

No. 762,281.

PATENTED JUNE 14, 1904.

F. B. COOK.
TRAVELING HANGER.
APPLICATION FILED NOV. 17, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

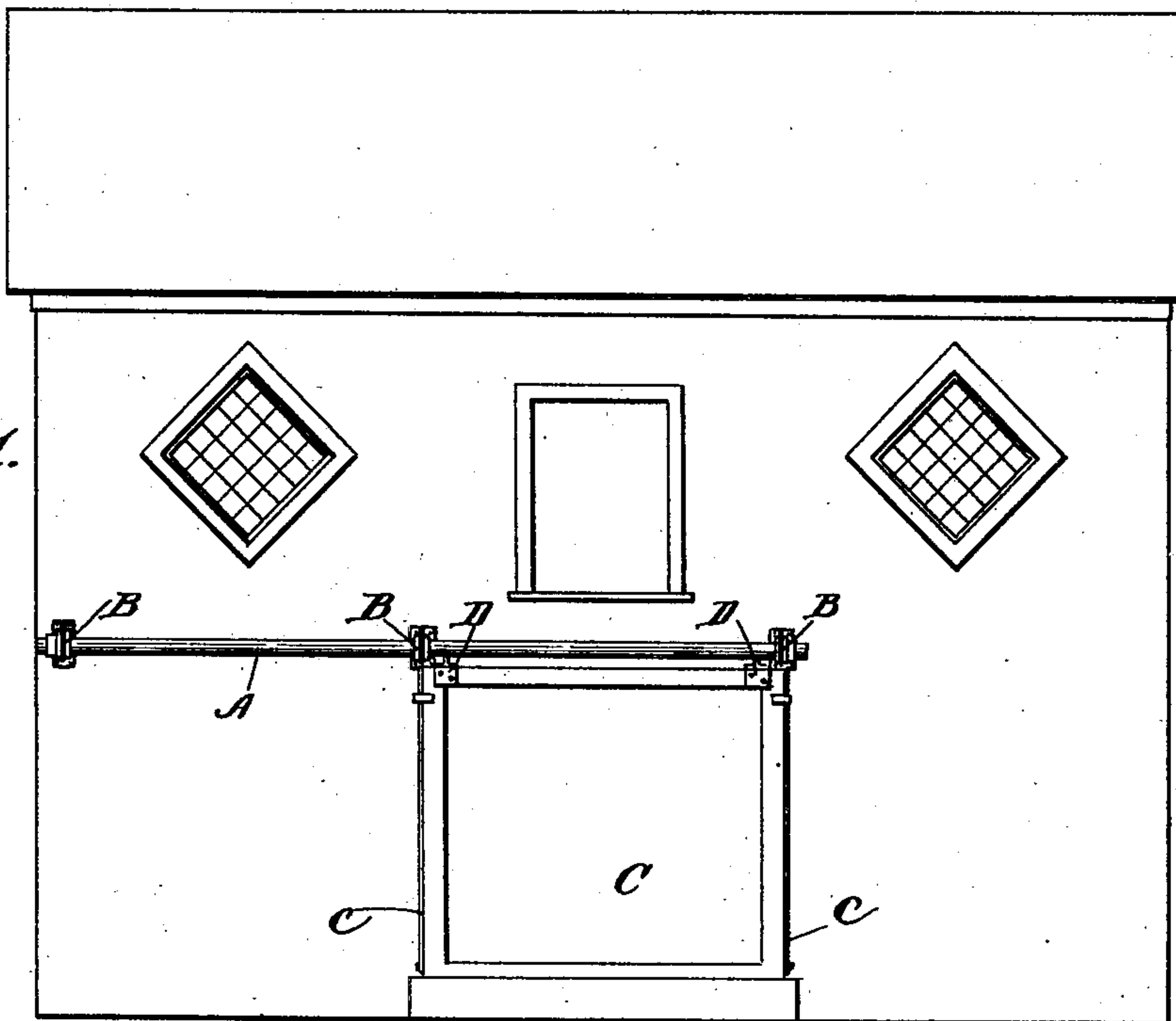


Fig. 3.

