

No. 848,519.

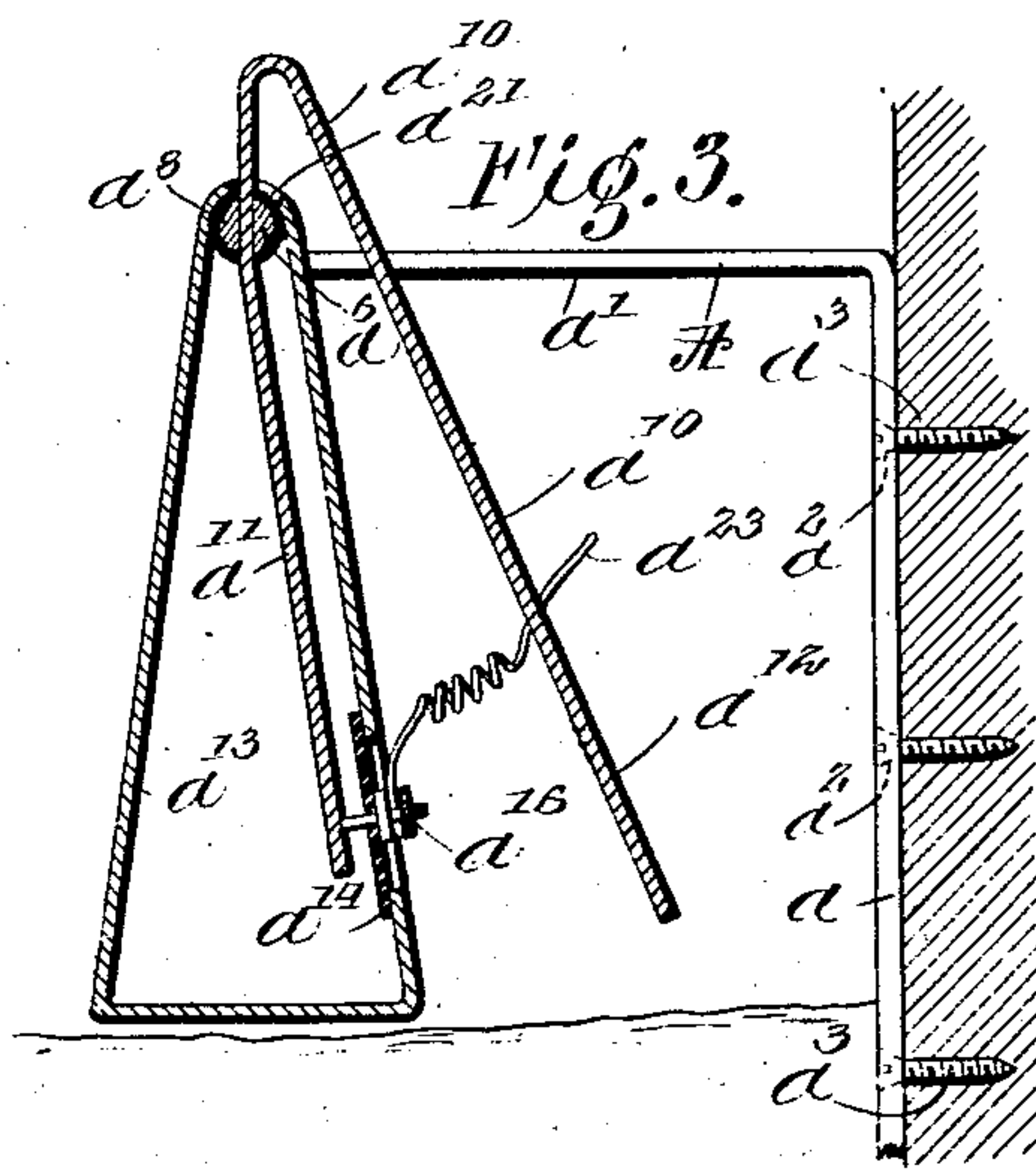
