

(No Model.)

2 Sheets—Sheet 1.

A. S. VOGT.
EXHAUST MUFFLER FOR LOCOMOTIVES.

No. 407,139.

Patented July 16, 1889.

FIG. 1.

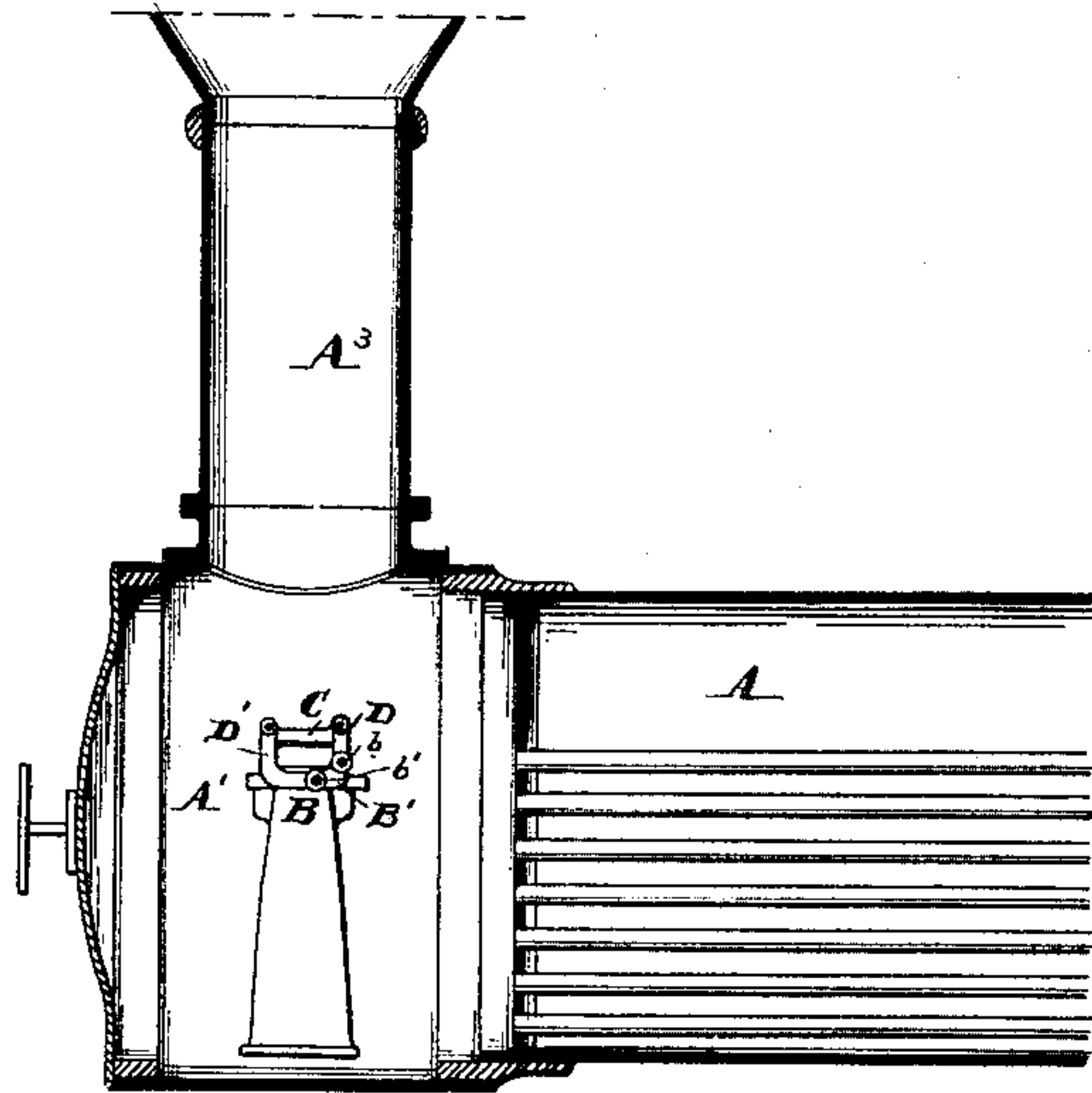


FIG. 2.

