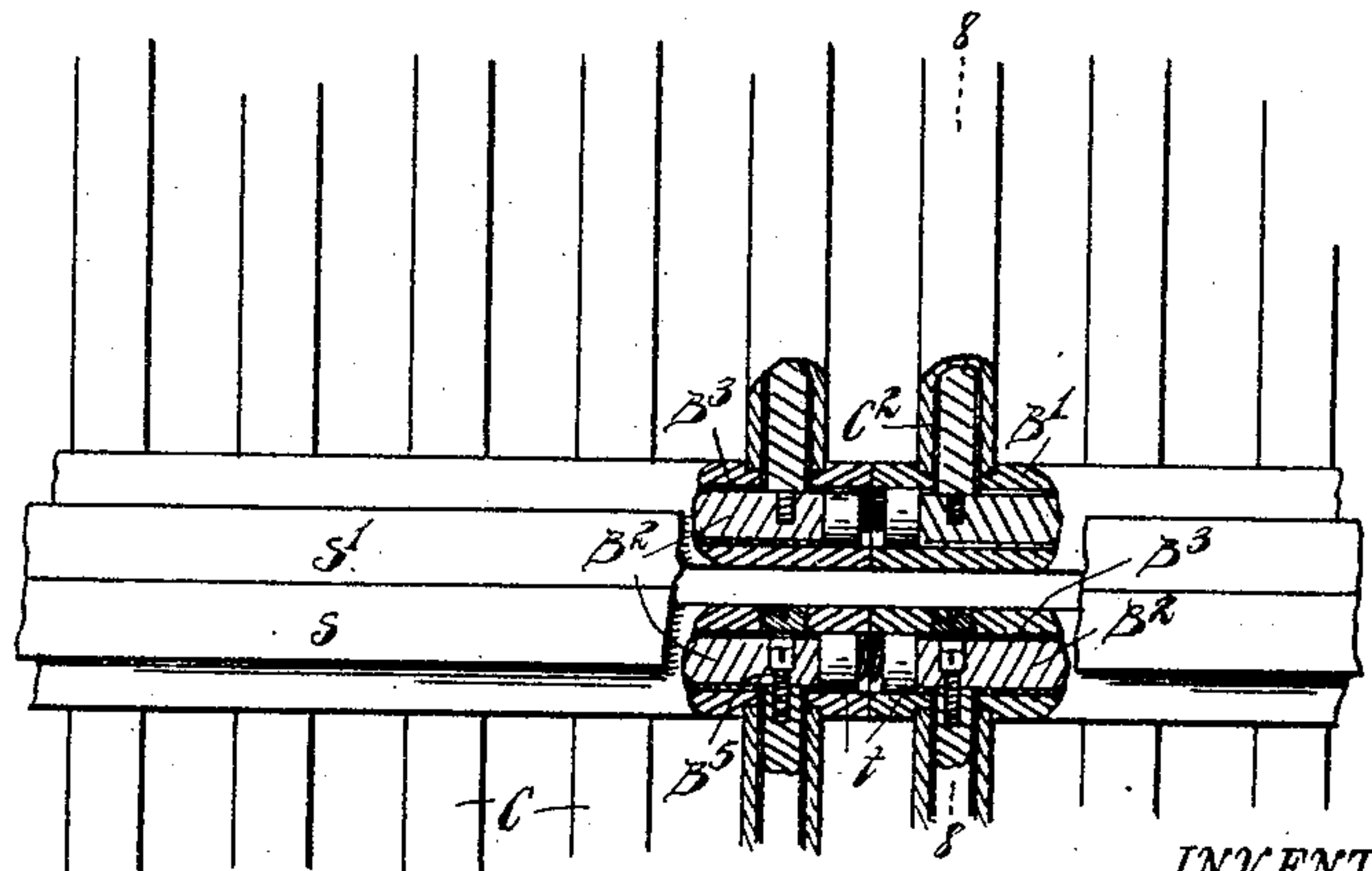
