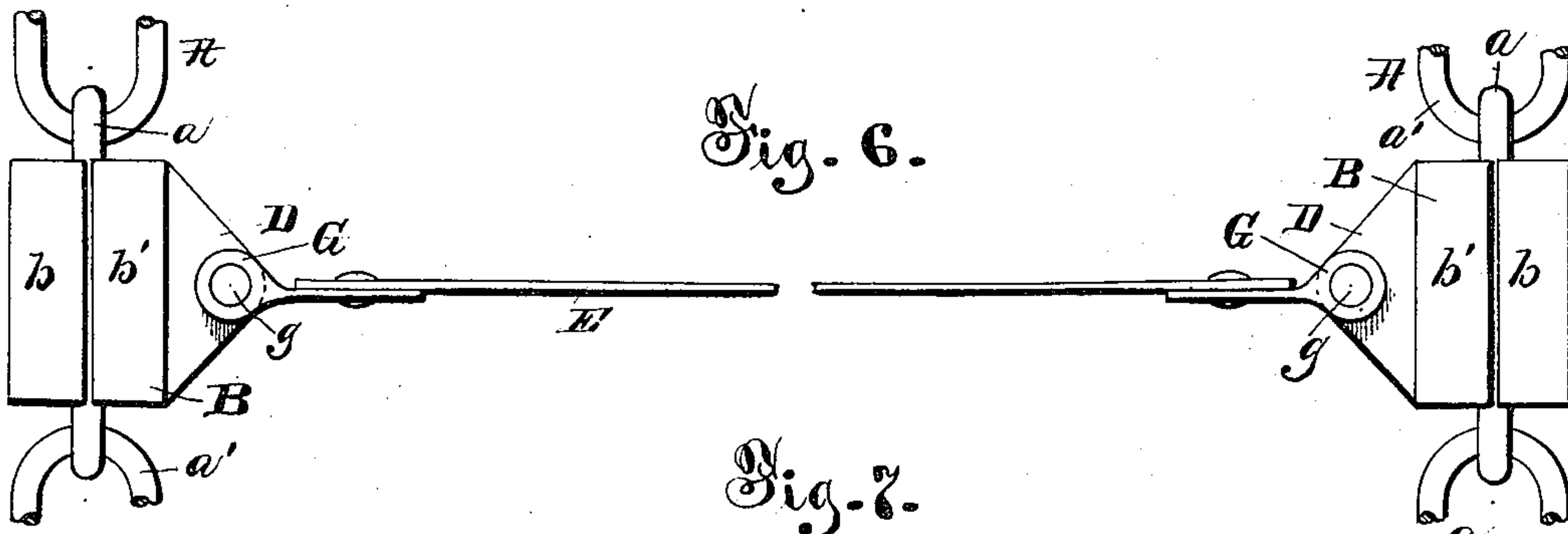
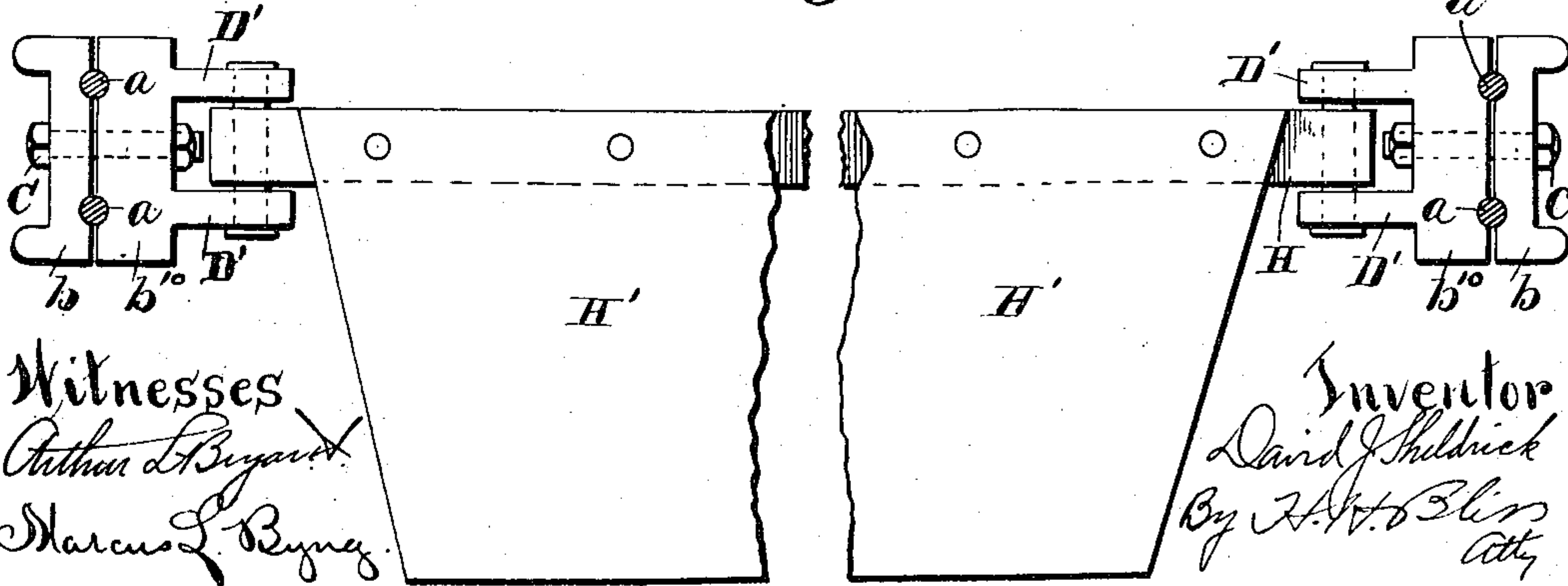