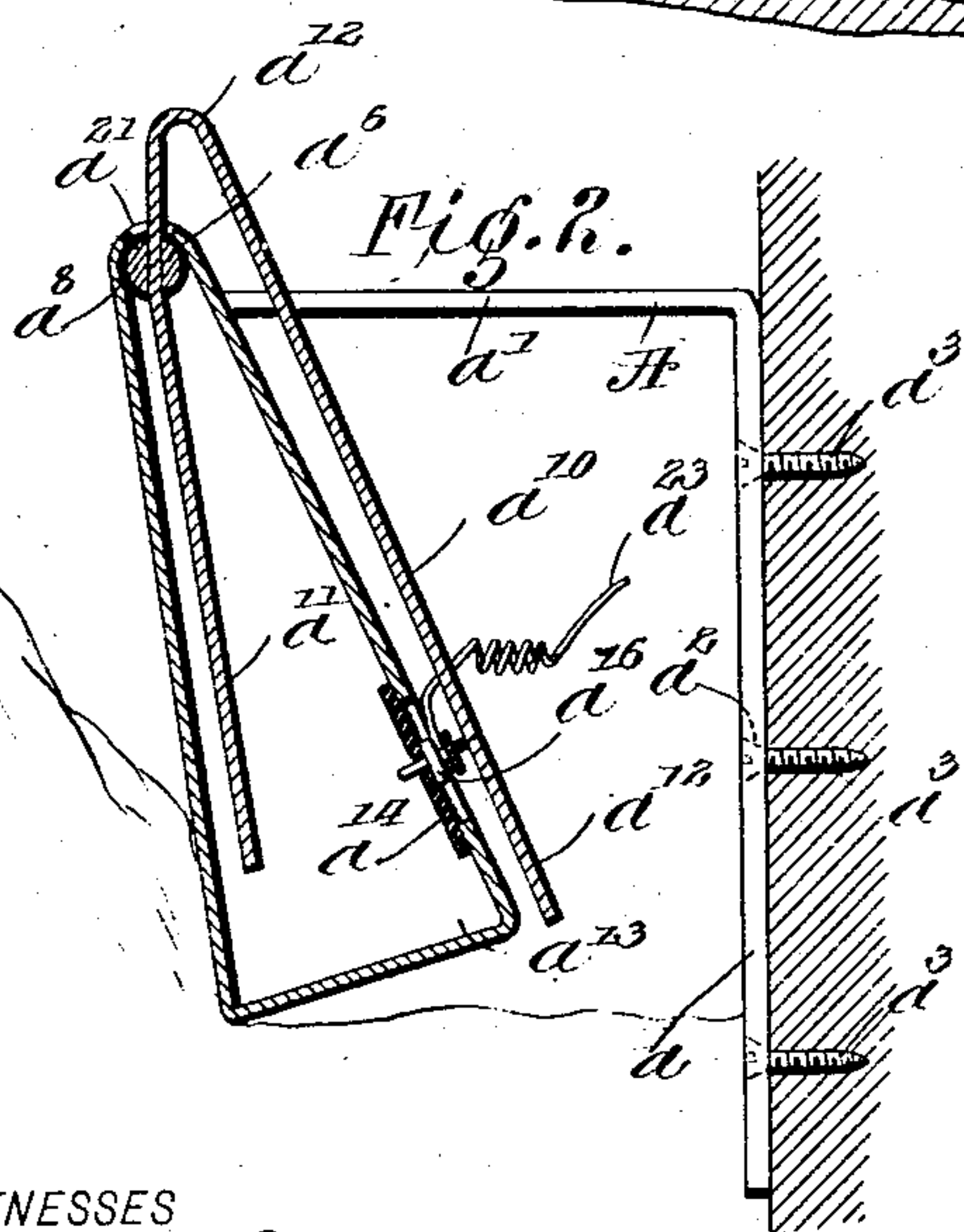