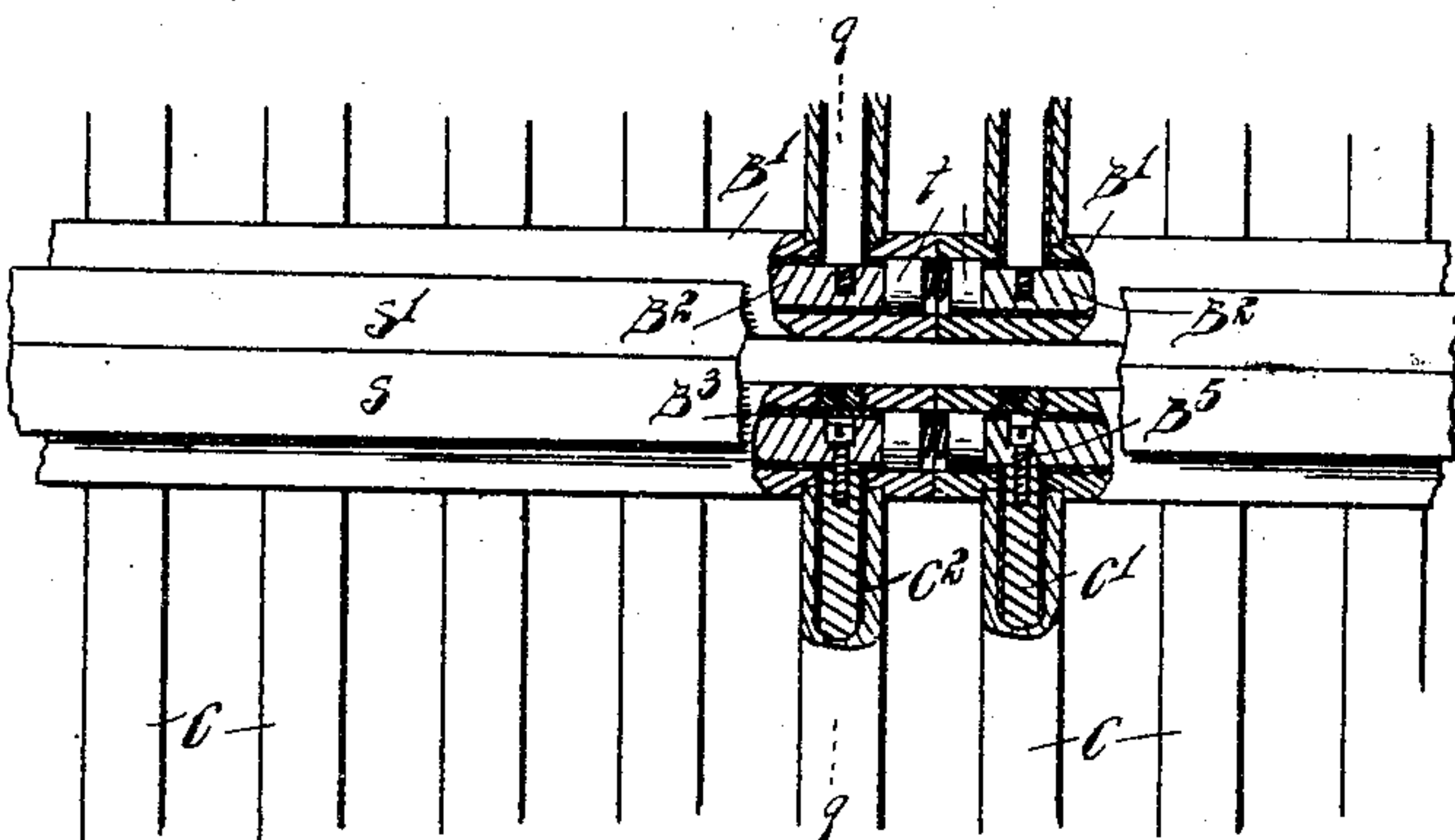