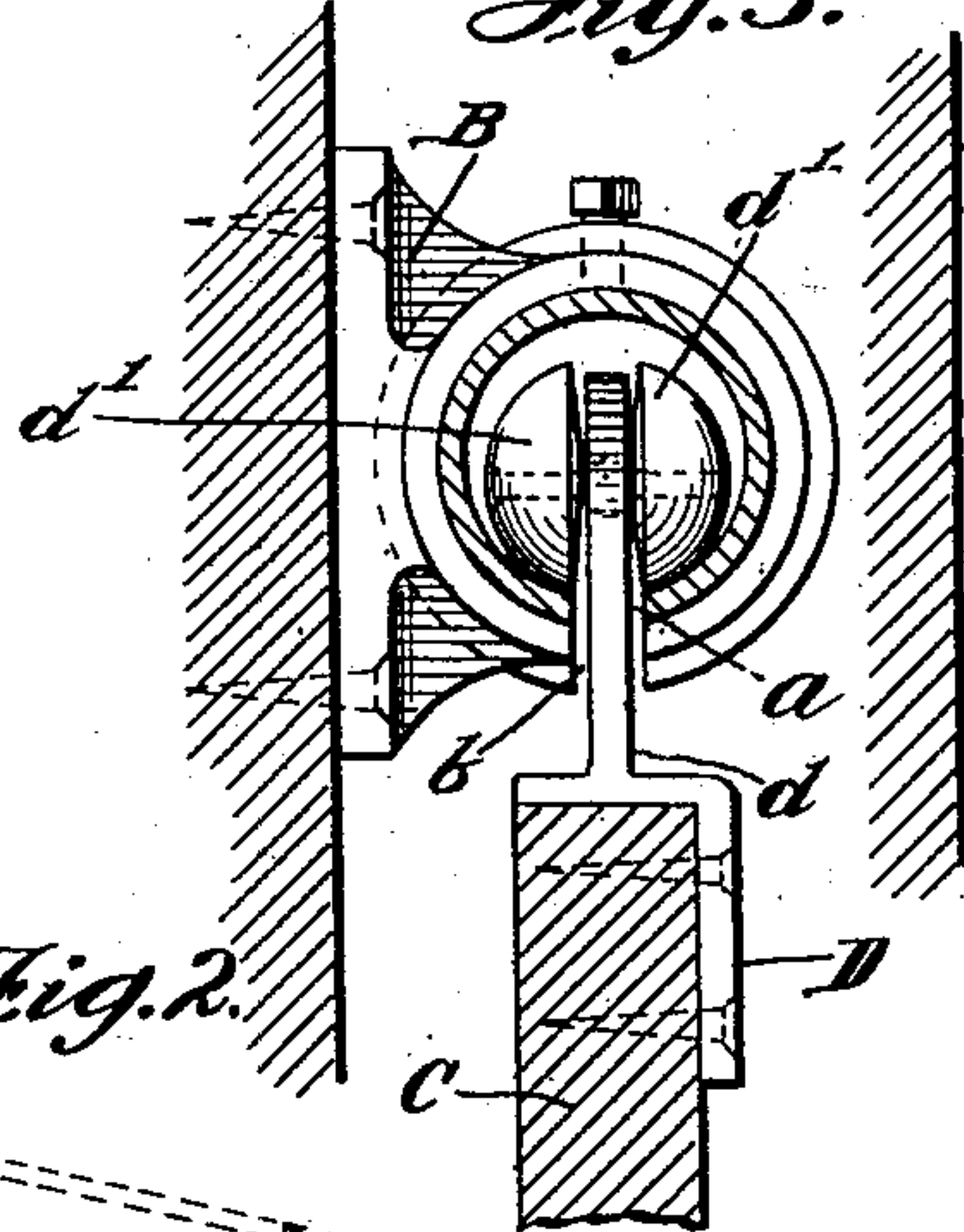


Fig. 4.

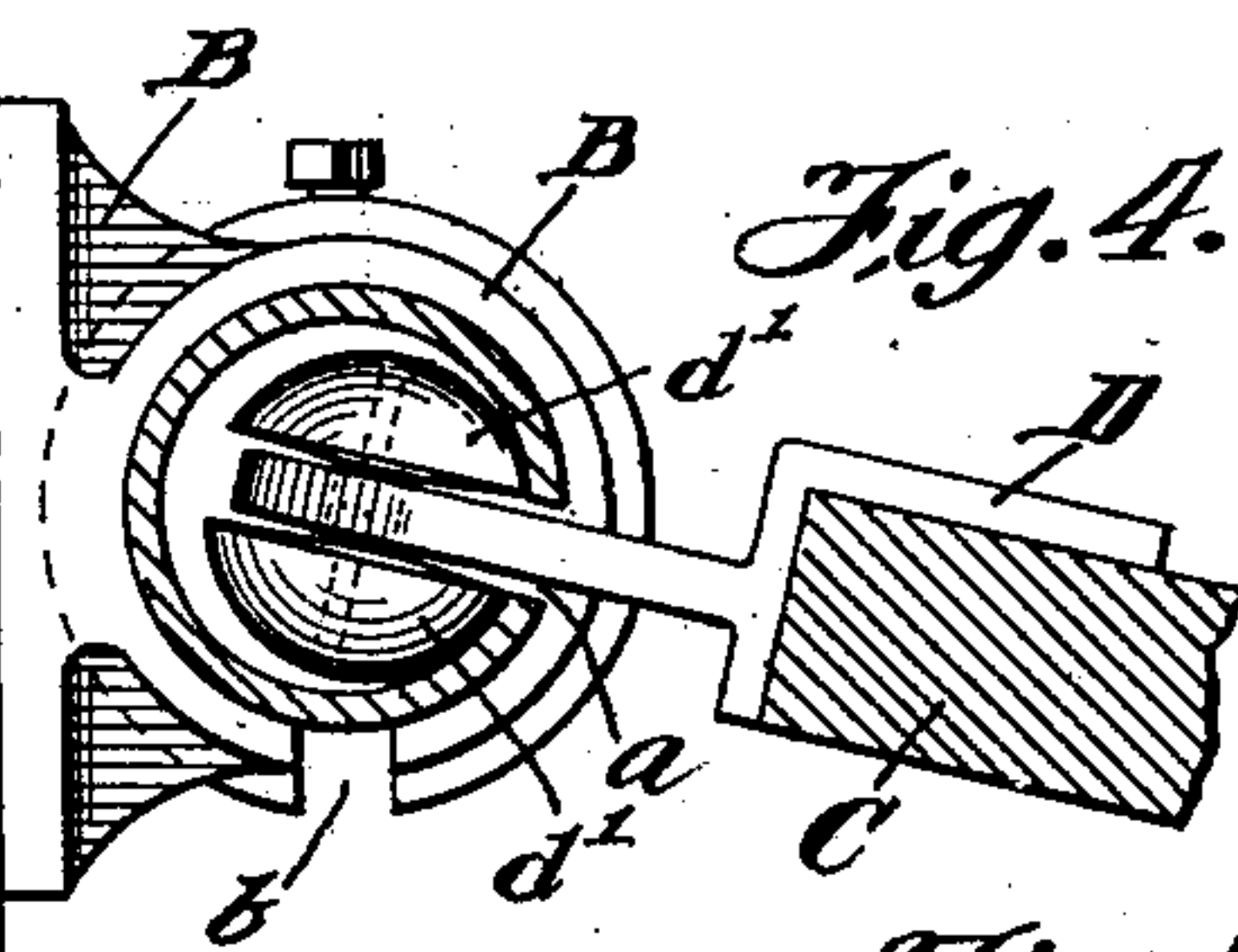


Fig. 5.