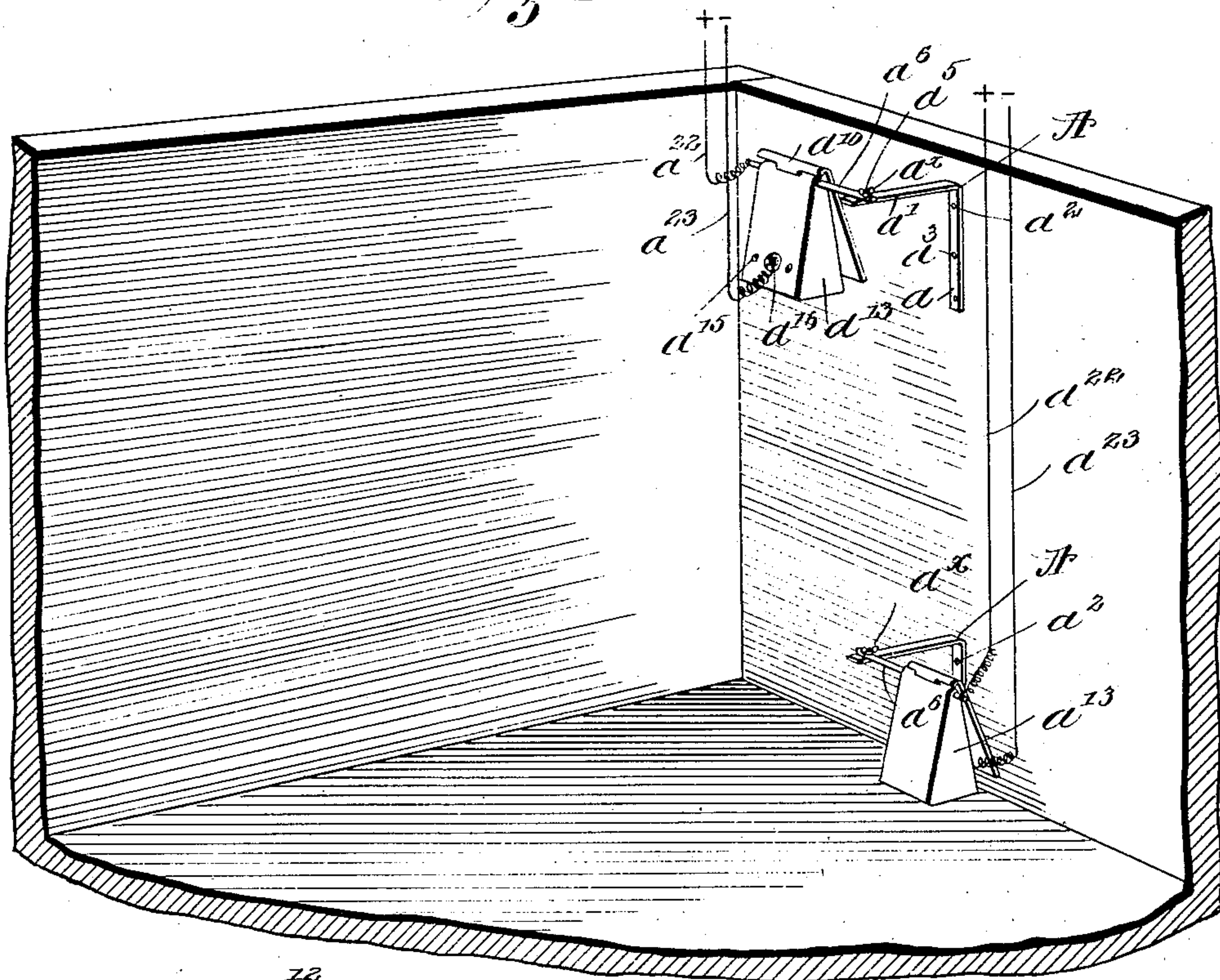
PATENTED MAR. 26, 1907.