Fig. 7.



Witnesses

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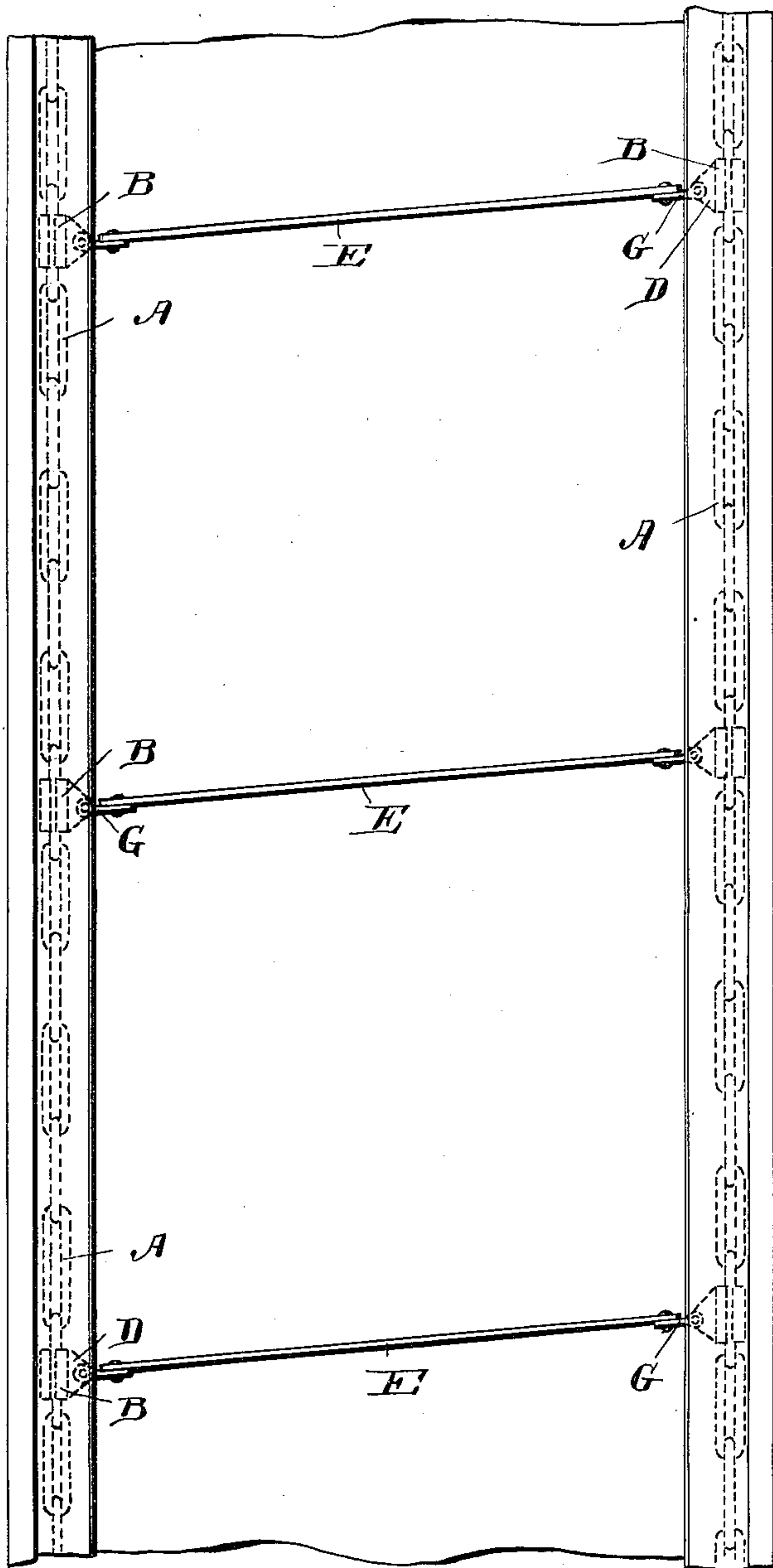
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2 Sheets—Sheet 2.