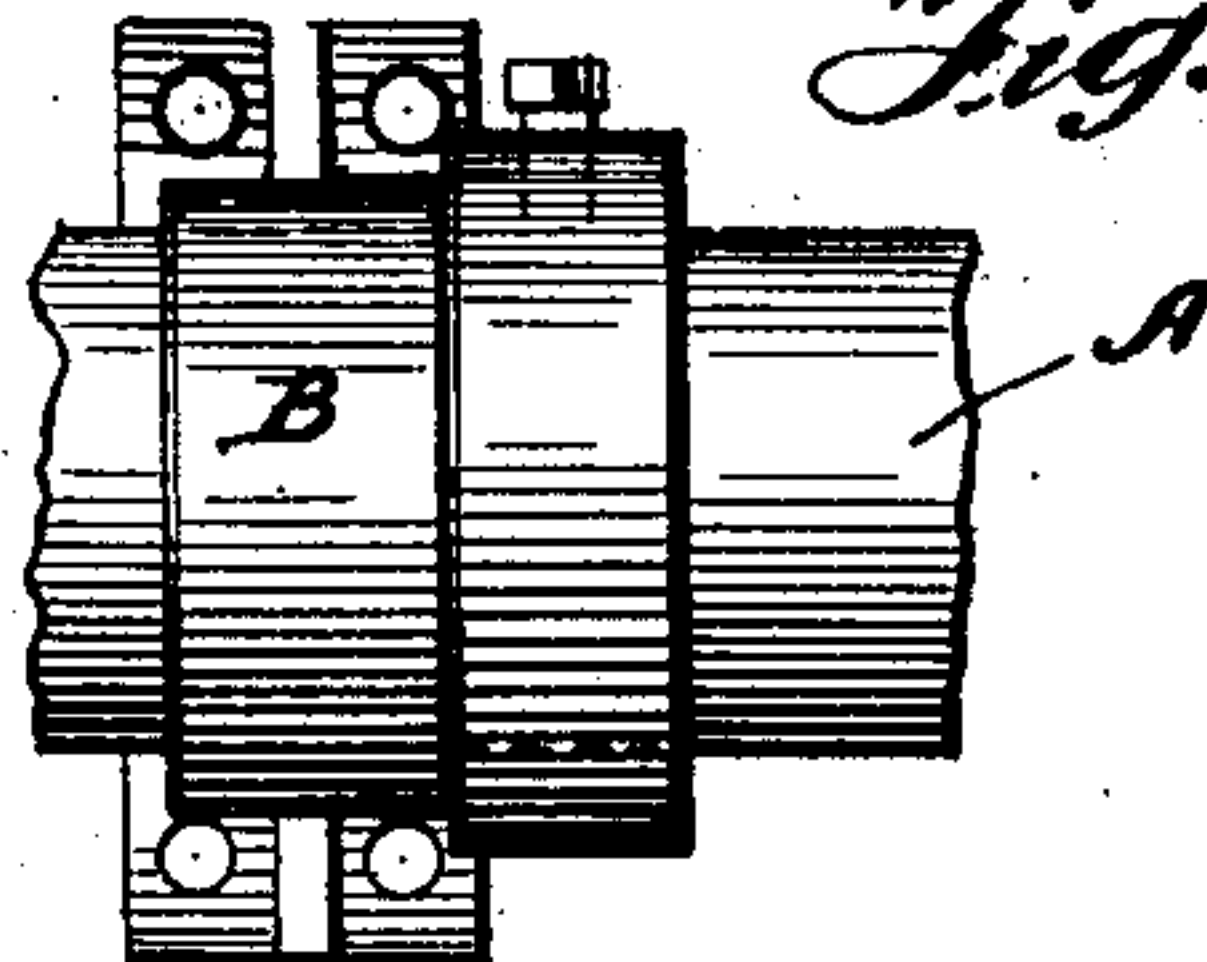


Fig. 6.

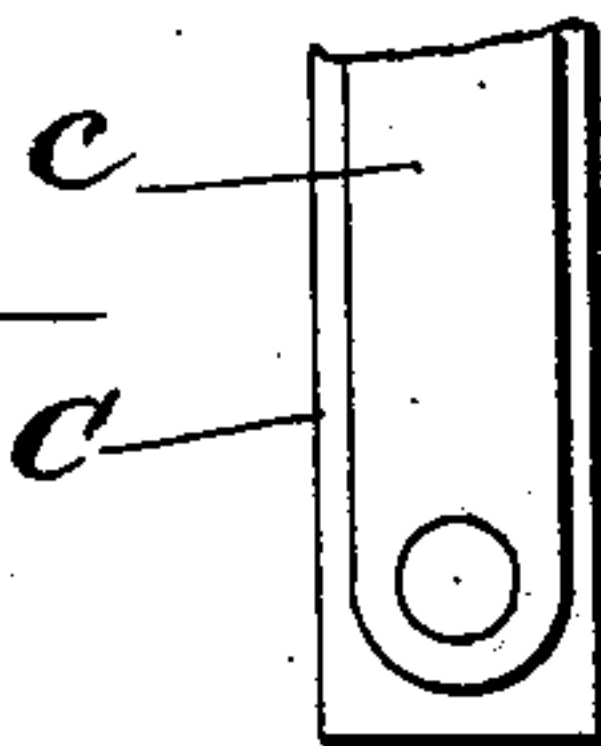
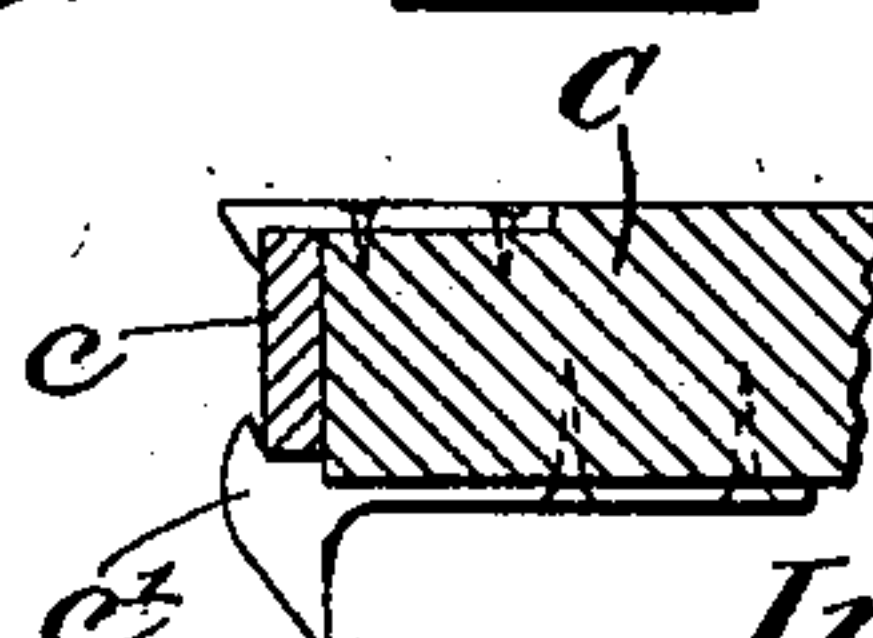


Fig. 7.



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2 SHEETS—SHEET 2.

Fig. 8.