C. VERSTEEG.  
INDICATOR.

APPLICATION FILED NOV. 14, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

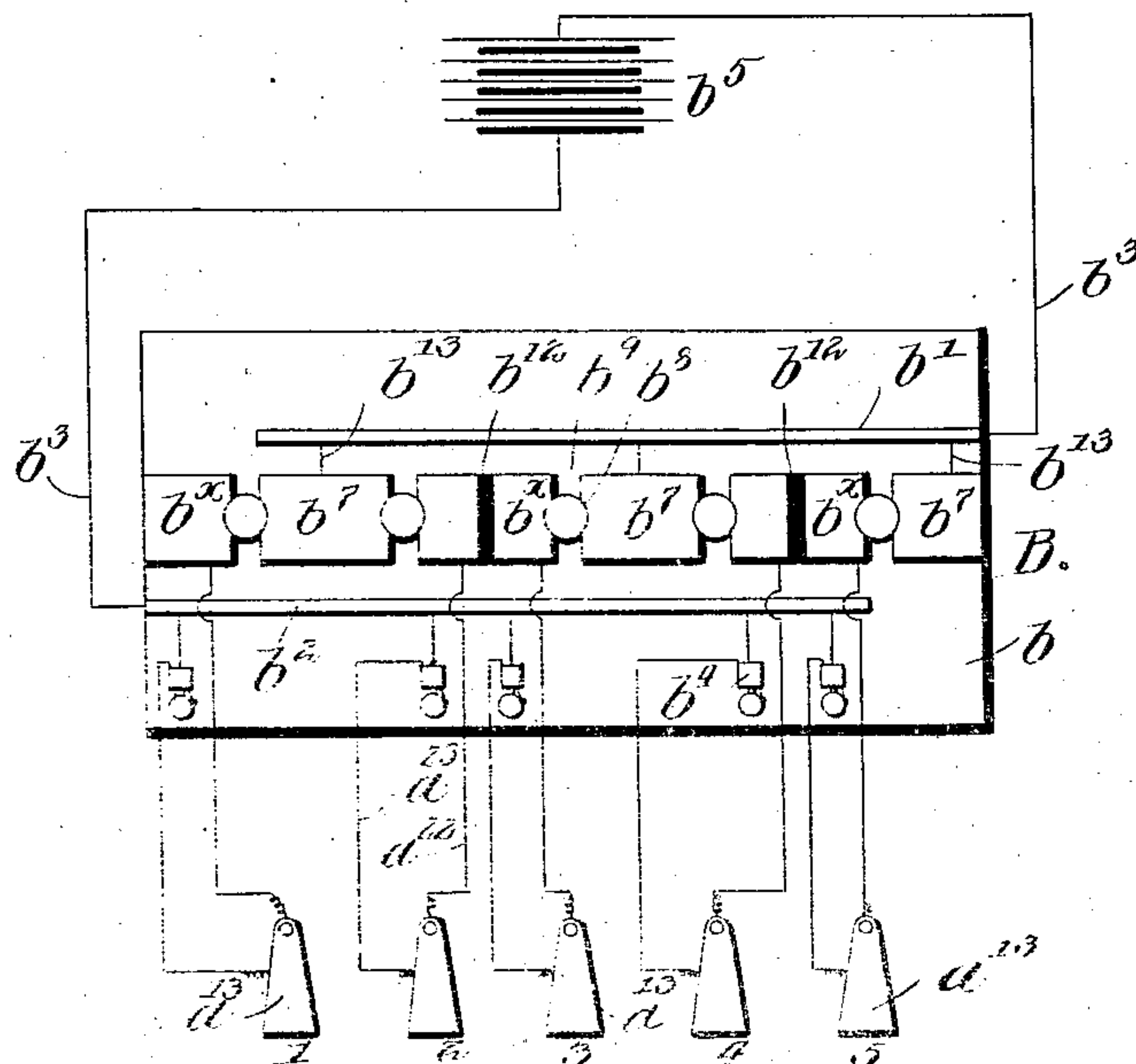


Fig. 7.

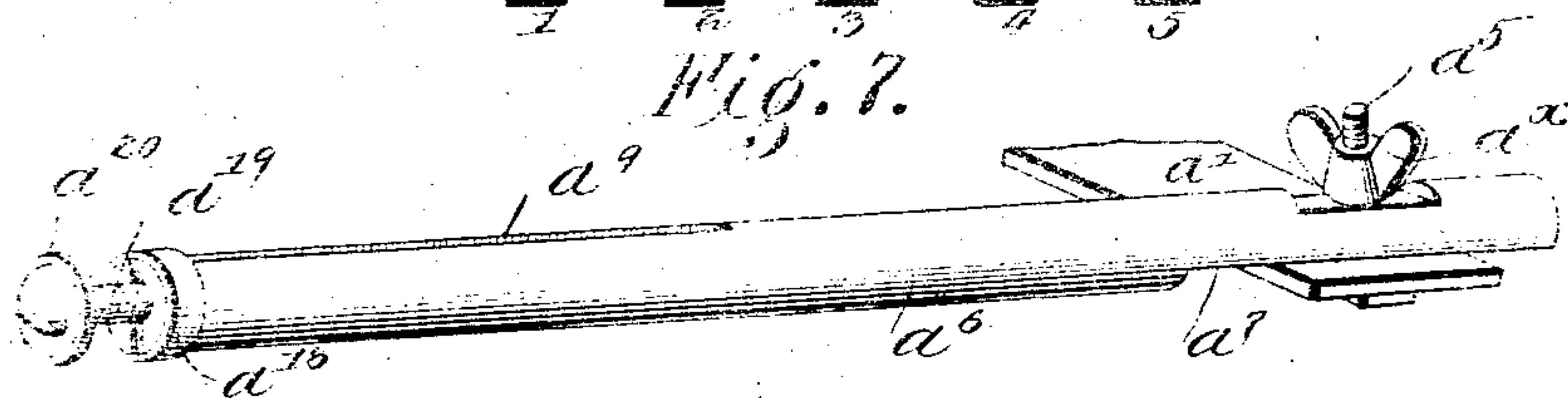


Fig. 5.

