

F. C. W. KUEHN.  
SASH CORD GUIDE.  
APPLICATION FILED SEPT. 22, 1909.

958,653.

Patented May 17, 1910.

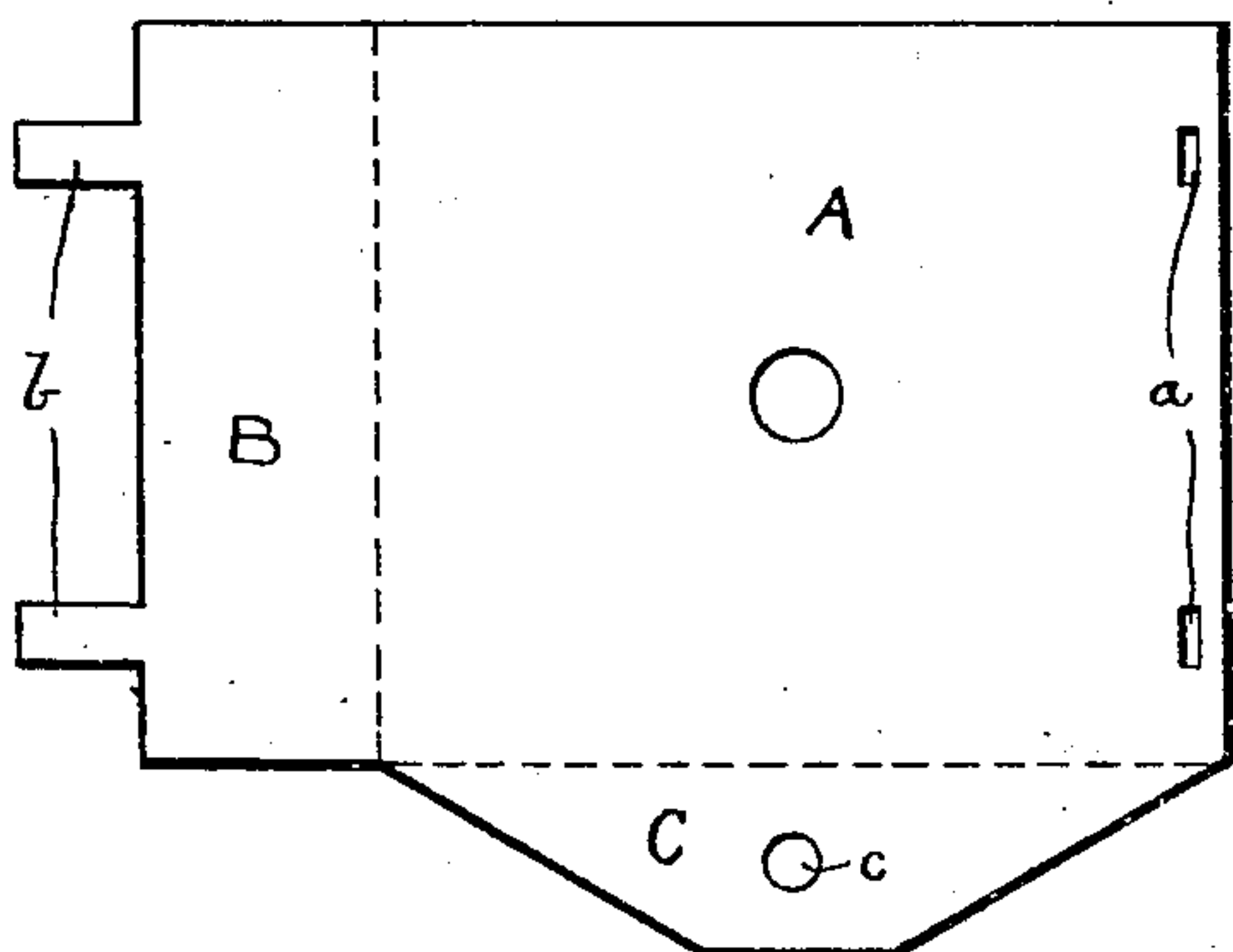
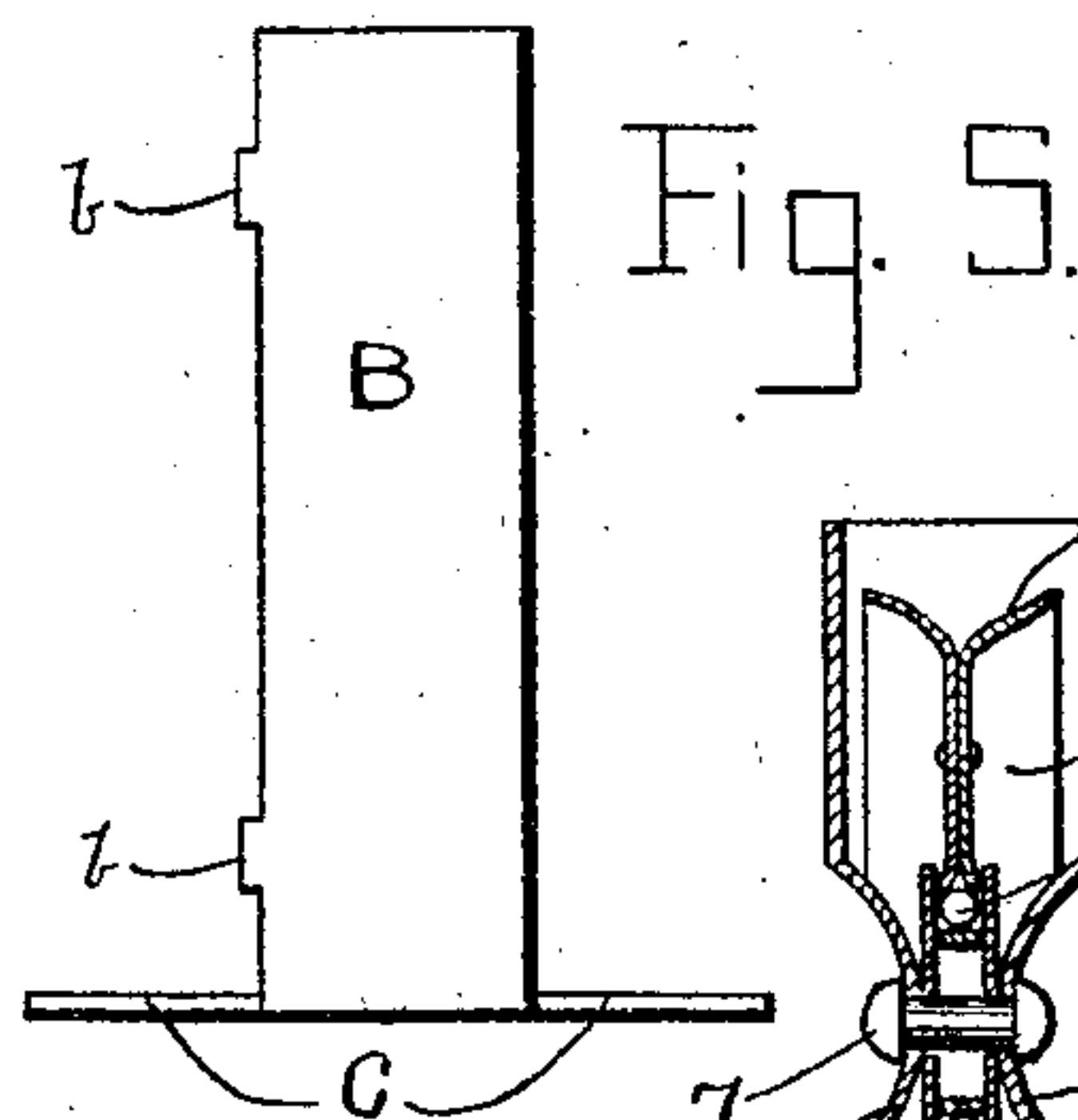