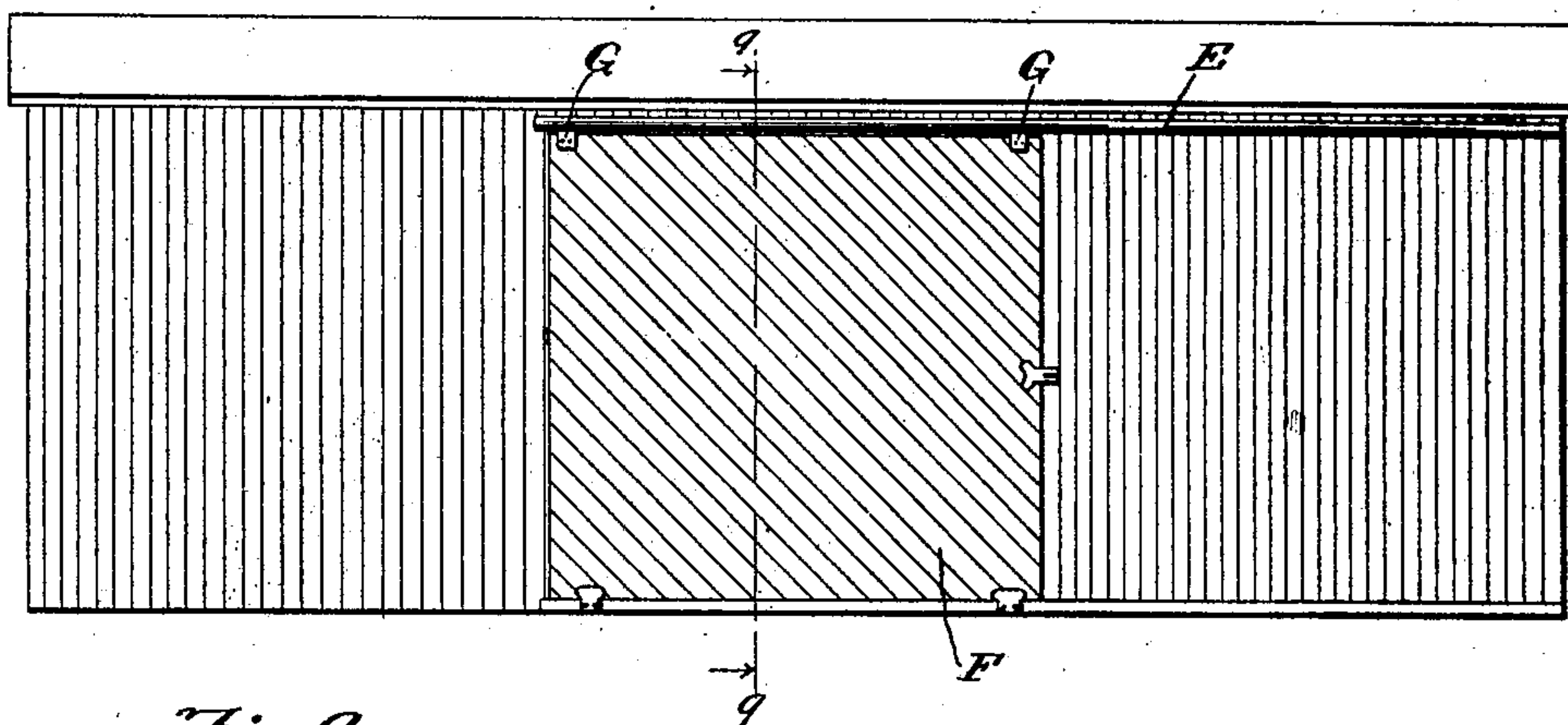


Fig. 9.

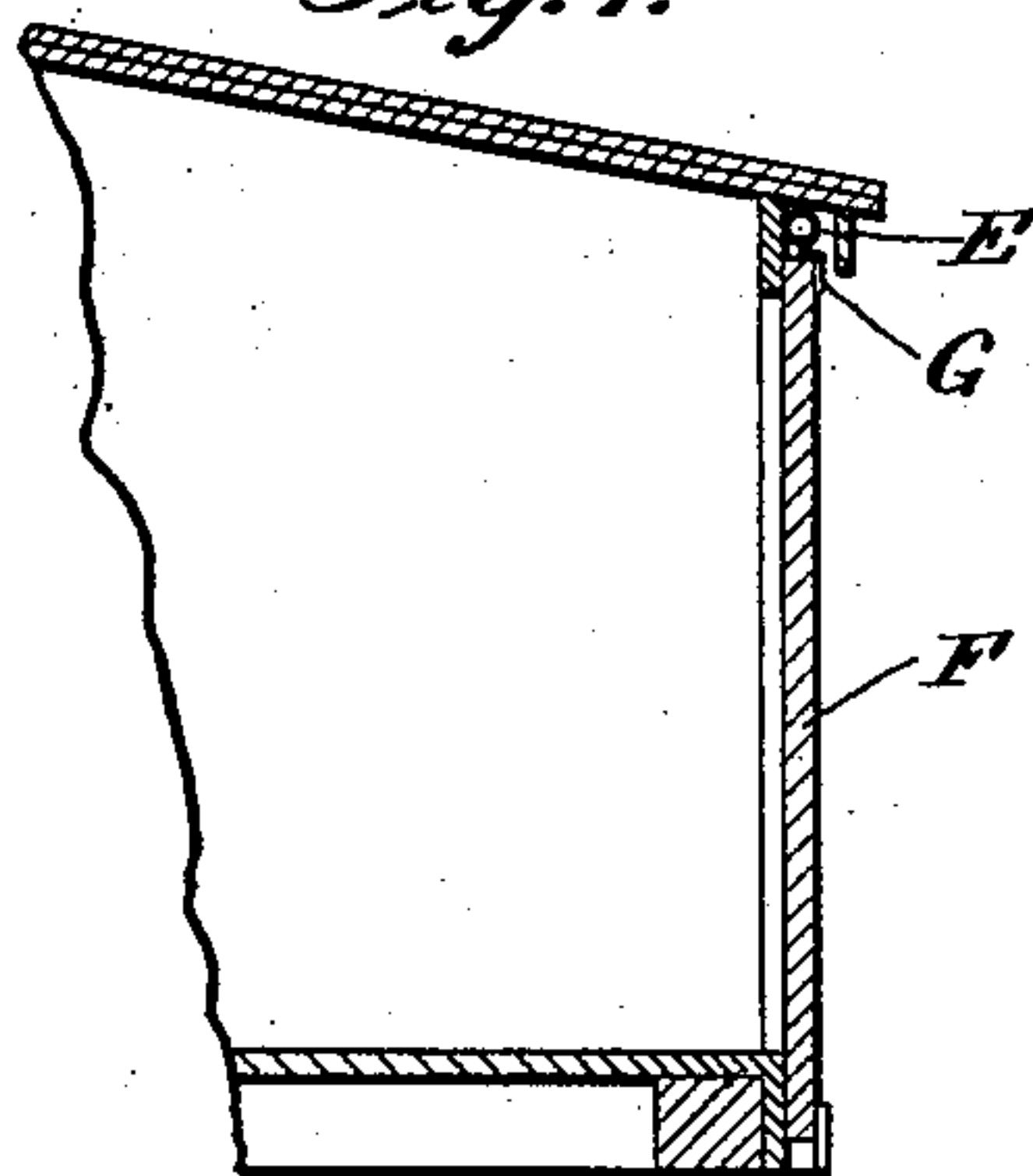


Fig. 10.