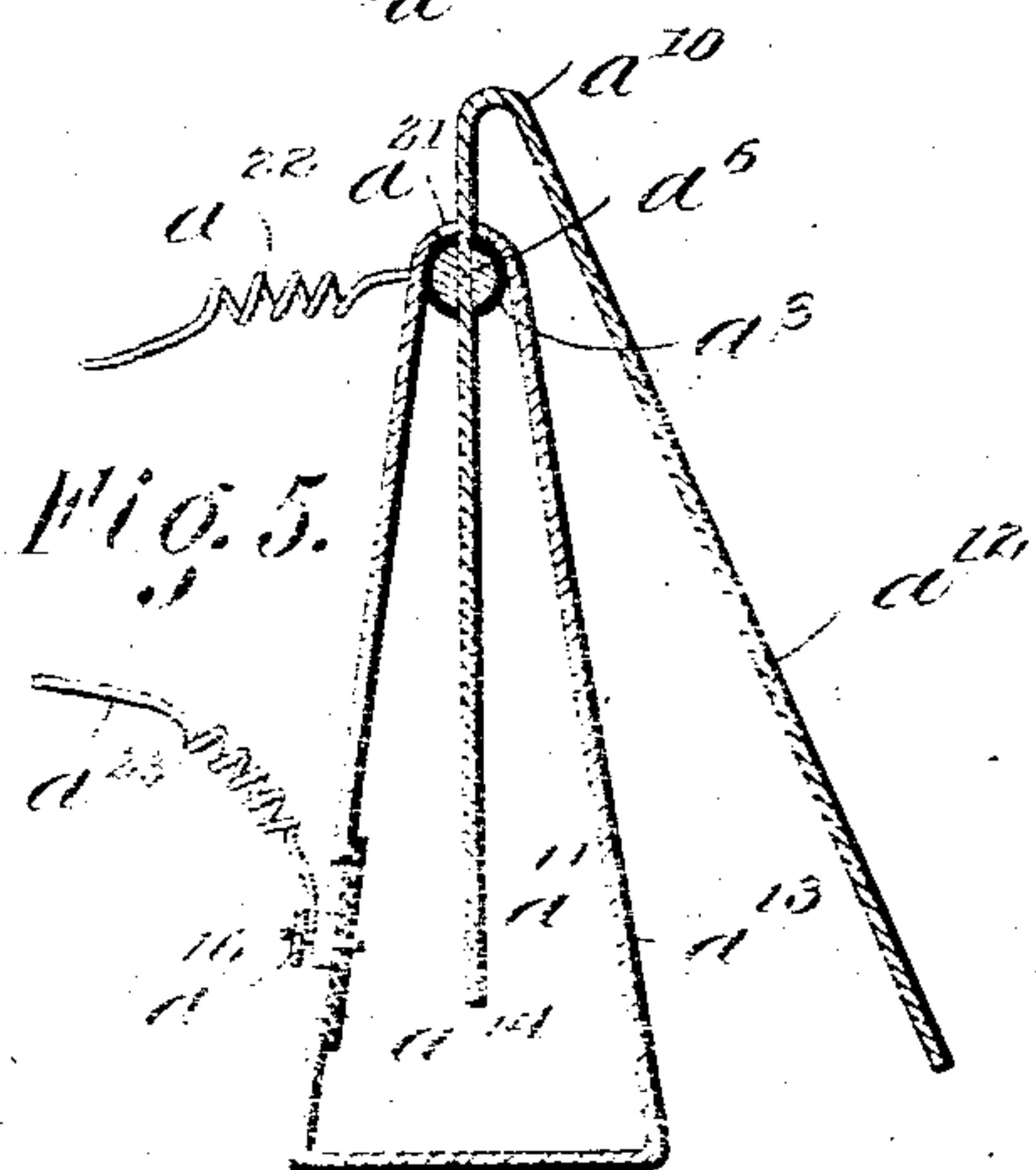
