

(No Model.)

3 Sheets—Sheet 1.

C. ROWELL.

SAFETY STOVE FOR RAILWAY CARS.

No. 306,864.

Patented Oct. 21, 1884.

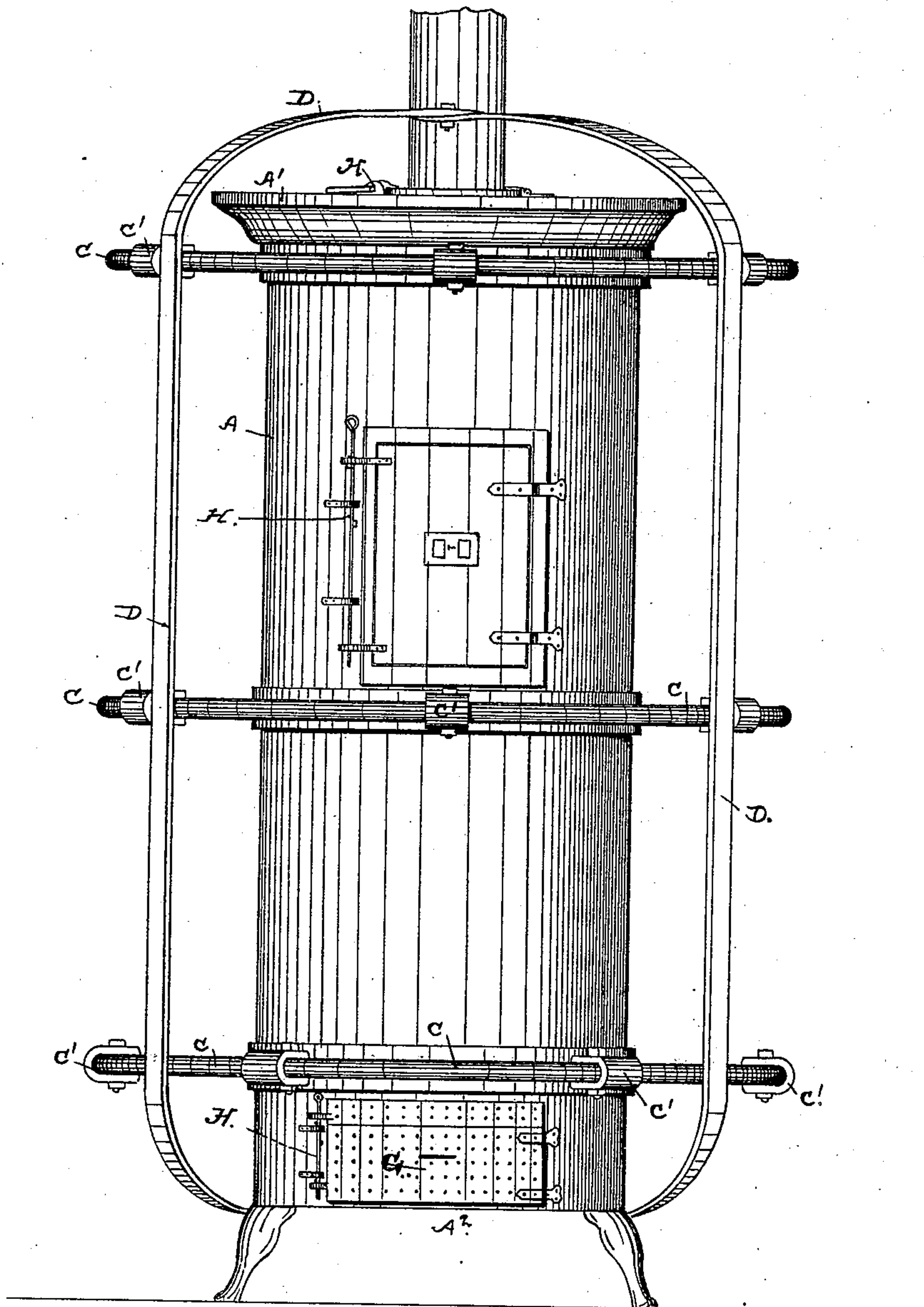


Fig. 1.