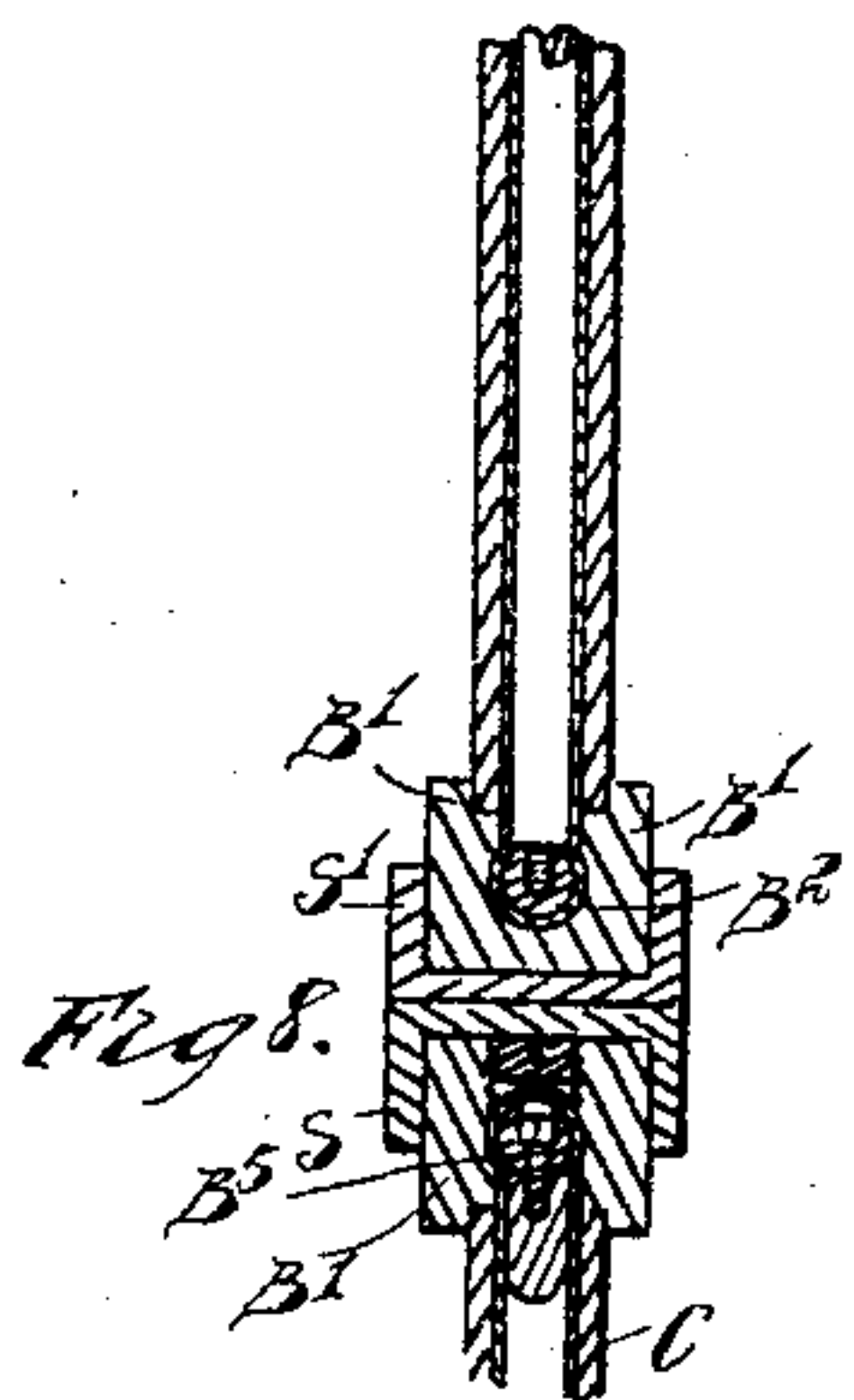