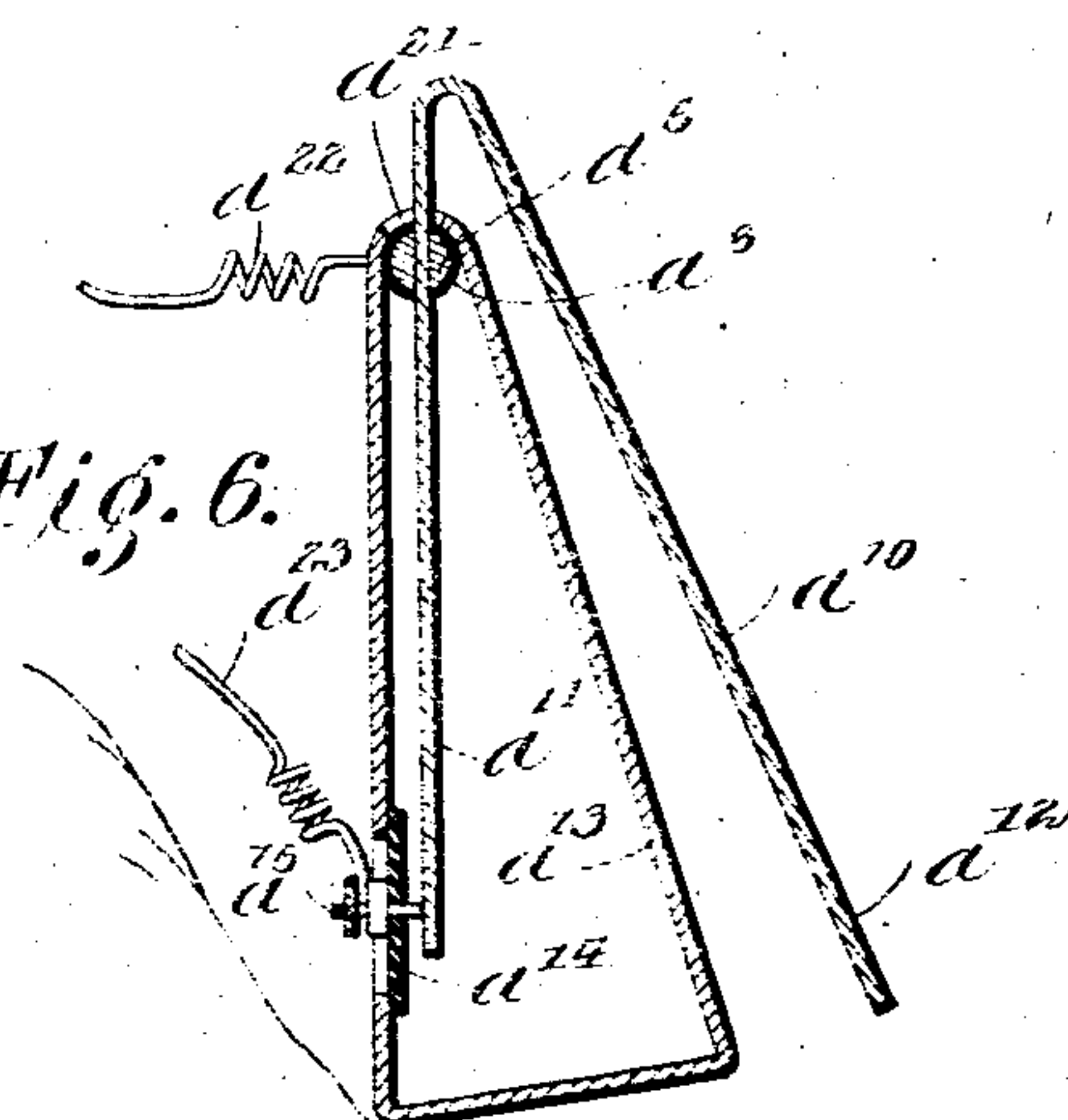