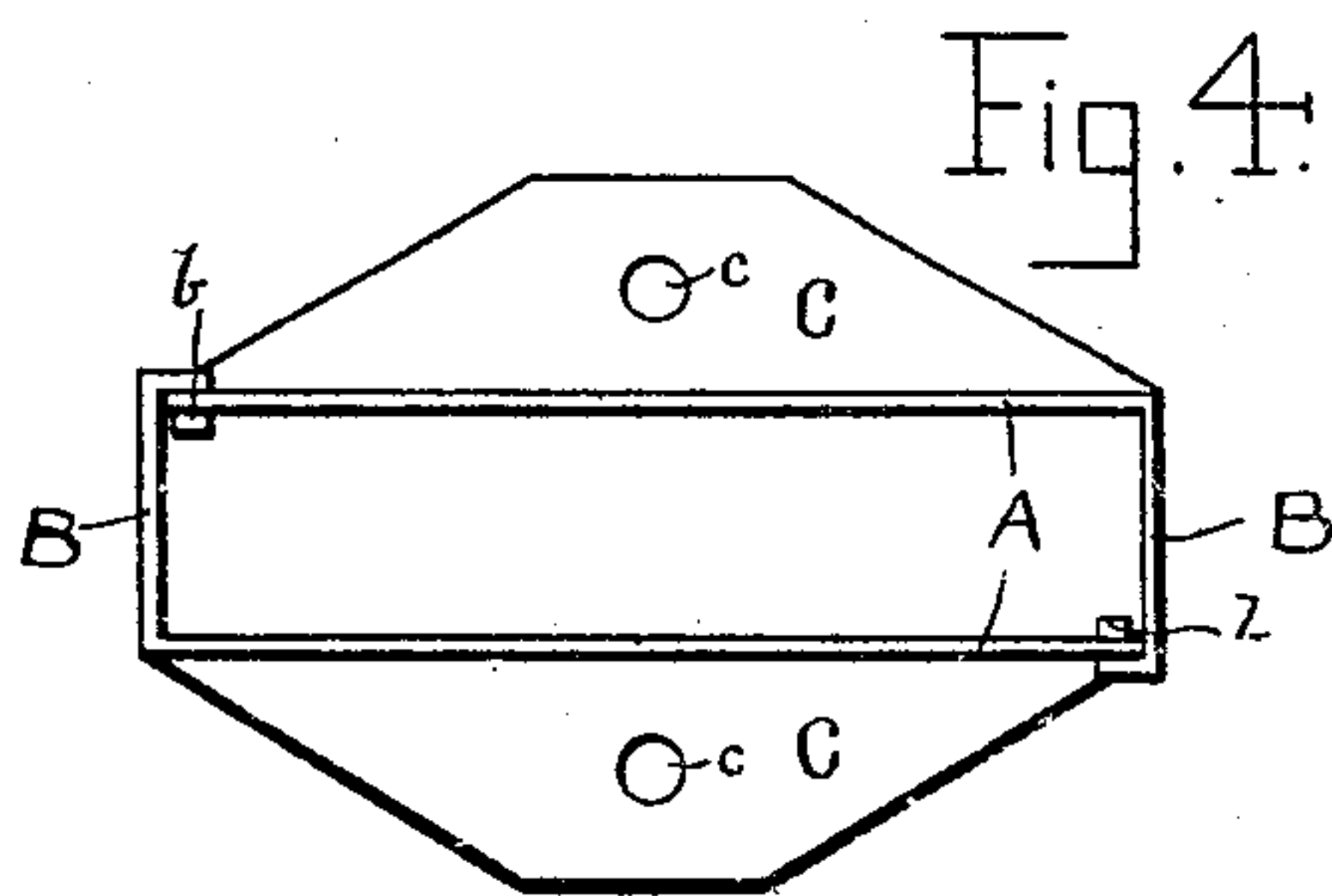
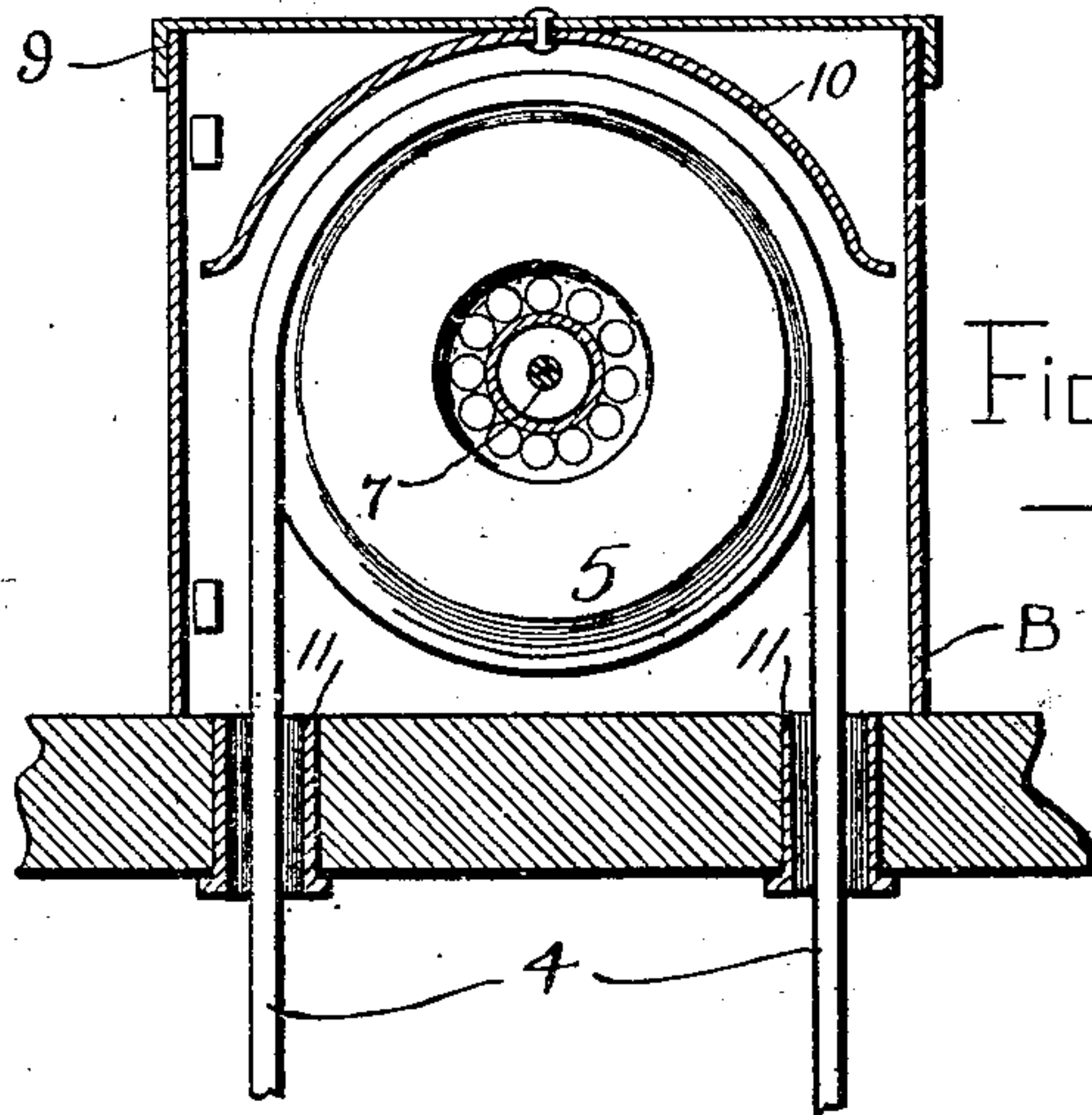