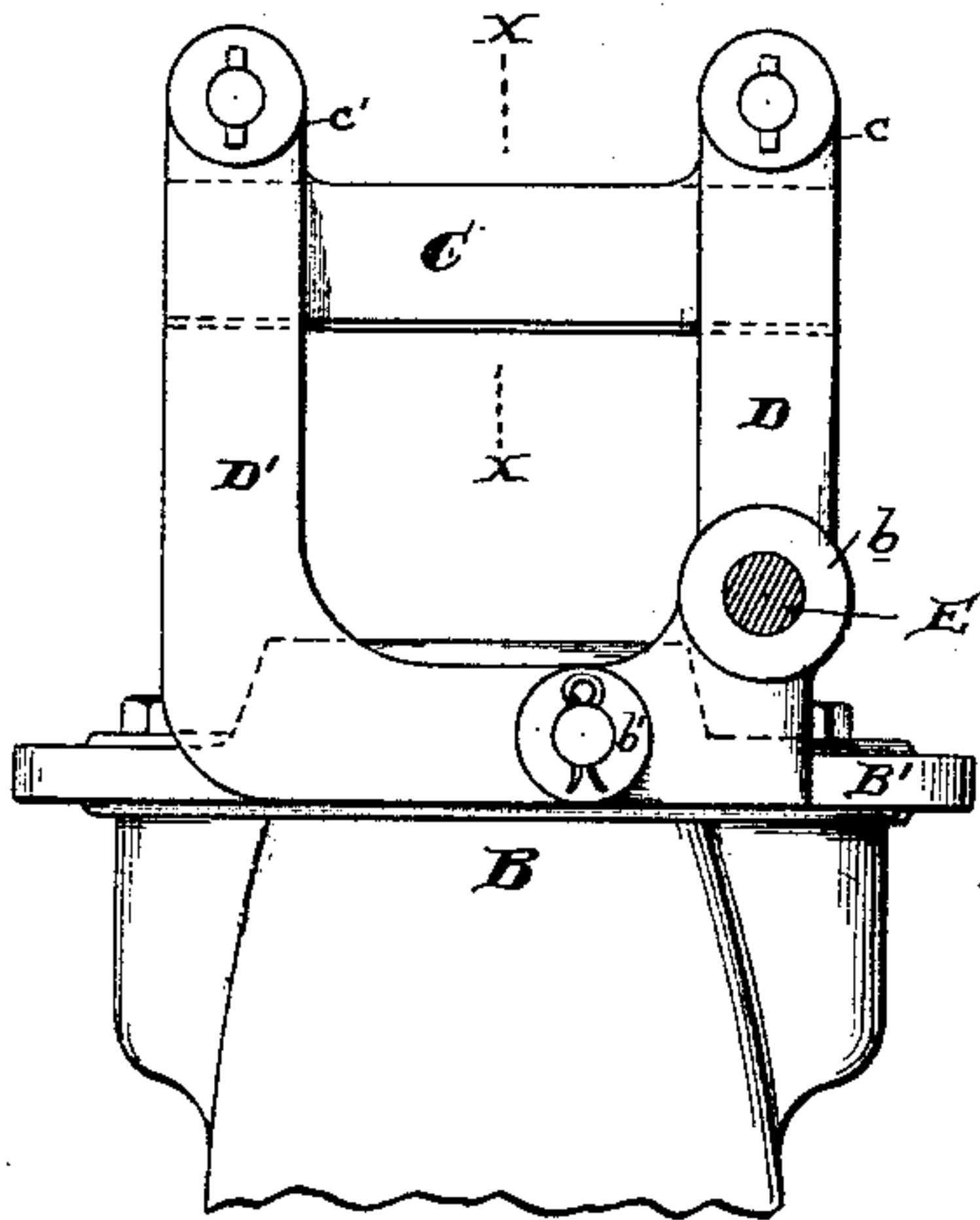


FIG. 3.