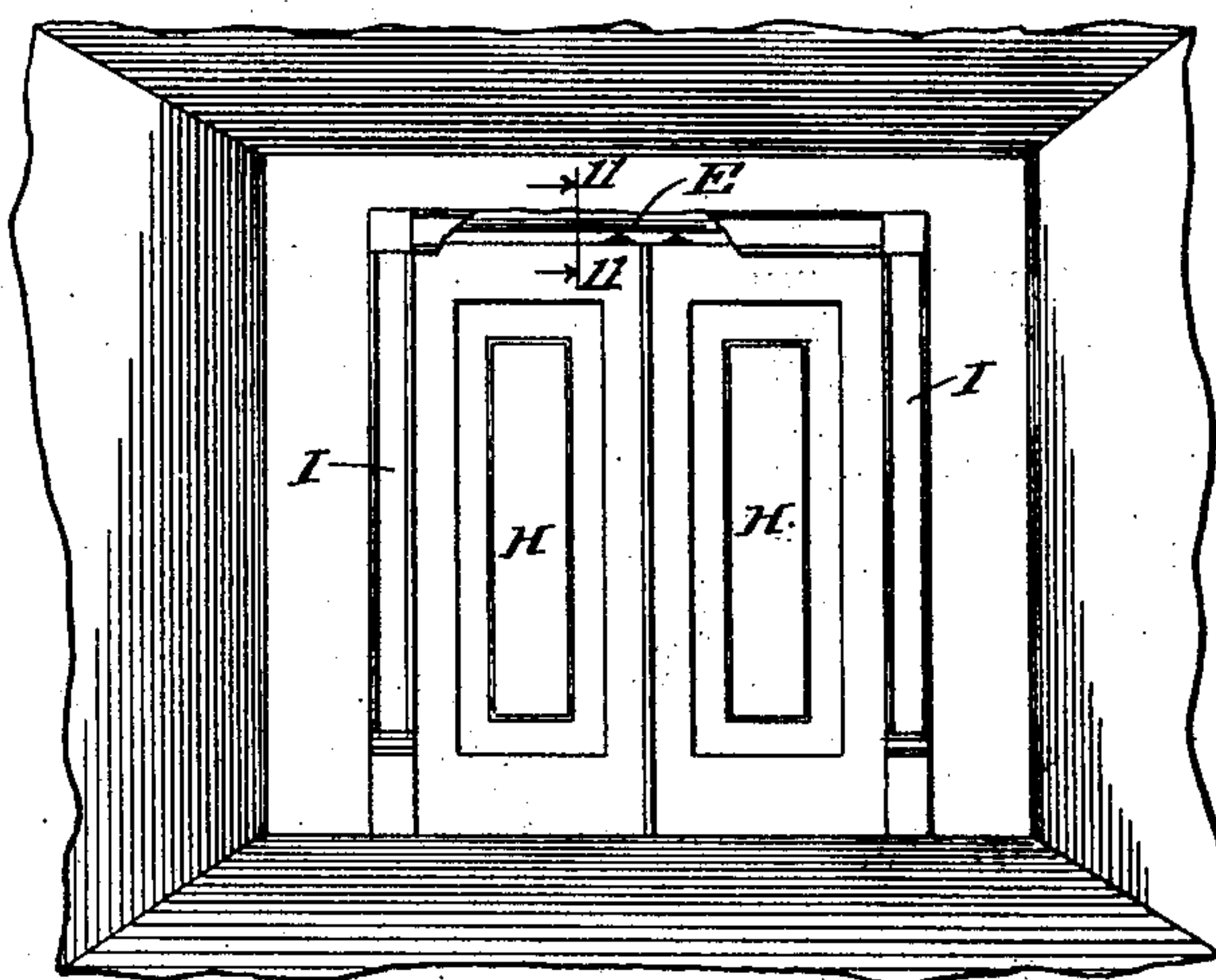


Fig. 11.