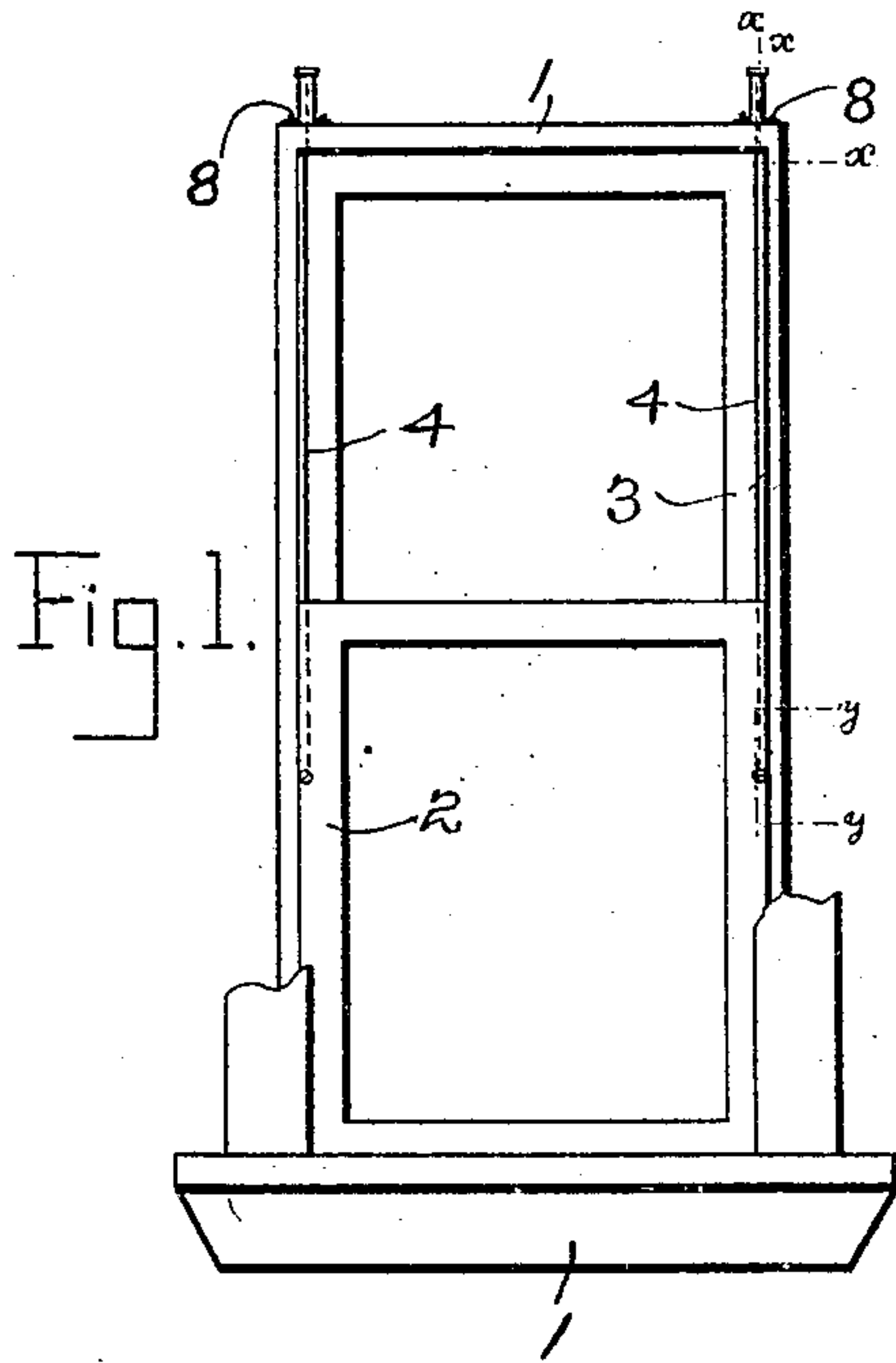