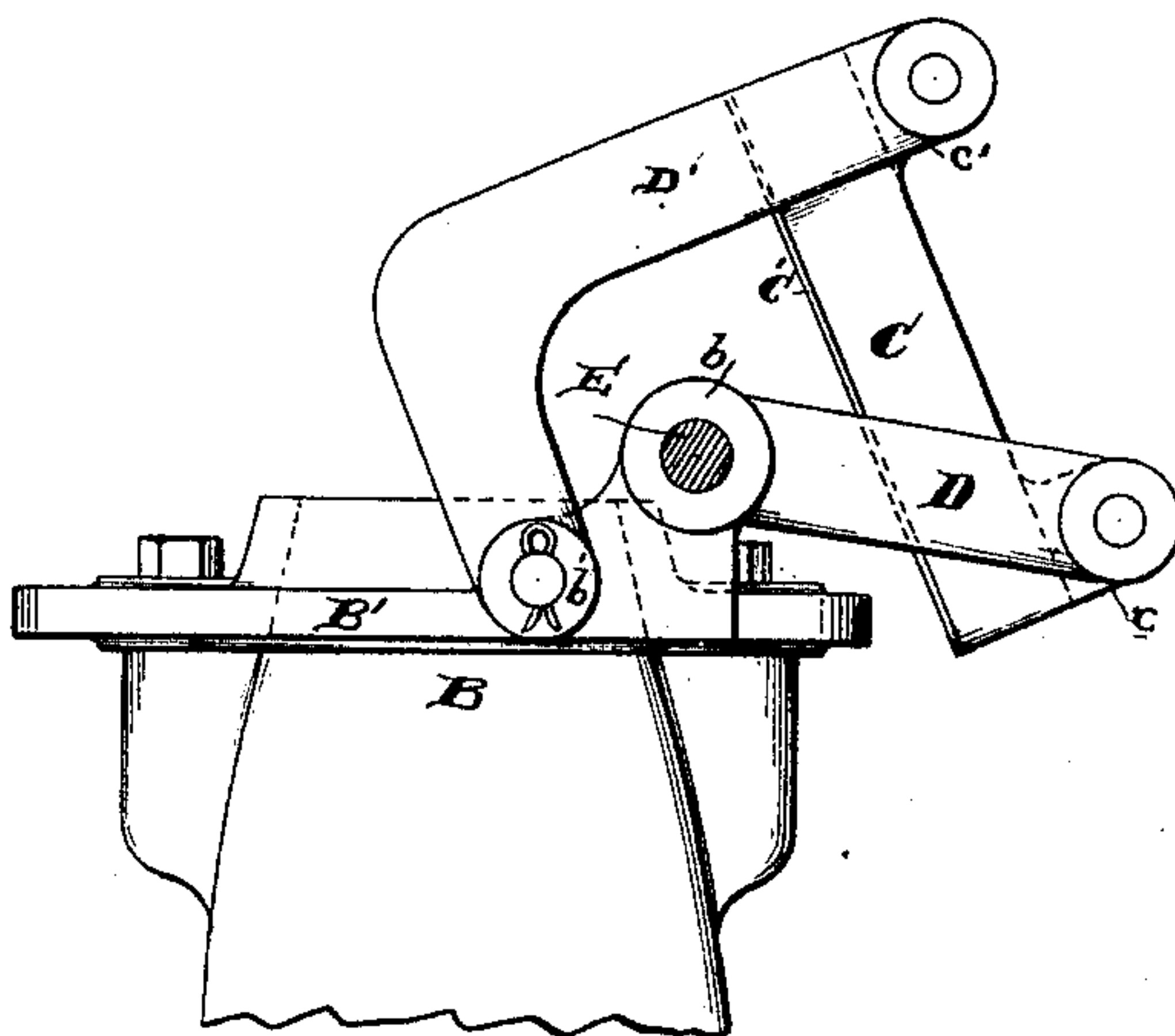


FIG. 4.