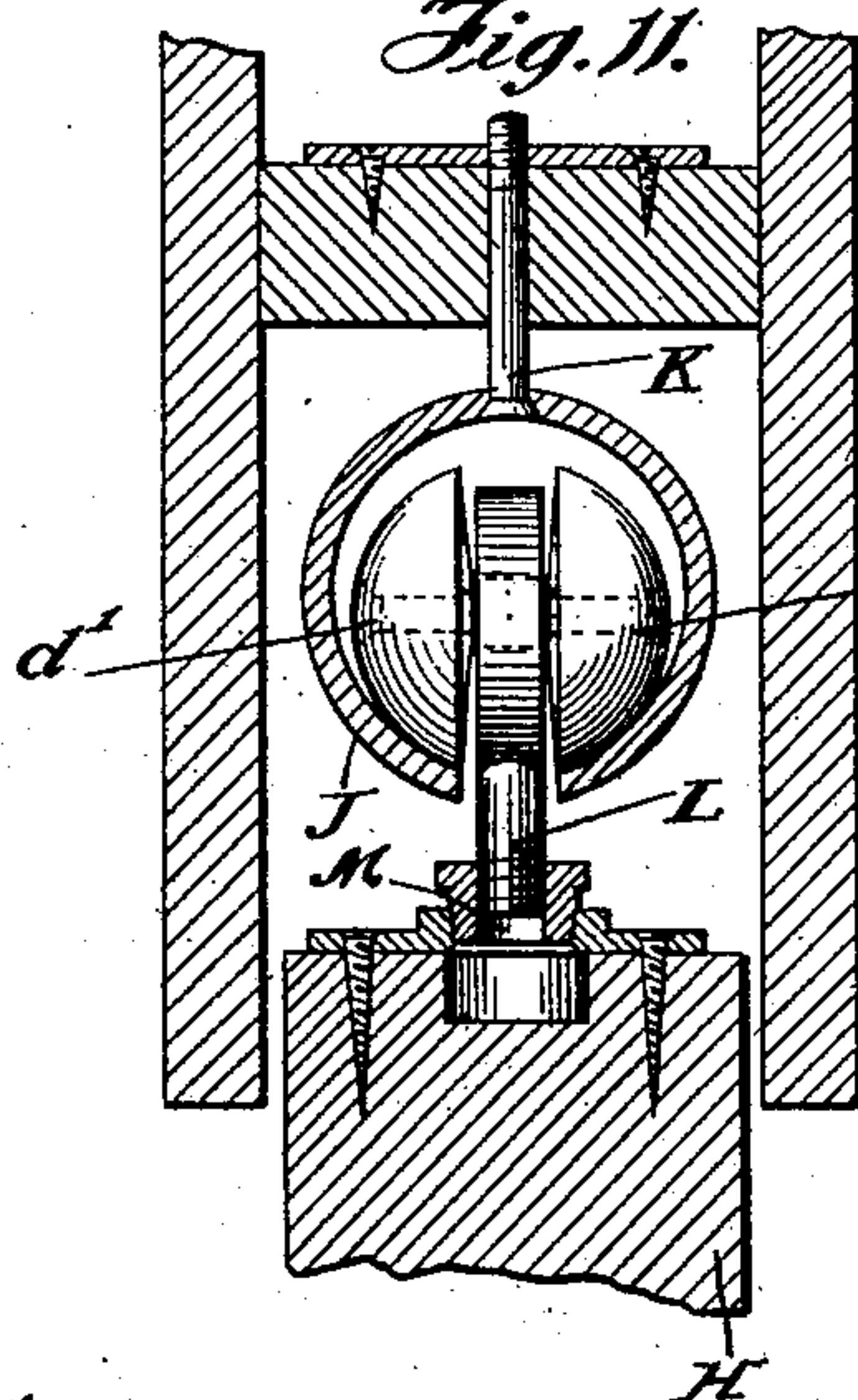


Fig. 12.

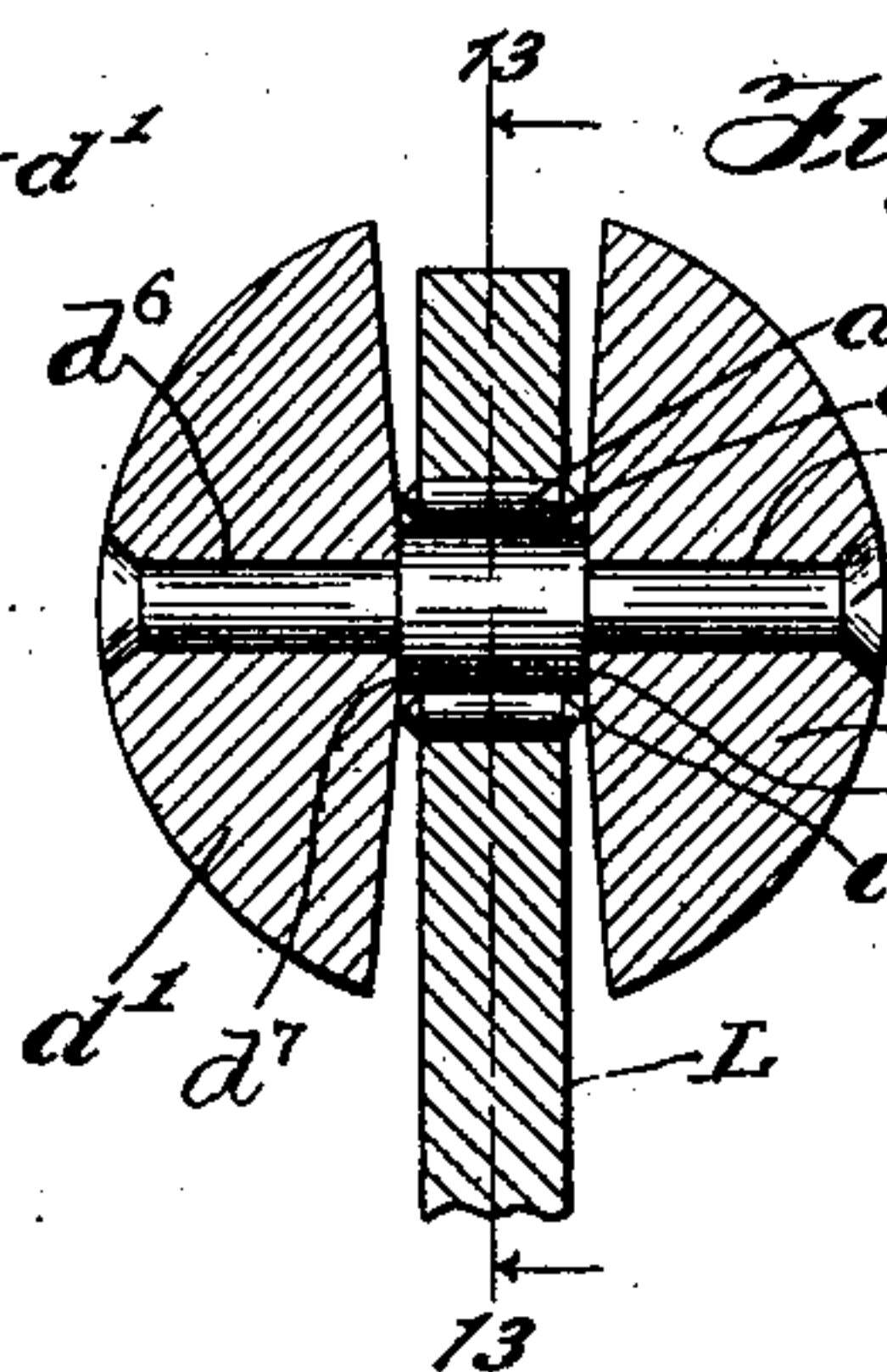
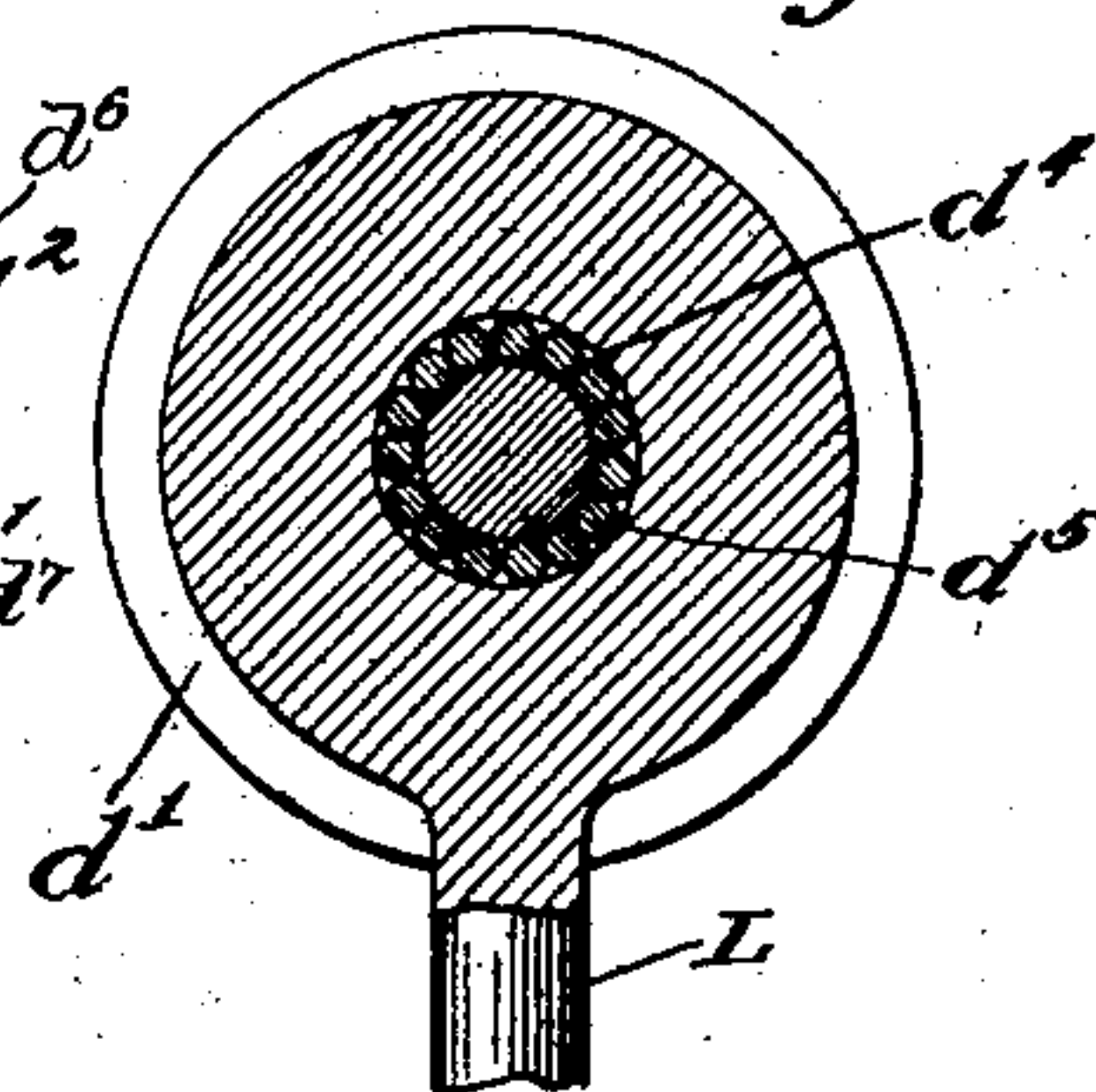