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J. W. Emerson

Inventor:

Charles Rowell  
by E. B. Brown Atty.

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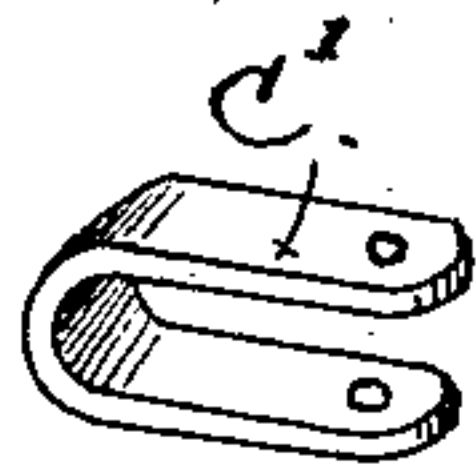
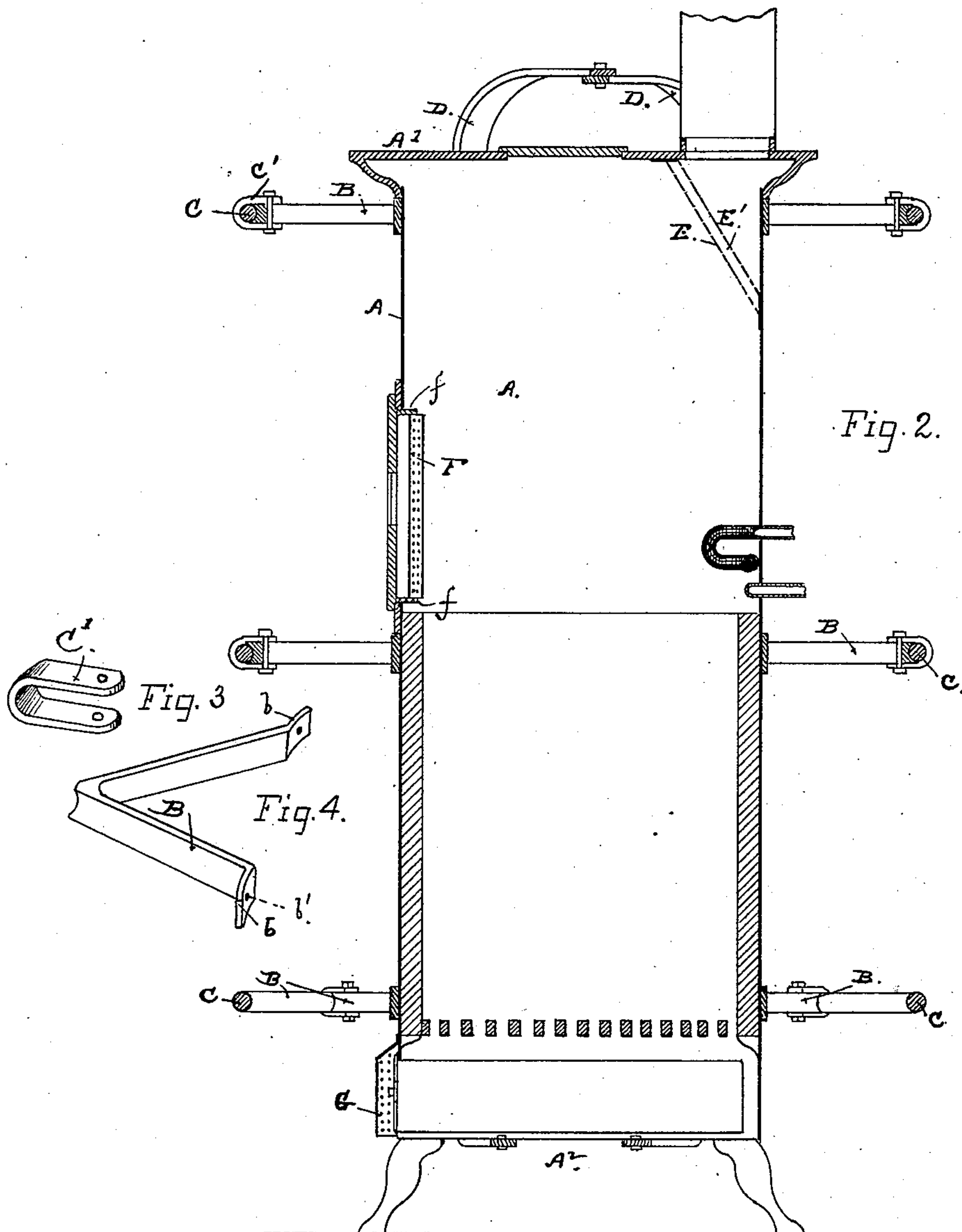