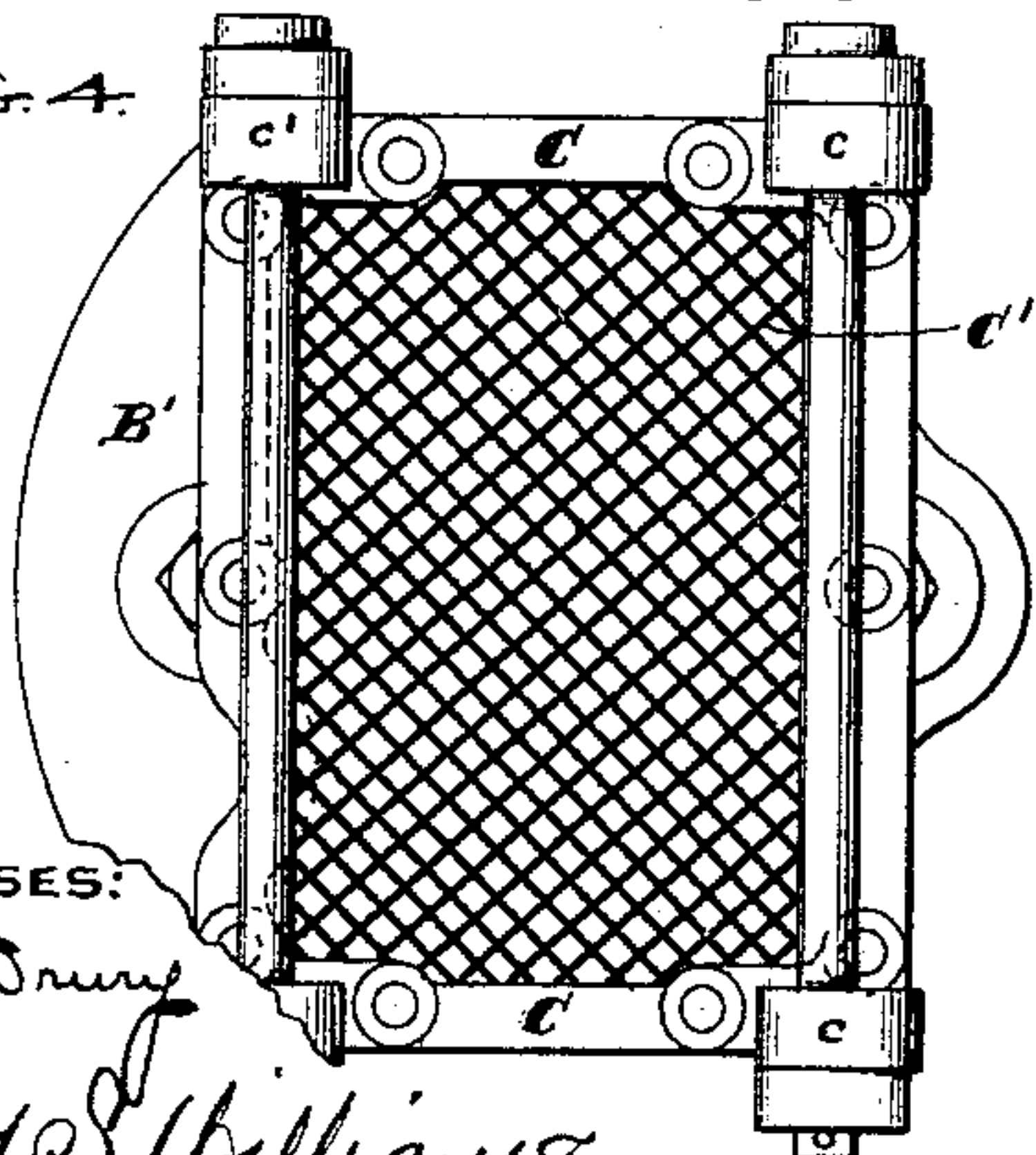
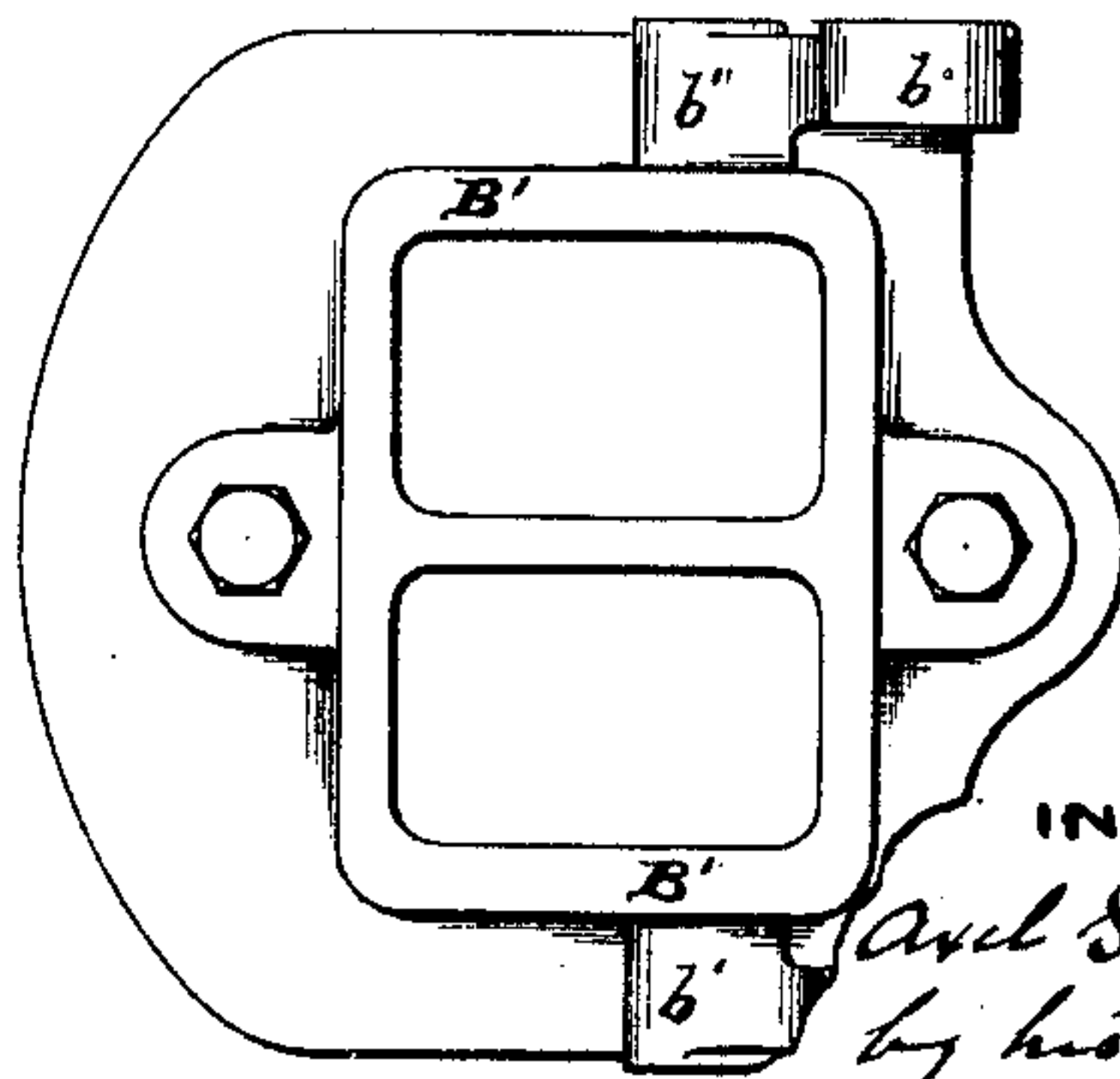


FIG. 5.