Fig. 13.



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UNITED STATES PATENT OFFICE.

FRANK B. COOK, OF CHICAGO, ILLINOIS.

TRAVELING HANGER.

SPECIFICATION forming part of Letters Patent No. 762,281, dated June 14, 1904.

Application filed November 17, 1902. Serial No. 131,628. (No model.)

To all whom it may concern:

Be it known that I, FRANK B. COOK, a citizen of the United States of America, and a resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Traveling Hangers, of which the following is a specification.

The object of my invention is the provision of a simple, improved, comparatively cheap, reliable, and highly-efficient door-hanger arrangement of that particular type in which spherical or practically spherical hanger-rolls are mounted on a door and adapted to travel in the bore of a longitudinally-slotted track or hollow way.

In a door-hanger arrangement characterized by my improved construction each hanger-roll consists of a cylindrical journal or connecting member, the same being provided at its center with an enlargement providing shoulders, and of a pair of hemispherical members driven onto the reduced end portions of said journal and held thereon by riveting over or upsetting the ends of the journal, so as to cause the said hemisphere-like sections of the spherical or practically spherical roll to bear against the two shoulders formed by enlarging the central portion of the journal. With this construction the enlarged central portion of the journal is adapted to be mounted in a bearing secured to the door, and the roll thus constructed and mounted and provided with perfectly-smooth convex sides is adapted to travel within the tubular track or way, mounted in any suitable manner just above the doorway, the bearing in which the roll is mounted and which is secured to the door traversing the slot in the bottom of the tube when the door is opened or closed. It will be understood that the door can be provided with as many hanger-rolls of this character as may be found necessary or desirable.

In the accompanying drawings, Figure 1 is a side elevation of a barn, showing the door thereof supported by hangers embodying the principles of my invention. Fig. 2 shows a portion of the end of said barn and illustrates the manner in which the barn-door may be swung outward and upward into substantially a horizontal position. Fig. 3 is a cross-section

tion of the improved track or way in which the hangers travel, the figure showing one of the hangers in place. Fig. 4 is a view similar to Fig. 3, but showing the tubular track or way rotated sufficiently to allow the hanger and the barn-door to occupy substantially a horizontal position. Fig. 5 is a front view of the supporting-bracket shown in Figs. 3 and 4 and showing also a portion of the tubular track and the collar for holding the latter against longitudinal displacement. Fig. 6 is an edge view of one of the lower corners of the barn-door shown in Fig. 1, illustrating the pivotal connection between the props which are shown in Figs. 1 and 2 and which are employed for supporting the door in its horizontal position. Fig. 7 is a horizontal section through the upper portion of the door on line 7 7, illustrating the catch used for holding the props in their normal position. Fig. 8 is a side elevation of a freight-car having a door mounted on hangers constructed in accordance with my invention. Fig. 9 is a section on line 9 9 in Fig. 8. Fig. 10 is a front elevation of a pair of sliding parlor-doors, showing the room in perspective and showing a portion of the door-frame broken away to illustrate the location and arrangement of the tubular track or way. Fig. 11 is a cross-section on the upper portion of the door-frame on line 11 11 in Fig. 10, showing the construction and arrangement of the hanger and the track or way. Fig. 12 is an axial section through the upper portion of one of the hangers. Fig. 13 is a cross-section on line 12 12 in Fig. 12.