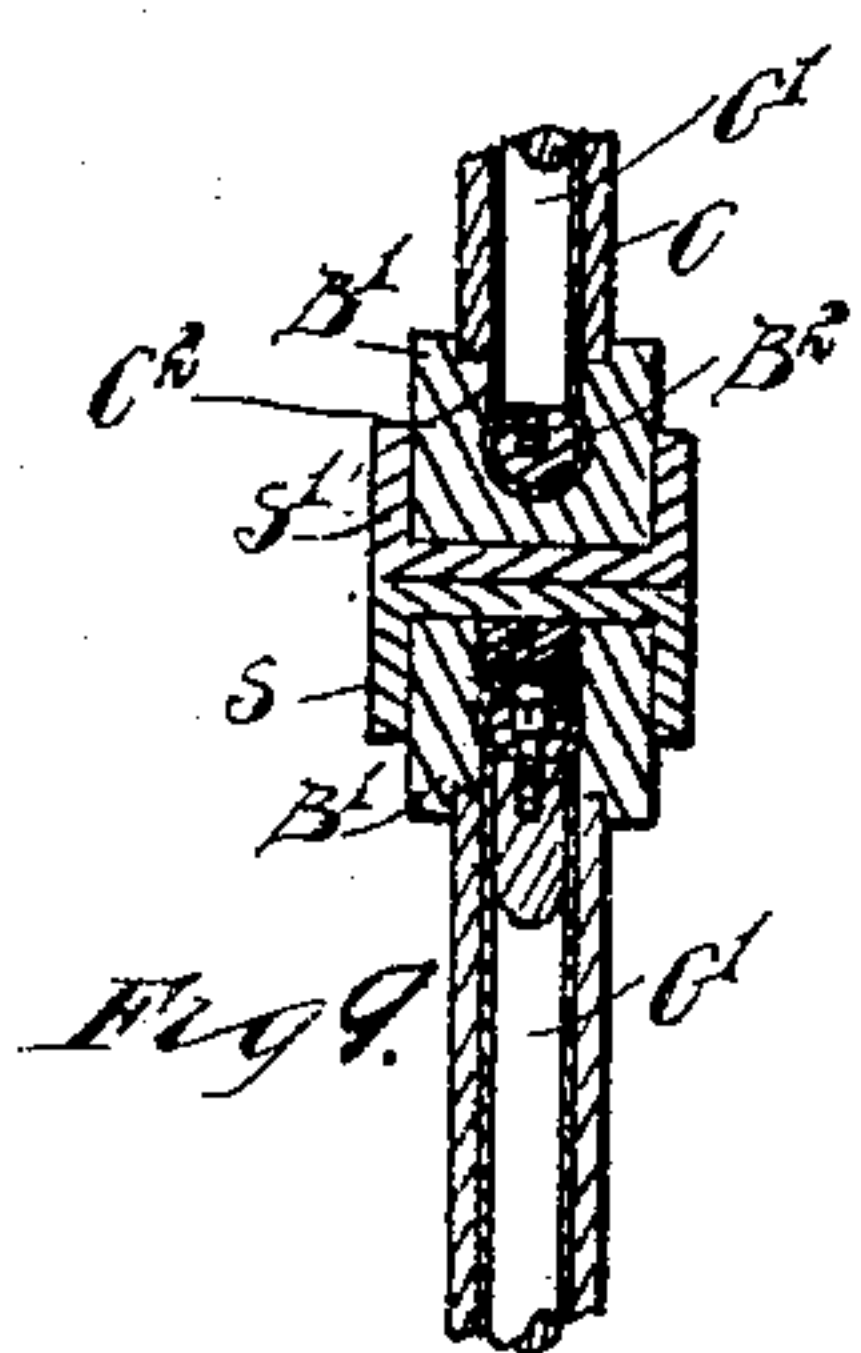