WITNESSES:

Henry Denny
David S. Williams

INVENTOR:

And S. Vogt
by his attorney
Francis T. Chamber

(No Model.)

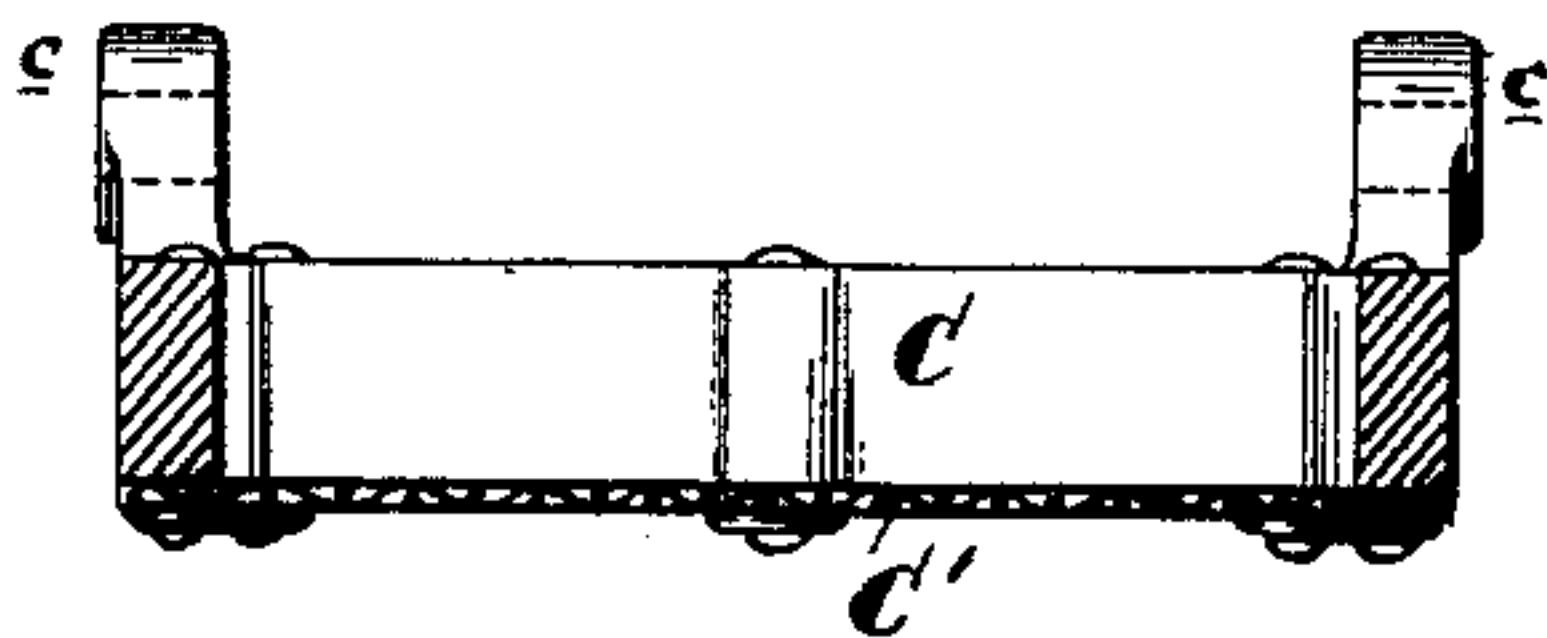
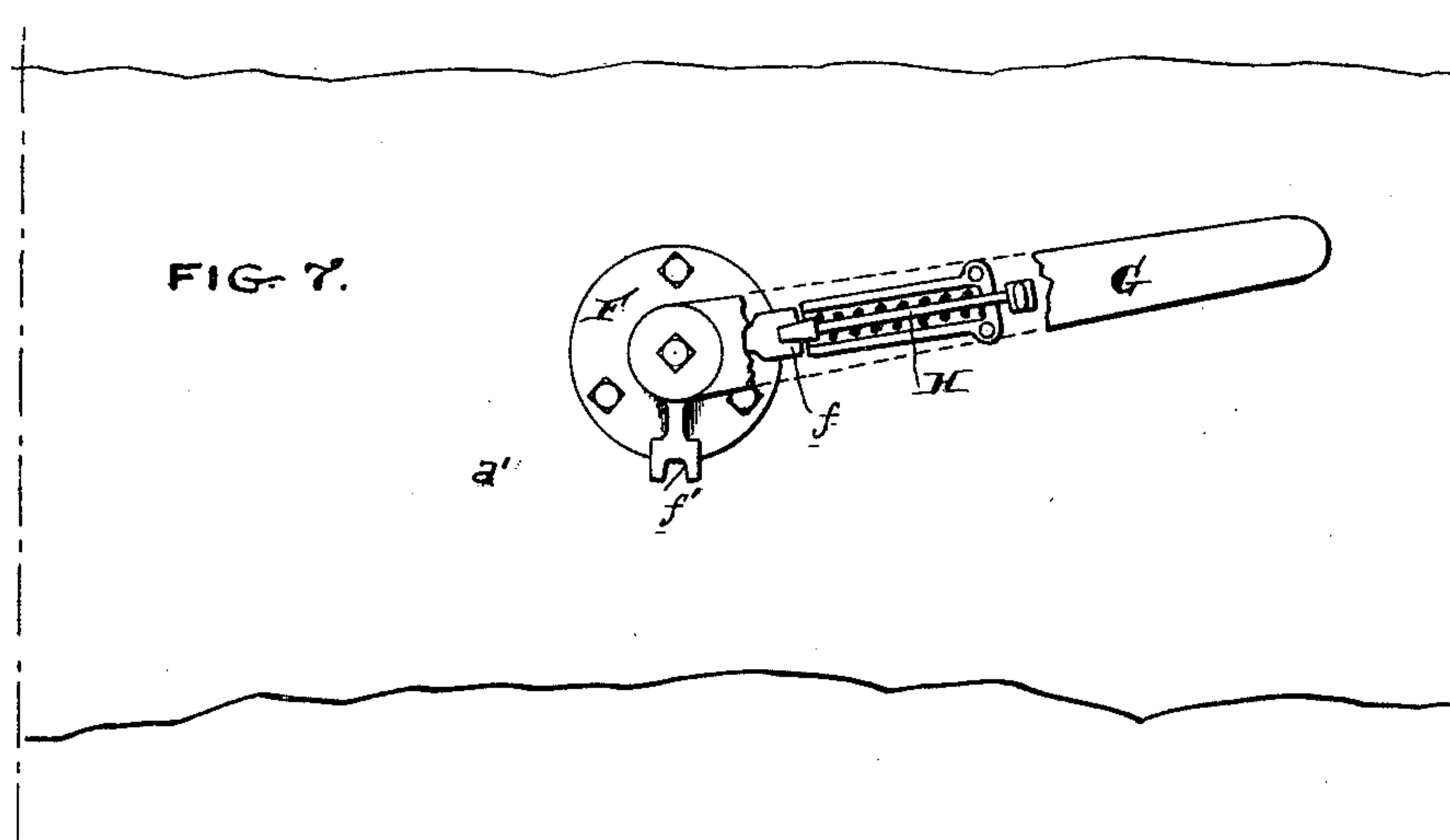
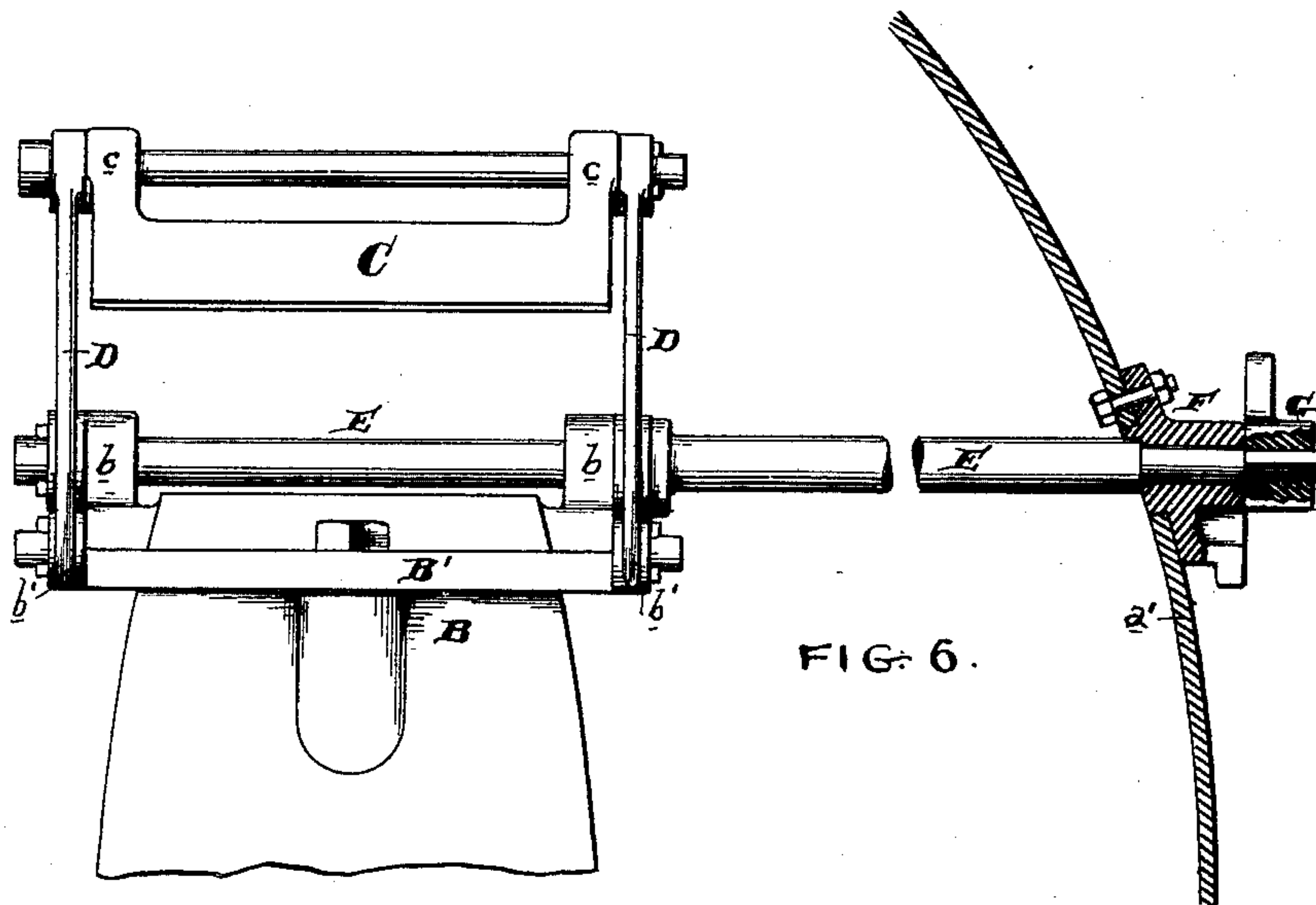
2 Sheets—Sheet 2.