Fig. 6.

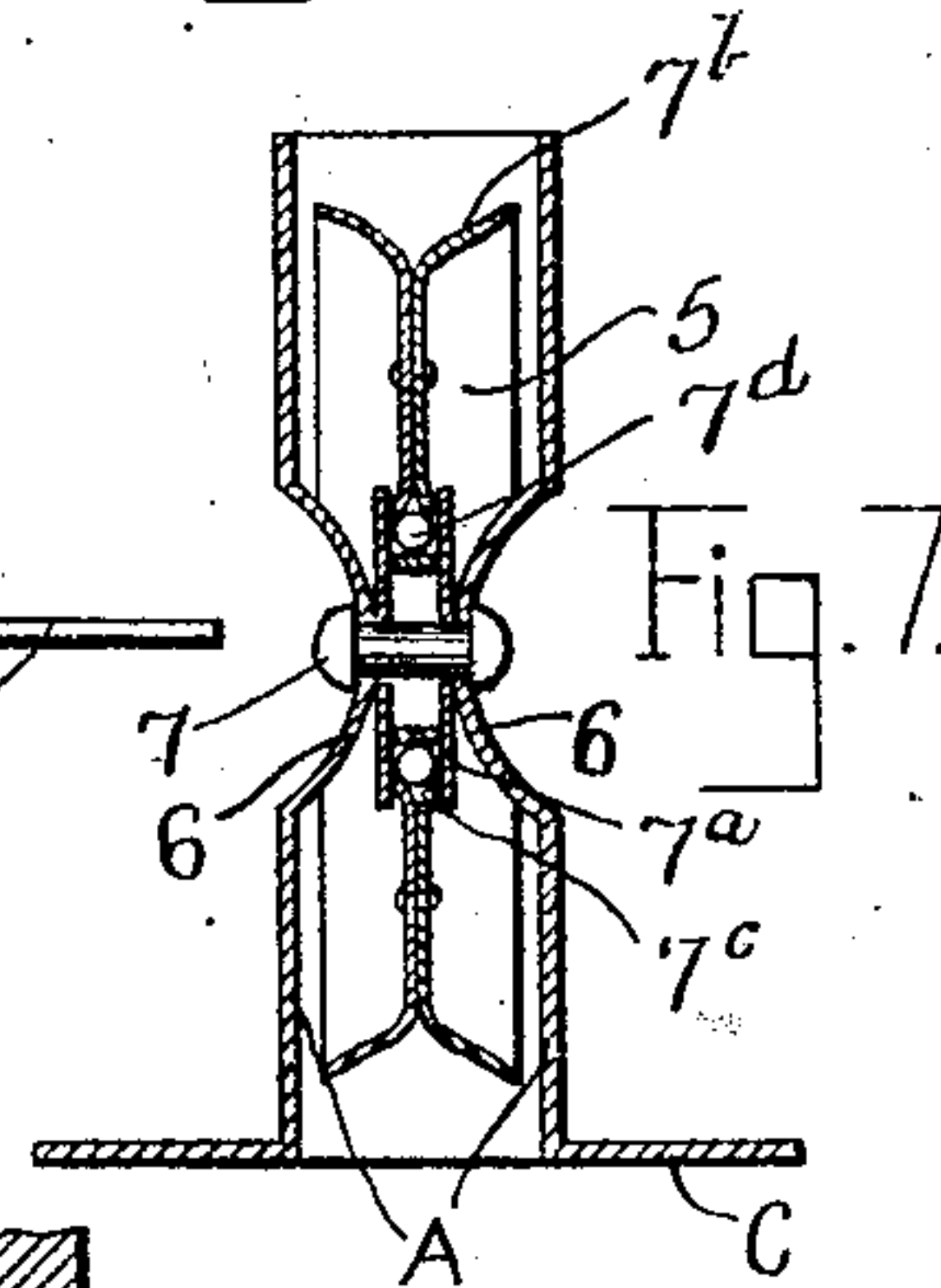


Fig. 7.