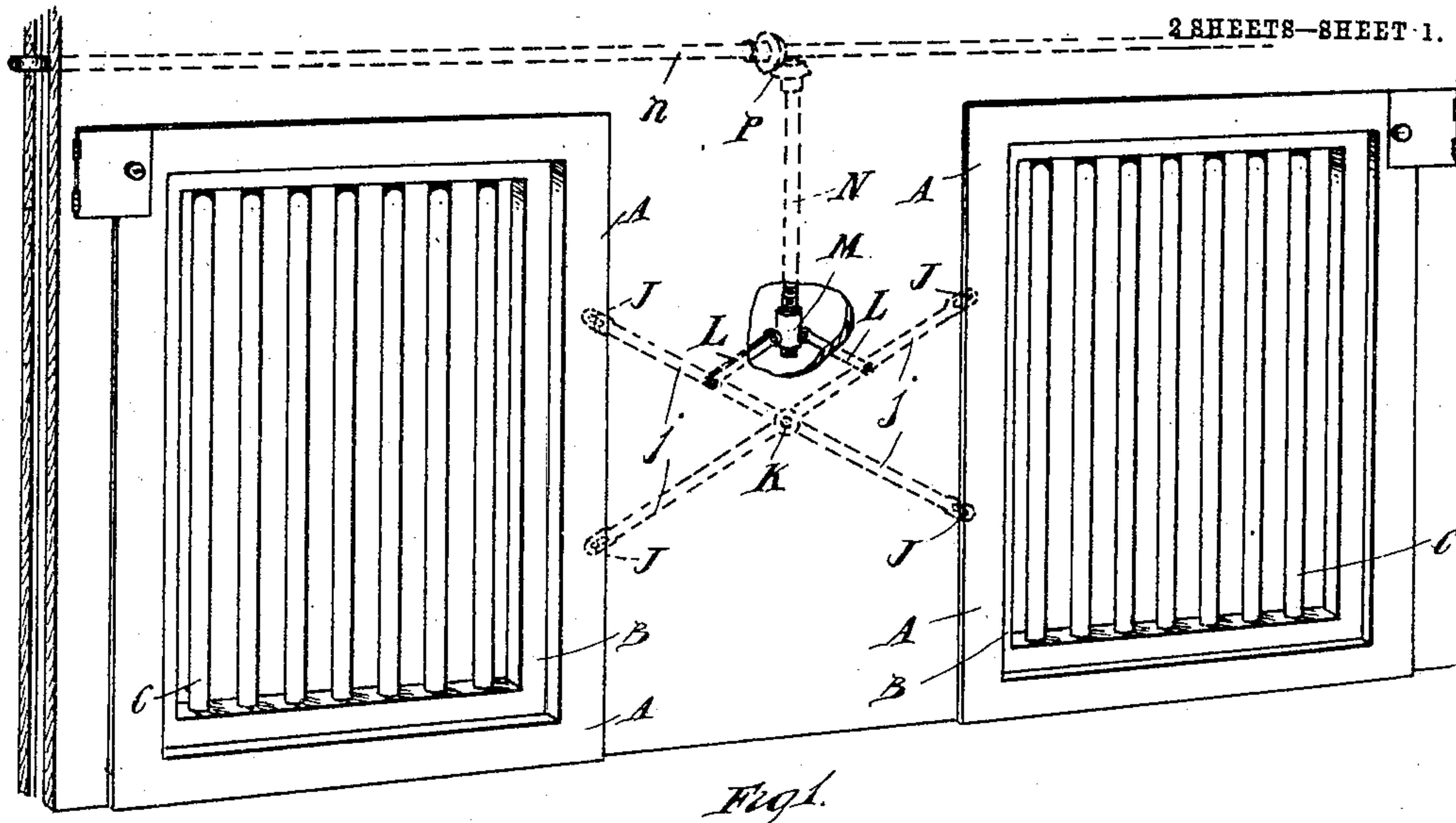