A. S. VOGT.

EXHAUST MUFFLER FOR LOCOMOTIVES.

No. 407,139.

Patented July 16, 1889.



WITNESSES:

Henry Dwyer
David S. Williams

INVENTOR:

Axel S. Vogt,
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UNITED STATES PATENT OFFICE.

AXEL S. VOGT, OF ALTOONA, PENNSYLVANIA.

EXHAUST-MUFFLER FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 407,139, dated July 16, 1889.

Application filed April 15, 1889. Serial No. 307,243. (No model.)

To all whom it may concern:

Be it known that I, AXEL S. VOGT, a subject of the King of Sweden, residing at Altoona, county of Blair, State of Pennsylvania, have invented a new and useful Improvement in Exhaust-Mufflers for Locomotives, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to the construction of a muffle or a noise-deadening device to be applied to the exhaust-nozzle of a locomotive, and my object is to improve the construction of devices of this character.

The muffle as used by me consists of a perforated screen arranged so that it can be placed directly over the exhaust-nozzle of the engine, and so fitted to the nozzle that it can be thrown to one side when it is not desirable to have it in use. In these general features my device does not differ from devices for the same purpose which have heretofore been designed; and my invention relates particularly to the devices by which the perforated screen is secured to the nozzle and given the necessary capacity for adjustment with respect thereto.

The novel features of my invention are hereinafter clearly pointed out in the claims, and they will best be understood after a description of the drawings, in which my improvement is illustrated in the most perfect form in which it has been embodied and applied to use.

Reference being now had to the drawings, Figure 1 is an end view of a locomotive-boiler and smoke-box, showing the exhaust-nozzle situated in the smoke-box and provided with my improved muffle. Fig. 2 is a side view of the exhaust-nozzle with a muffling-screen attached to it by means of my improved devices, the said screen being in the position for use. Fig. 3 is a similar view showing the screen thrown back over the nozzle. Fig. 4 is a plan view of the devices shown in Fig. 2 and in the position which they occupy in the said figure. Fig. 5 is a plan view of the exhaust-nozzle with the screen removed. Fig. 6 is a view of the exhaust-nozzle and screen, showing also the actuating-shaft by which the

screen is operated in the construction which I prefer to use. Fig. 7 is a view of the lever by which the actuating-shaft is operated, showing a spring-catch on the said lever and detents secured to the stuffing-box through which the actuating-shaft passes from the inside of the smoke-box; and Fig. 8 is a sectional view of the muffling-screen.

A is the boiler of a locomotive, A' the smoke-box, and A³ the smoke-stack, *a'*, Figs. 6 and 7, indicating the wall of the smoke-box. B is the exhaust-nozzle, B' being a casting secured on said nozzle and adapted for the convenient affixing of the muffling-screen. As shown, lugs *b b* are formed on the casting B' to afford bearings for the shaft E, and other lugs *b' b'* are formed on the said casting, preferably close to and a little below the lugs *b*, for the purpose hereinafter described.

C is the muffling-screen, C' being a perforated diaphragm secured, as shown, on a cast rim, and said rim being provided at or near its four corners with lugs *c c* and *c' c'*, to which the pivoted lugs, hereinafter described, are attached.

D D are links pivoted to the opposite lugs *c c* at one side of the screen C and at their other end squared and secured to the shaft E, passing through the lugs *b* of the nozzle-casting B'. The attachment of these links to the actuating-shaft E is desirable; but some of the advantages of my improved construction would still exist if the said links were pivoted to the lugs *b* in any other way and different means provided for moving the screen.