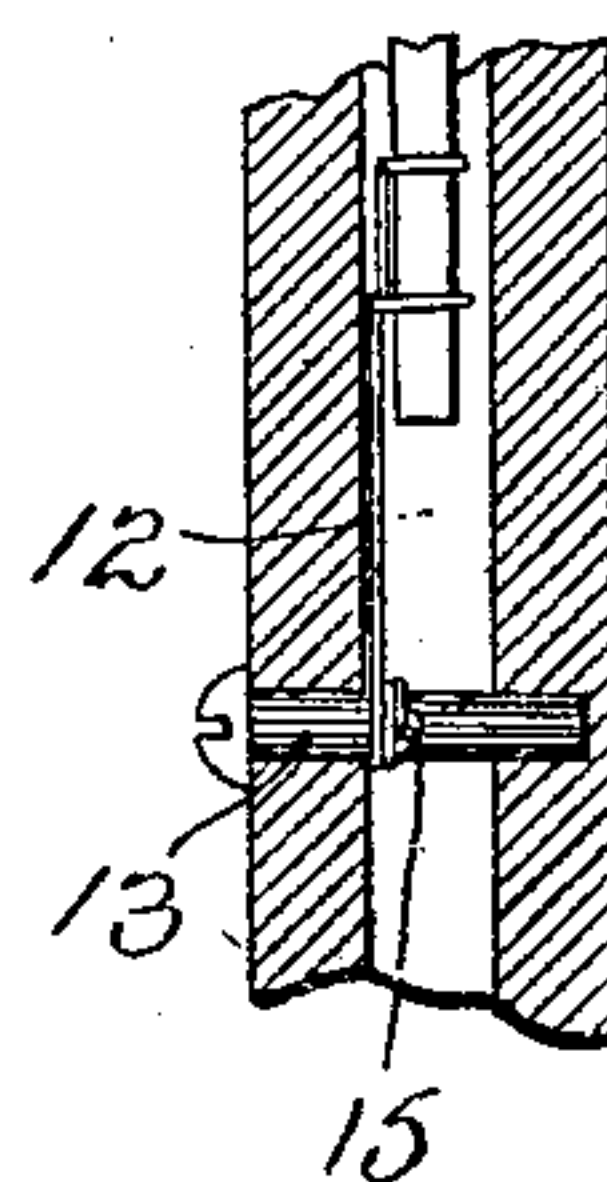


Fig. 3.

WITNESSES

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# UNITED STATES PATENT OFFICE.

FRANK C. W. KUEHN, OF HURON, SOUTH DAKOTA.

## SASH-CORD GUIDE.

958,653.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed September 22, 1909. Serial No. 519,049.

*To all whom it may concern:*

Be it known that I, FRANK C. W. KUEHN, a citizen of the United States, residing at Huron, in the county of Beadle and State of South Dakota, have invented certain new and useful Improvements in Sash-Cord Guides; and I do hereby 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.

My invention relates to sash balances of the type in which one sash is made to balance the other, no balance-weights being used.

It has for its object to provide an inexpensive but durable pulley casing.

Other objects will become apparent from the full description.

The invention consists in the features of construction and combinations of parts hereinafter described and specified in the claims.

In the accompanying drawing: Figure 1 is a front view and window frame provided with my sash balance, the top and parts of the sides of the frame being broken away to disclose the pulley casings and sash cords. Fig. 2 is an enlarged section on the line  $x-x$  of Fig. 1 showing how the pulley casing is mounted on the upper member of the window frame. Fig. 3 is an enlarged broken section on the line  $y-y$  of Fig. 1 illustrating the preferred means of adjustably attaching the sash cord to the lower sash. Figs. 4 and 5 are top plan and end views respectively of the pulley casing with its cover removed. Fig. 6 is a diagrammatic view of one of the two similar plates from which the pulley casing is formed, and Fig. 7 is a vertical cross section through the pulley casing showing the preferred manner of mounting the pulley therein.

Referring more particularly to the drawing 1 designates the window frame and 2 and 3 the lower and upper sashes, respectively. As is usual in this class of sash balances, the sash cords 4 are secured at one end to the upper sash and at the other end to the lower sash, said cords passing over pulleys 5 arranged on the top of the window frame.