No. 782,787.

PATENTED FEB. 14, 1905.

I. MALOCH.
JAIL DOOR AND GRATING.
APPLICATION FILED DEC. 16, 1903

2 SHEETS—SHEET 1.



WITNESSES
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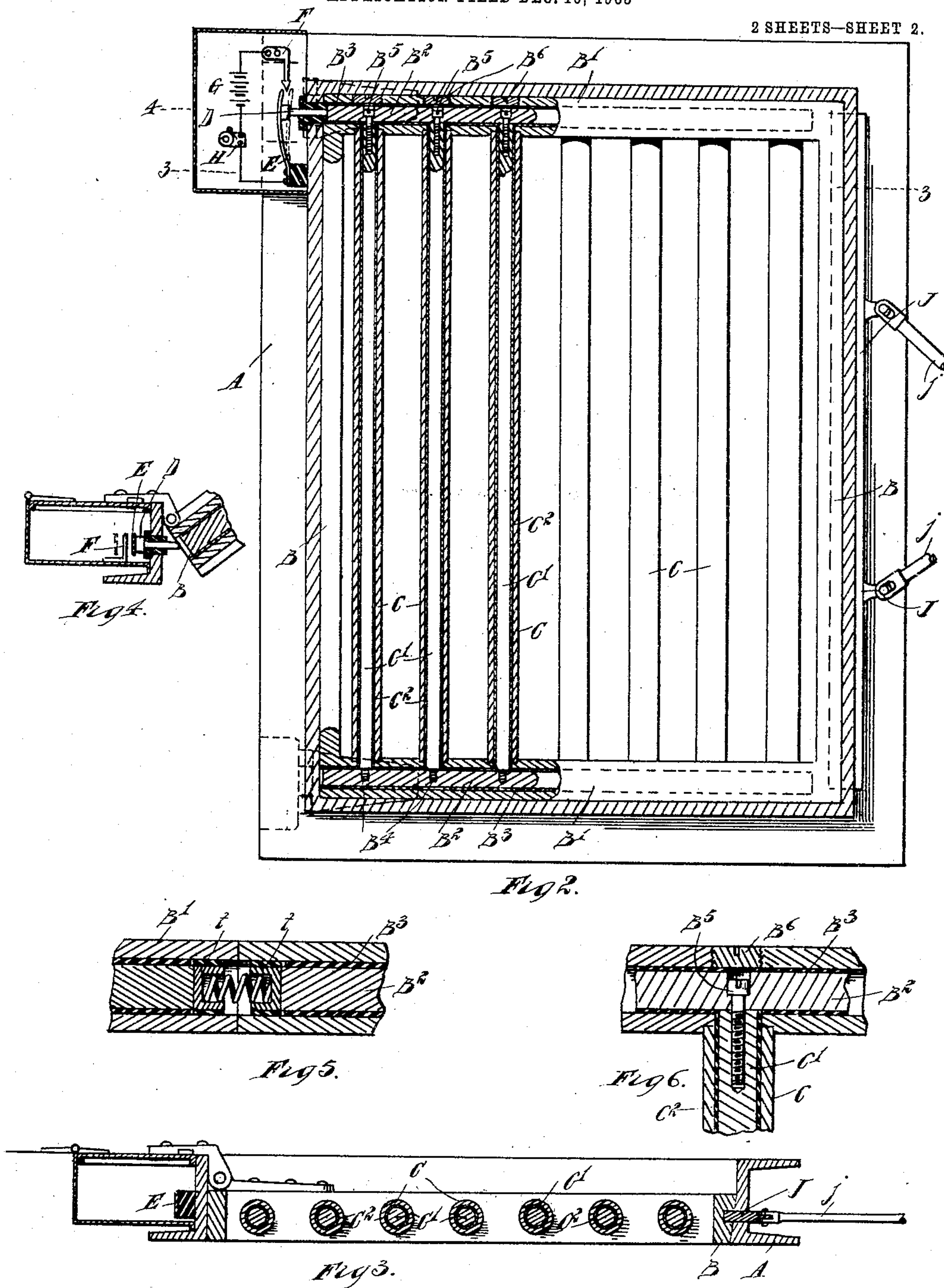
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UNITED STATES PATENT OFFICE.

ISRAEL MALOCH, OF WYANDOTTE, MICHIGAN, ASSIGNOR OF ONE-HALF
TO JAMES E. VREELAND, OF WYANDOTTE, MICHIGAN.

JAIL DOOR AND GRATING.

SPECIFICATION forming part of Letters Patent No. 782,787, dated February 14, 1905.

Application filed December 16, 1903. Serial No. 185,363.