Fig. 8.



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CONVEYER.

SPECIFICATION forming part of Letters Patent No. 620,371, dated February 28, 1899.

Application filed December 3, 1897. Serial No. 660,703. (No model.)

To all whom it may concern:

Be it known that I, DAVID J. SHELDRICK, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Conveyers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side view of a section of chain and showing the body part of one of my improved attachments. Fig. 2 is a top plan view of the same. Fig. 3 is a cross-section, and Fig. 4 shows the interior of one of the parts of the attachment detached. Fig. 5 shows a section of a conveyer having a flight secured to the chain by the attachment when use is made of one form of intervening part. Fig. 6 is a plan view; Fig. 7, a section of a conveyer having a flight secured by the attachment, with a modified form of intervening part. Fig. 8 is a conventional illustration in plan of a conveyer embodying my improvements.

Heretofore numerous ways have been followed or proposed in the fastening of flights, scrapers, buckets, &c., to conveyer-chains of the class known as "cable-chains" or "coil-chains"—that is to say, chains made up of similar links, each formed of a round rod with ends welded together; but I have found serious disadvantages to be incident to each of these that are known to me.

A indicates the chain as a whole in the accompanying drawings, it being made up of the links a and a' , formed and joined in the way described, those at a being at right angles to those at a' .

B indicates the body part of the attachment. It is made up of two counterparts b b' . These are approximately as long as the open space within the vertical links a . They are formed with grooves or sockets b^2 , extending from end to end, there being an edge flange at b^3 b^3 and a core or central flange at b^4 . When the two parts b b' are brought together, they can inclose the two bars of one of the

links a , the latter lying in the grooves b^2 . The edge flanges b^3 and the cores b^4 approach each other, but can be left spaced in such way that a powerful grip can be attained upon the bars of the link. Through the link—that is, between said bars—and through the cores b^4 pass the bolts C C, by which the binding of the parts together is effected.

The inner half b' of the attachment is cast with an inwardly-projecting plate D, as shown in Figs. 2, 3, 5, and 6. In a two-chain conveyer the attachments are arranged in pairs, those of each pair opposite to each other and with the plates D projecting inward or toward each other. Each plate is provided with an aperture for a pivot or a hinge.

E indicates the scraper or flight. As shown at Figs. 5 and 6, it is rectangular in form and at each end is provided with a bracket-piece riveted thereto and carrying a hinge-plate G. Hinge pintles or pivots at g are passed through the plates G and D.

In Fig. 7 a modified mechanism is shown. In this case each of the inner parts b^{10} of the attachment is formed with two inwardly-extending hinge-plates D' D', and those upon one side are connected to those upon the other by a cross-bar H, to which is secured the flight or scraper H'. With a construction of this sort there is a firm support insured for the flight or scraper and also a secure fastening of the attachment to the chain-link. The link is surrounded by the gripping metal, and the bolts are passed between the side bars and are in such position as to obviate the expanding of the chain laterally or providing obstructions in the passage around the wheels; but it will be seen that as the flights are pivotally connected with each of the supporting and propelling chains each can move relatively to said chain about its pivot to accommodate itself to any slight variation in the speed of the chains, &c. It will also be seen by reference to the drawings that the flights are supported between the chains and that the attachments by which the flights are connected do not extend beyond the outer lines of the links a' —that is, the attachment lies between the outer side lines of the chain and does not increase the width thereof at any point.