I make the casing for the pulleys out of two similarly shaped pieces of sheet metal cut out in the form illustrated in Fig. 6. The main portion A of this plate is gener-

ally square and is provided with slots  $a$  near one edge. At the other edge an extension B is formed having extending lips  $b$ . At the bottom of the part A there is an extension C provided with a hole  $c$ . The plate is bent upon the dotted lines, the extension B being turned inwardly and the extension C outwardly at right angles to the part A. It will be seen that when two of these plates, thus bent, are assembled with the lips  $b$  of one engaging the slots  $a$  of the other, they form a simple but rigid and durable casing for the pulley.

As illustrated in Fig. 7, the center of each side of the casing is pressed inward at 6 and a rivet 7 passed through said depressed portions. A circular channeled piece  $7^a$  is mounted around said rivet between the inner faces of said depressed portions. The pulley 5, as here shown, is composed of two rings of sheet metal secured together and having their outer edges bent at  $7^b$  in opposite directions to form the groove for holding the sash cord. The inner edges of said metal rings are also bent in opposite directions at  $7^c$  and project into the channel of the piece  $7^a$ . Ball-bearings  $7^d$  are arranged in the channel-piece and are engaged by the groove formed between the outwardly extending portions  $7^c$ . This construction and manner of mounting the pulleys will be found simple, inexpensive and serviceable. The ball bearings insure the easy running of the pulleys.

The pulley casings are secured to the top of the window frame by means of screws 8 passed through the holes  $c$  in the extensions C which comprise the base of said casing. The cover 9 for the casing carries a bowed spring 10 fastened thereto at its middle and having its ends extending down into the casing for the purpose of compelling the sash cord to follow the pulley around when the cord is first inserted and adjusted. The sash cord passes down through openings in the top of the window frame which are preferably fitted with metal thimbles 11 to prevent wear upon the woodwork.

The sash cords 4 may be attached to the upper and lower sashes in any suitable manner. As here shown, the upper portion of each lateral edge of the lower sash is grooved, as at 12, Fig. 3, to house the end of one of the sash cords. A fine wire cord is fastened around the end of the sash cord and secured at its other end to a plain bolt



13 arranged transversely in the bottom of the groove 12. The attachment of the wire cord to the sash cord is preferably made by giving it a half hitch around the sash cord.

5 The other end of said wire cord is passed through an opening 15 bored crosswise through the bolt 13 and enough slack is provided in said cord to permit it to be wound several times around said bolt. The head

10 of the bolt is arranged on the front face of the sash but is normally covered by the side of the window frame. When said bolt is turned to take up the slack in the wire cord, the latter is directed so that it will wind

15 toward the front of the sash whereby it will cause the bolt to bind so that the more weight there is placed upon the sash cord the more firmly the latter will hold to the sash by reason of this binding of the bolt caused

20 by the coils of the wire cord thereon. It will be understood that by turning the bolt 13 one way or the other the sash cord may be loosened or tightened as required to cause the sash to fit accurately in the frame.

25 The sash cord fastener just described is claimed in another application filed by me on April 18, 1910, Serial No. 556,005.

I claim:

30 1. A pulley casing of the character described made of two similarly shaped pieces

of sheet metal, each bent to form one side and one end of the casing and having a lateral projection at the base for securing said casing to the window frame, each piece being provided with lips at one edge and slots 35 at the opposite edge interlocking respectively with the slots and lips on the other piece.

2. A pulley casing of the character described made of two similarly shaped pieces 40 of sheet metal, each bent to form one side and one end of the casing and having means for securing said casing to a window frame, each piece being provided with lips at one edge and slots at the opposite edge interlock- 45 ing respectively with the slots and lips on the other piece.

3. The combination, with a pulley casing, of a pulley mounted therein, a cover for said casing, and a bowed spring fastened near its 50 middle to said cover and having its ends extending into the casing for the purpose specified.

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

FRANK C. W. KUEHN

Witnesses:

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C. T. MARKWOOD.