D' D' are a second pair of links pivoted to the lugs *c' c'* of the screen C at one end and to the lugs *b' b'* at their other end. Preferably these links are made L shape, as shown, for the reason that when so constructed they permit the screen to be thrown farther back than if straight.

E, as already stated, is an actuating-shaft journaled in the lugs *b* and passing out through the wall *a'* of the smoke-box through a stuffing-box F, as shown in Fig. 6. On this stuffing-box are formed detents *f f'*, and to the end of the actuating-shaft E is secured a lever G, upon which is a spring-catch H, arranged to engage with the detents *f f'*, as shown in Fig. 7. When the lever G is in the

position shown in Fig. 7, with its catch H engaging with the detents *f*, the muffling-screen C is held above the exhaust-nozzle in the position shown in Fig. 2. By moving the lever G
5 downward, so that its catch will engage with the detent *f'*, the links D turn with the actuating-shaft E and the muffling-screen is thrown to one side of the exhaust-nozzle, as is illustrated in Fig. 3.

10 An important advantage of my construction, by which the muffling-screen is secured to the exhaust-nozzle by the four pivoted links, arranged in pairs, as shown, is that the screen is securely and firmly held in this position, and the pressure of the escaping steam
15 upon it has little or no tendency to push it to one side, while at the same time it is easily moved to one side of the exhaust-nozzle, and is not liable to become clogged or to get out of order in such a way as to make it difficult to
20 move it. The additional feature of my construction by which the lower ends of the links D and D' are secured to the casting B' at a less distance from each other than are the upper
25 ends of the said links secured to the screen C results in the screen turning downward as it is turned to one side of the exhaust-nozzle, thereby taking up less room and being less in the way than if it projected horizontally
30 to one side of the nozzle. This "feathering," as I might call it, of the screen is further facilitated by making the distance in a straight line between the two ends of the links D, for which reason the lugs *b'*, to which
35 the links D' are attached, are placed below the lugs *b*, to which the links D are attached. The L shape of the links D' is advisable, as enabling them to fold over, as shown in Fig. 3, without coming in contact with the lugs *b*
40 or the shaft E.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

45 1. In combination with the exhaust-nozzle of a locomotive, a perforated muffling-screen and swinging links pivotally secured in pairs at four points on the screen and at four points to the nozzle, so as to hold the screen securely above the nozzle and permit it to be
50 folded to one side thereof, substantially as and for the purpose specified.

2. In combination with the exhaust-nozzle of a locomotive, a perforated muffling-screen, a pair of links pivotally secured to opposite
55 points on the screen and upon the nozzle, a second pair of links pivotally secured to opposite points on the screen at a distance from the points where the first links are attached and to opposite points on the nozzle situated
60 closer to the points where the first links are attached than the distance between the ends of the links on the screen, whereby the screen is held securely above the nozzle and permit-

ted to fold to one side and turn downward, all substantially as and for the purpose specified. 65

3. In combination with the exhaust-nozzle of a locomotive, a perforated muffling-screen, a pair of links pivotally secured to opposite corners of the screen and to lugs on the exhaust-nozzle, a second pair of links pivotally
70 secured to the other two corners of the screen at one end and at their other ends to lugs on the exhaust situated close to and below the lugs to which the first pair of links are attached. 75

4. In combination with the exhaust-nozzle of a locomotive, a perforated muffling-screen, a pair of straight links pivotally secured to opposite corners of the screen and to lugs on
80 the exhaust-nozzle, a second pair of L-shaped links pivotally secured to the other two corners of the screen at one end and at their other ends to lugs on the exhaust situated close to and below the lugs to which the first pair of
85 links are attached.

5. In combination with the exhaust-nozzle of a locomotive, a shaft journaled in lugs attached to the nozzle and extending out through the wall of the smoke-box, a perforated muffling-screen, a pair of links attached at one
90 end to said shaft and pivoted at their other ends to opposite corners of the screen, and a second pair of links pivoted at one end to the other corners of the screen and at their other
95 ends pivoted to the nozzle.

6. In combination with an exhaust-nozzle of a locomotive, a shaft journaled in lugs attached to the nozzle and extending out through the wall of the smoke-box, a perforated muffling-screen, a pair of links attached at one
100 end to said shaft and pivoted at their other ends to opposite corners of the screen, and a second pair of longer links pivoted at one end to the other corners of the screen and at their
105 other ends pivoted to the nozzle at points below the level of the shaft and close to it.

7. In combination with the exhaust-nozzle of a locomotive, a shaft journaled in lugs attached to the nozzle and extending out through
110 the wall of the smoke-box, a perforated muffling-screen, a pair of links attached at one end to said shaft and pivoted at their other ends to opposite corners of the screen, a second pair of links pivoted at one end to the
115 other corners of the screen and at their other ends pivoted to the nozzle, detents secured on the outside of the smoke-box and around the shaft, a lever attached to said shaft, and a catch secured to said lever, so as to engage
120 with the detents and lock the shaft in the desired position.

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Witnesses:

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