I am aware that flights or cross-bars have been connected to two parallel chains by having the end part of each flight or bar extend entirely across the longitudinal links of each chain, as illustrated, for instance, in Patent No. 231,793, to S. W. Greenleaf; in Patent No. 5,145, to Cowling, and No. 285,664, to F. Pearce. I do not claim such devices as of my invention.

I am also aware that it has been heretofore proposed to construct special links for the chains, each link to be relatively longer than the majority of the links in the chain and each to have its side longitudinal bars flattened and perforated, so as to receive a hinge-pin for the flight, and combine with said links a flight with relatively-elongated ends adapted to receive the aforesaid pins in slots in the ends of the flight. These are types of the devices above referred to as heretofore used or proposed and upon which the present construction is an improvement. In the present case the devices are adapted to be applied to any one of the links in an ordinary cable-chain, and the axes of the flights are on vertical lines inside of the chains. The attachments require no special construction of link at any point. The chain can be made up and kept in stock in sections of considerable length, and when varying orders are received, some for conveyers with the flights at one distance apart and others for conveyers with flights at other distances, said orders can be rapidly filled without waiting to make up special lengths of chain - sections with specially-constructed links to receive the attachments. The pivot-pins are situated inside of the chain-links and do not require perforating or otherwise weakening or altering any of the links.

It frequently happens with heavy scraper-conveyers that for either of several reasons, such as the unequal loading of the flights or the jerking action upon one chain, the links on one chain or the other fail to "track" properly on the wheel and take the sprocket-teeth unevenly. At such instants if either chain is affected by the leverage of the flight the distorting or twisting action upon the links just commencing to engage with the sprocket-wheels is increased and the whole conveyer is often thrown from the wheels. By having the axes of pivotal attachment of the flights at lines inside of the chains this distorting or twisting action is avoided, and even though one of the flights should be slightly in advance of the other the attachment-links at each side are largely relieved of the strain of leverage and the chains engage with and remain upon the wheel.

What I claim is—

1. A conveyer having in combination the two chains, each made of the links a and a'

at right angles to each other, the attachments B, arranged in pairs, one of each pair being secured to a link a on one chain and the other to an opposite similar link on the other chain, each attachment being formed of two parts, one part of each attachment having an inward-projecting hinge-plate, the bolts passing through the link a and binding together the parts of each attachment and the flight having a hinge connection with each of the hinged plates on opposite attachments, substantially as set forth.

2. In a conveyer, the combination of two parallel cable-chains, a flight or scraper adapted to extend transversely between said chains, and two attachments detachably connected to the ends of the flight by vertical pivots inside of the chain-links and each adapted to engage with a link in the adjacent chain, substantially as set forth.

3. In a conveyer, the combination of two parallel cable-chains, having adjacent links arranged at right angles to each other, an attachment detachably engaging a link in one of said chains a corresponding attachment on the other chain, each of said attachments lying within the outer side lines of the chain to which it is attached, and a flight connected to said attachments by vertical pivots inside the chain-links, substantially as set forth.

4. In a conveyer, the combination of two parallel cable-chains, an attachment detachably connected to a link in one of said chains, and having an inwardly-projecting flange or hinge-plate, a similar attachment detachably connected to a link in the opposite chain, a scraper-flight provided at its ends with laterally-projecting ears or lugs, and pins pivotally connecting said ears or lugs on the flight with the inwardly-extending flanges on the chain attachment on lines inside the chains, substantially as set forth.

5. In a conveyer, the combination of two parallel cable-chains, an attachment encircling and secured to one link of one of said chains and having an inwardly-extending flange or lug and a similar attachment connected to a link in the other chain, a flight arranged between the chains, and provided at each end with a pair of laterally-projecting lugs or ears, the flanges or lugs on the chain attachments being adapted to lie between the lugs on the adjacent end of the flight, and pins pivotally connecting said lugs on the flight with the flanges on the attachments, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

DAVID J. SHELDRIK.

Witnesses:

F. E. COLTON,
A. D. SHAW.