Fig. 6.



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# UNITED STATES PATENT OFFICE.

CHESTER VERSTEEG, OF ASHTON, SOUTH DAKOTA.

## INDICATOR.

No. 848,519.

Specification of Letters Patent.

Patented March 26, 1907.

Application filed November 14, 1906. Serial No. 343,386.

*To all whom it may concern:*

Be it known that I, CHESTER VERSTEEG, a citizen of the United States, and a resident of Ashton, in the county of Spink and State of South Dakota, have invented certain new and useful Improvements in Indicators, of which the following is a specification.

My invention is an improvement in indicators for grain-bins, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

Referring to the drawings forming a part hereof, Figure 1 is a perspective view of a bin provided with my improved indicators. Fig. 2 is a vertical section through the swinging box and its supporting-plate, showing the parts in their normal position at the bottom of the bin. Fig. 3 is a similar view showing the position of the parts when the circuit is closed. Fig. 4 is a diagrammatical view of a number of devices and the switchboard to which they are connected. Fig. 5 is a vertical section through the indicator, showing the parts in their normal position when used at the top of the bin. Fig. 6 is a similar view showing the position of the parts when the circuit is closed, and Fig. 7 is a perspective view of the rod on which the box is mounted.

The present invention is an improvement over the device shown in Letters Patent No. 831,911, granted to me September 25, 1906, and comprising an open electric circuit, including a signal to be operated by the contact of the terminals of the circuit, the said terminals being arranged within the bin in position to be moved into contact by the movement of the grain when it reaches a predetermined depth in the bin, and in means for preventing the direct contact with the grain of the contact-points, while permitting their movement toward and from each other.

In the present embodiment of the invention a support A is arranged within the bin; the support comprising a vertical portion  $a$ , provided with holes  $a^2$ , whereby it may be secured to the side of the bin by the screws  $a^3$  at any suitable point, and a horizontal portion  $a'$ , provided with a threaded pin  $a^5$ , on which is a thumb-nut  $a^x$ , for a purpose to be hereinafter described.

A rod  $a^6$  is provided at one end with a flattened portion  $a^7$ , having therethrough an opening through which extends the pin  $a^5$ , the rod being secured in its adjusted position with respect to the support by the thumb-

nut  $a^x$  before mentioned. At the opposite end of the rod  $a^6$  is provided a longitudinal slot  $a^9$  for receiving the reduced portion  $a^{11}$  of a shield  $a^{10}$ . The slot  $a^9$  extends to the end of the rod, and a band  $a^{18}$  encircles the end of the rod whereby to securely clamp the slotted portion of the rod upon the reduced portion of the shield. The slotted end of the rod is provided with a threaded opening, in which is engaged a screw  $a^{19}$ , and a washer  $a^{20}$  is arranged between the head of the screw and the end of the rod.

A closed box  $a^{13}$  is rotatably mounted upon the rod, and insulating material  $a^8$  is arranged between the box and the rod whereby to insulate the said box from the rod. The box is slotted at its upper portion, as at  $a^{21}$ , to permit the passage of the reduced portion  $a^{11}$  of the shield, and the slot is sufficiently wide to permit the swinging of the box upon the rod without the edges of the slot contacting with the shield.

The box  $a^{13}$  is provided upon the inner face thereof with an insulating-plate  $a^{14}$ , secured to the box by any suitable means, as by the screws  $a^{15}$ , and extending through the plate is a binding-post  $a^{16}$ , the box being cut away around the binding-post, as shown more particularly in Fig. 1, whereby to insulate the binding-post from the box.

The portion  $a^{12}$  of the shield outside of the box is of approximately the width of the box, and the said portion  $a^{12}$  arches over the top of the box and rod, as shown in Fig. 1, whereby to deflect the running grain over the top and to each side of the box, the shield extending to approximately the bottom of the box.

Wires  $a^{22}$   $a^{23}$  are connected with the end of the rod  $a^6$  and with the binding-post  $a^{16}$ , respectively, the wire  $a^{22}$  being arranged between the washer  $a^{20}$  and the end of the rod and the wire  $a^{23}$  being connected directly with the binding-post  $a^{16}$ .

In practice an indicator may be arranged in each bin at the bottom and at the top thereof, and the conductors from the indicators lead to a common switchboard arranged in some convenient part of the building. The switchboard B comprises a base  $b$ , having arranged upon the face thereof a plurality of conducting-bars  $b'$   $b^2$ , parallel with and spaced apart from each other, the ends of said bars being connected by the conductors  $b^3$  in an open current which includes a battery  $b^5$ . Between the contact-bars  $b'$  and  $b^2$  are arranged a plurality of longitudinally-aligned



and spaced plates  $b^7$   $b^x$ , the abutting ends of the plates being recessed, as at  $b^8$ , for the reception of plugs  $b^9$ , whereby to connect the plates with each other.

5 It will be evident from the drawings that the alternate plates  $b^x$  are divided vertically by a strip of insulation  $b^{12}$ . The upper contact-bar  $b^7$  is connected to an intermediate plate  $b^7$  by conductors  $b^{13}$ . The wires  $a^{22}$   $a^{23}$ ,  
10 leading from the rod and the binding-post, respectively, are connected one with the contact-bar  $b^2$  and the other with the plate  $b^x$ , and a bell  $b^4$  is interposed in each of the conductors. It will be evident from the descrip-  
15 tion that when the plugs are inserted in the openings the contact-points of each of the indicators 1, 2, 3, 4, and 5 are the terminals of an open circuit, which includes a bell and a battery. When the box of the indicator is  
20 moved to bring its contact-point against the shield, the circuit is closed and the bell rings until the plug corresponding to the indicator is removed from the switchboard. The removal of the plug breaks the circuit and stops  
25 the ringing of the bell.

It is obvious that a might bell be arranged in the circuit leading from the contact-bar to the battery or in the return-conductor, in which case all the indicators would have a  
30 common bell, and drop-plates might be used in connection with the bell.