To all whom it may concern:

Be it known that I, ISRAEL MALOCH, a citizen of the United States, residing at Wyandotte, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Jail Doors and Gratings; and I 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, which form a part of this specification.

My invention relates to doors and gratings for jails; and it consists in the improvements hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a perspective view of a part of jail-doors embodying my invention with a portion of the walls adjacent thereto. Fig. 2 is an elevation of a jail-door, partly in section, and the framing in which it turns shown in section. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a detail section at the line 4 of Fig. 2, showing the mechanism for electrically indicating when the door is open or shut. Fig. 5 is a detail sectional view showing the method of securing a good electrical contact when the interior bars form a joint. Fig. 6 is a detail sectional view showing the junction between the upper interior cross-bars and one of the interior vertical bars. Fig. 7 is an elevation, partly in section, showing the construction of the grating when one division is built upon another. Fig. 8 is a section of the lower portion of the grating as shown in Fig. 7 on the line 8 8 of said figure. Fig. 9 is a section on the line 9 9 of Fig. 7.

A is the frame in the wall or partition to which the door is hinged and in which it closes.

B B are the upright sides of the door-frame, and B' B' are the cross-bars of said frame.

C C indicate the outer portions of the vertical bars of the grating.

C' C' are bars of conducting material concentric with and inside of the portion C C.

C² is insulating material between the outer portion C and the inner bars C'. The lower cross-bar B' of the door-frame is perforated longitudinally, and within the aperture is placed a bar of conducting material B².

B³ is insulating material between the outer portion of the cross-bar B' and the interior bar B². The interior vertical bars C' are provided with screw-threaded shafts B⁴ at their lower ends, which screw into threaded apertures in the lower interior cross-bar B², as indicated in Fig. 2.

The upper cross-bar B' of the door-frame is constructed like the lower portion, except that vertical apertures are formed through the interior bars B², through which screws B⁵ pass and engage with threads in apertures on the upper ends of the inner bars C'.

The outer portion of the upper cross-bar B' has openings formed through it to allow of the passage of screws B⁵, which apertures are closed by screw-threaded plugs B⁶.

D is a pin adapted to slide in an aperture through the frame A and insulated from said frame.

E is a leaf-spring bearing against the end of the pin D and acting to press it inward. The pin D is so located that the door on closing shall press it inward, the end of the bar B² contacting the end of said pin, as indicated in Fig. 4.

F is a lug secured to the frame interposed in the path of travel of the upper end of the spring E. Wires are secured to the leaf-spring E and lug F and includes a battery G and annunciator H. The lug F communicates with the frame A and with the exterior metal parts C and B of the door. The spring E is in contact with the pin D and through it communicates with the inner bars C' C' of the door.

When the door is closed, the spring E is pressed beyond the lug F and is not in contact with it. When the door is open to a considerable extent, the spring E has passed and is inside of the lug F, as indicated in Fig. 4, and is not in contact with said lug.

When the door is slightly opened, the spring E comes in contact with the lug F, complet-

ing the circuit through the battery G and annunciator H, causing the bells or other signals to sound. Should an attempt be made to saw one of the vertical bars or the upper
 5 or lower bar, contact will be made between the inner portion of the door and the outer portion, completing the circuit in which is the battery G and annunciator H and sounding an alarm. The annunciator H may be lo-
 10 cated in the general office of the jailer, and there may be one to each door, so that the locality of the place or point of completing the circuit will be at once indicated. Where one of the inner bars C' ends and it is desired to
 15 continue the conductor in the same line, I place another section of said bar in the same aperture as a continuation of the first bar, interposing between the end of the two portions of the inner bars caps *t t*, with a spiral spring
 20 interposed between them to hold the contact. This construction is indicated distinctly in Fig. 5. Where it is desired to build two of the above-described gratings, one upon the
 25 other, I interpose two U-shaped pieces or channel-bars S S', (see Figs. 7, 8, and 9,) turned with their flanges pointing in opposite directions, and into the channel of these U-shaped pieces I place the bars B'. The construction is otherwise as above described.