Referring to Figs. 1 to 7, inclusive, my invention contemplates the provision of a tubular track or way A, suitably supported in brackets or hangers B and provided on its under side with a longitudinally-extending slot *a*. The track or way thus constructed and supported is arranged to extend above the doorway of the barn. The sliding door C can be provided with hangers D, which will engage the said track or way, and thus support the door for back-and-forth movement for the purpose of closing the doorway. Each hanger preferably consists of a shank or body portion *d*, adapted at its lower end to be bolted or

screwed to the upper portion of the door. At this upper end each hanger is preferably provided with a couple of practically hemispherical rolls d' . These rolls, as shown in Figs. 12 and 13, can be rigidly connected by an axle d^2 , having its middle portion d^3 slightly enlarged. This portion d^3 extends through an opening d^4 in the upper portion of the hanger, and thus it has a bearing in the hanger, so as to allow the rolls to revolve freely. If desired, antifriction rolls or balls d^5 can be interposed between the bearing-surfaces of the hanger and the axle portion d^3 . If rolls are employed, the same are preferably provided with pointed or reduced ends, as shown in Fig. 12, so as to reduce friction between these rolls and the hemispherical rolls d' . Thus constructed it will be seen that the two practically hemispherical rolls combine to practically form a ball or sphere the diameter of which is only slightly less than that of the bore of the tubular track or way A. Thus the hangers can be thrust upward, sidewise, or even twisted somewhat without causing any cramping or binding action or without destroying the antifriction-bearing between the hangers and the track or way. In other words, the hangers always find an antifriction-bearing or point of contact in the track.

Referring to Figs. 8 and 9, it will be seen that my improved hanger and tubular track or way are equally applicable to a car-door. In these two views the track or way E is the same in form as the track or way A in Fig. 1. The car-door F is provided with hangers G, similar to the hangers D in Fig. 1. With this arrangement the car-door can travel back and forth for the purpose of opening and closing the doorway of the car.

In Figs. 10 and 11 I have illustrated the application of my improved hanger and tubular track or way to a pair of parlor-doors H. The upper horizontal portion of the door-frame I is constructed so as to inclose the tubular track or way J. Preferably in this case this track or way is supported by screw-hangers K, whereby the track or way can be adjusted up or down and leveled. The hangers L are substantially the same as those previously described, except that in this instance their lower ends are threaded and adapted to engage adjusting-nuts M. With this arrangement the hangers can be adjusted relatively to the doors so as to insure a proper position and operation of the latter.

Referring again to Figs. 1 to 7, inclusive, the tubular track or way can, if such is desired, be supported for rotation in the brackets or hangers B, so as to permit the barn-door to be swung upward or outward into a substantially horizontal position. While in its normal position the slot a in the track or way registers with openings b in the said brackets. In this way the hangers on the door can travel back and forth and pass the brack-

ets; but when the door is swung outward, as shown in dotted lines in Fig. 2, then the slot in the piping of which the track is composed moves away from the openings or caps in the brackets, as shown in Fig. 4. In this way the brackets can be made to prevent sliding or traveling movement on the part of the door when the latter is swung into its elevated position. In order that the door may be properly supported in this position, it can be provided with a pair of props c , pivoted at their lower ends to the ends or edges of the door and adapted at their upper ends to engage the spring-catches c' . Now when the door is swung upward these props can be released at their upper ends, and these released or free ends of the props can then be swung downward and into position to support the door, as shown in Fig. 2.

Thus it will be seen that I provide an improved form of hanger and track which is applicable to all kinds of sliding doors. It is obvious that they are also applicable to other structures where it is desired to support a certain article or object for traveling movement. The track or way can be cheaply and easily manufactured, inasmuch as it is composed merely of piping having a longitudinally-extending slot. The hemispherical rolls, as explained, preferably combine to form a sphere which is only slightly less in diameter than the bore of the tubular track. Thus the device as a whole is not only of simple and cheap construction, but is at the same time strong and durable and of a character to reduce friction to a minimum. It will also be seen that the tubular track or way by reason of its inclined inner surfaces tends to rid itself of all dust or dirt which may accumulate within its bore. Thus while the hangers are effectually inclosed against rain and other weather attacks they are at the same time adapted to easily rid themselves of all dust or dirt which may enter through the longitudinally-extending slot.

If desired, the hangers B (shown in Fig. 1) may be mounted for vertical adjustment.

It will be observed that the axle, or, more properly speaking, the journal, d^2 is provided, as stated, with an enlarged middle portion d^3 and that consequently the inner end of each reduced end portion d^6 terminates in a shoulder d^7 . With this construction the hemisphere-like sections d' of the spherical or practically spherical roll are adapted to be forced upon the said reduced end portions d^6 and held thereon by upsetting or riveting over the outer ends of the said journal, so as to cause the said roll-sections to impinge or bear firmly upon the said shoulder d^7 . This renders the roll structure extremely strong and rigid in character, provides the roll as a whole with absolutely smooth convex sides, and adds materially to the efficiency and serviceability of the hanger arrangement as a whole. Also

the construction thus simplified and improved tends to materially reduce the cost of manufacture, and it will of course be understood that the hanger-rolls shown in the different 5 figures throughout the drawings are all constructed the same as the one shown in Fig. 12, for example—that is to say, in each figure of the drawings the roll comprises the two hemispherical roll-sections secured upon 10 the reduced end portions of the journal, as shown in dotted lines in Figs. 3, 4, and 11, and against the shoulders provided by the enlarged middle portion of the journal by upsetting the outer ends of said journal.

15 What I claim as my invention is—

In a door-hanger arrangement, the combination of a journal enlarged at its center to

provide a pair of shoulders, a pair of hemispherical roll-sections secured upon the said journal and held against the said shoulders by 20 upsetting the outer ends of the journal, a hanger-body having a bearing portion situated between the two roll-sections and mounted on the said enlarged middle portion of the journal, and a longitudinally-slotted tube in 25 which the hemispherical or practically hemispherical roll composed of the two rigidly-connected roll-sections is adapted to travel.

Signed by me at Chicago, Cook county, Illinois, this 15th day of November, 1902.

FRANK B. COOK.

Witnesses:

CHAS. C. BUCKLEY,

HARRY P. BAUMGARTNER.