In operation the support A is placed in the bin in any suitable position, and the rod  $a^9$  of the indicator is turned to bring it into the position shown at the upper part of Fig. 1 when  
35 the indicator is to be used at the top of the bin or to bring it into the position shown at the lower part of the said figure when it is to be used at the bottom of the bin, after which the thumb-screw is made use of to secure the  
40 rod in its adjusted position. In either case the shield  $a^{12}$  is between the indicator and the side of the bin, whereby to prevent the grain accumulating directly between the box and  
45 the side of the bin. When the indicator is placed in the bottom of the bin in the position shown in Fig. 1, the grain in the bin moves the box into the position shown in Fig. 2, with the contact-point of the binding-  
50 post out of contact with the reduced portion of the shield. When the bin is emptied and the grain is withdrawn from the front of the box, the box swings forward to the position shown in Fig. 3, thus completing the circuit  
55 and ringing the bell. When placed at the top of the bin, the box normally stands in the position shown in Fig. 5 until the entering grain reaches a level sufficiently high to swing the box into the position shown in Fig.  
60 6, when the circuit is completed, as before.

In filling the bin after the alarm is sounded enough grain may be run into the bin so as to entirely submerge the indicator before the  
65 flow can be stopped. If at any time grain should be withdrawn from the bin sufficient

to relieve the pressure against the box, thus breaking the circuit, yet not enough to entirely clear the box, and under these conditions more wheat should be introduced into the bin, the wheat already between the box  
70 and the wall would not permit the box to swing back as it should.

The shield permits the placing of the indicator close to the bin-wall, and since it is always close to the box but a small amount of grain  
75 is permitted to enter between the box and the shield.

In Figs. 2 and 3 the reduced portion  $a^{11}$  of the shield is shown as bent slightly in order that the binding-post may contact with the  
80 reduced portion when the box hangs vertically from the post, and the outer end of the binding-post is provided with insulating material which forms a stop between the binding-post and the body portion of the shield.  
85

I claim—

1. An indicator for grain-bins comprising a support having a vertical portion for attachment to the wall of the bin, and a horizontal portion provided with a threaded post, a rod  
90 having a flattened portion resting upon the horizontal portion of the support and provided with an opening through which passes the post, such rod being slotted at its opposite end, a thumb-screw engaging with the  
95 post for securing the rod in its adjusted position, a closed box pivotally mounted upon the rod and insulated therefrom, a shield having a reduced portion passing through the slot of the rod and within the box, the portion  
100 of the shield outside the box being arranged substantially parallel with the side thereof and spaced apart therefrom, said box depending normally substantially vertical from the rod, and being provided on its inner face  
105 with a plate of insulating material having a binding-post for coacting with the reduced portion of the shield, an electric circuit having its terminals connected with the binding-post and with the reduced portion of the  
110 shield respectively, said circuit including a signal operated by the contact of the binding-post with the reduced portion of the shield.

2. An indicator for grain-bins comprising a support arranged in the bin, a rod adjustably  
115 secured to the plate and having its free end slotted, a shield comprising a reduced portion passing through the slot of the rod, the body portion of the shield lying alongside the reduced portion and spaced apart therefrom, a  
120 box mounted for rotation upon the rod and insulated therefrom, said box inclosing the reduced portion of the shield, a binding-post extending into the box and insulated therefrom, an electric circuit having its terminals  
125 in the binding-post and in the reduced portion of the shield, respectively, and an electric circuit having a signal operated by the contact of the binding-post with said reduced portion of the shield.  
130



3. An indicator for grain-bins comprising a support within the bin, a rod adjustably connected with the support, a box pivotally mounted on the rod and insulated therefrom, 5 a shield having a reduced portion within the box, the body portion of said shield lying outside of the box and spaced apart therefrom, a binding-post extending through the box and insulated therefrom, and an electric circuit having its terminals in the binding-post 10 and the reduced portion of the shield, respectively, and including a signal operated by the contact of the binding-post with said reduced portion of the shield.

15 4. An indicator for grain-bins, comprising a box, a shield arranged alongside the box

and spaced apart therefrom, said shield having a reduced portion extending into the box, the box being movable with respect to said reduced portion, said box having a contact-point for coacting with the reduced portion 20 of the shield, and an electric circuit having its terminals in the reduced portion of the shield and the contact-point of the box, respectively, said circuit including a signal operated by the contact of the contact-point 25 and the shield.

CHESTER VERSTEEG.

Witnesses:

D. H. ROBERTS,

E. N. GRAVES.