30 To lock and unlock the doors simultaneously from one station, I employ the pivoted cross-bars *j j*, Fig. 1, having locks J at their ends. These cross-bars are pivoted upon a pin at K.

35 L L are links, each of which is pivoted at one end of one of the cross-bars *j* and at the other end to a sliding cross-head M, which is provided with screw-threaded apertures into which the end of a screw-threaded bar N en-
 40 gages. The bar N is provided with a bevel-gear at its upper end, and with this bevel-gear engages a second bevel-gear upon a rotatable rod *n*, as indicated at P, Fig. 1.

It will be seen that by this construction I
 45 obtain a strong grating for a jail-door which will indicate the place and locality at which an attempt to cut or break it is made and a door which will indicate when it is opened and closed. The construction is strong and
 50 readily assembled, so that it can be made cheaply.

If the electric system is in proper order and the contacts and batteries in order, this fact will be indicated when the door is opened or
 55 closed by the sounding of the annunciator.

What I claim is—

1. In a jail-door, the combination of a hollow cross-bar, having a bar within the same and insulated from it, hollow vertical bars
 60 adapted to contact the cross-bar at their ends, bars within the vertical bars insulated therefrom, the inner vertical bars and the inner cross-bar being adapted to engage each other

and means for preventing the relative movement of the outer and inner vertical bars. 65

2. In a jail-door, the combination of a hollow cross-bar at each end thereof, hollow bars extending between said cross-bars and bearing against the cross-bars, inner cross-bars in said hollow cross-bars insulated therefrom, insu-
 70 lated inner bars extending between the inner cross-bars and adapted to engage one of said cross-bars, and an adjustable means for connecting the other of said inner cross-bars, with the bars extending between the inner cross-
 75 bars.

3. In a jail-door, the combination of a hollow cross-bar at each end thereof, hollow bars extending between said cross-bars, bearing against the cross-bars, an insulated bar in one
 80 of said cross-bars provided with diametrically-extending threaded holes, insulated bars within said hollow bars adapted to engage at their ends with the threads in said holes, and provided with screw-threaded holes in their opposite
 85 ends, an insulated bar in the other of said cross-bars provided with transverse diametrically-extending holes through it adapted to permit of the passage of screws, and screws passing
 90 through said last-named holes and engaging in the screw-threaded holes in inner bars extending between said cross-bars.

4. The combination of a plurality of gratings, consisting of outer and inner bars insulated from each other, each having cross-bars
 95 at their ends, and U-shaped or channel bars lying contiguous to each other with their flanges extending in opposite directions, a cross-bar of each of said gratings lying in the channel of each of said channel-bars. 100

5. The combination of a frame, a door hinged in said frame consisting of a grating formed of outer and inner bars, the inner bars being insulated from the outer bars, an insulated
 105 movable piece making contact with the inner bars, and adapted to be actuated by the turning of the door, a lug upon the frame and in electrical connection with the outer bars, said lug and movable piece forming the terminals
 110 of an electric system containing an annunciator and generator, said movable piece being adapted to make contact with said lug intermediate the ends of its travel.

6. The combination of a frame, a door hinged in said frame consisting of a grating formed
 115 of outer and inner bars, the inner bars being insulated from the outer bars, a movable piece adapted to be actuated by the turning of the door, a stationary lug, said movable piece and lug being insulated from each other, one being
 120 in electrical connection with the outer bars and the other with the inner bars, said movable piece being adapted to make contact with said lug intermediate the ends of its travel.

7. The combination of a frame, a door hinged
 125 in said frame consisting of a grating formed

of outer and inner bars, the inner bars being insulated from the outer bars, a movable piece adapted to be actuated by the turning of the door, a stationary lug, said movable piece and
5 lug being insulated from each other, one being in electrical connection with the outer bars and the other with the inner bars, said movable piece being adapted to make and break contact

with said lug intermediate the ends of its travel.

In testimony whereof I sign this specification in the presence of two witnesses.

ISRAEL MALOCH.

Witnesses:

JAMES E. VREELAND,
ELLIOTT J. STODDARD.