Fig. 3

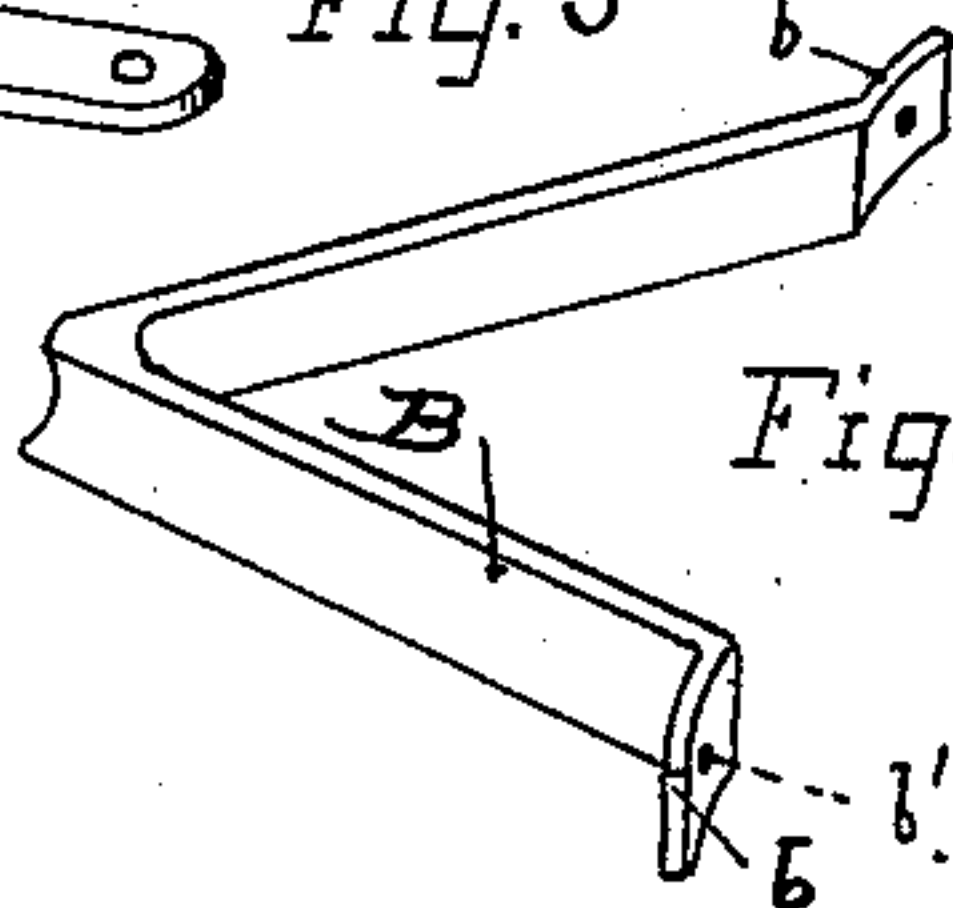


Fig. 4

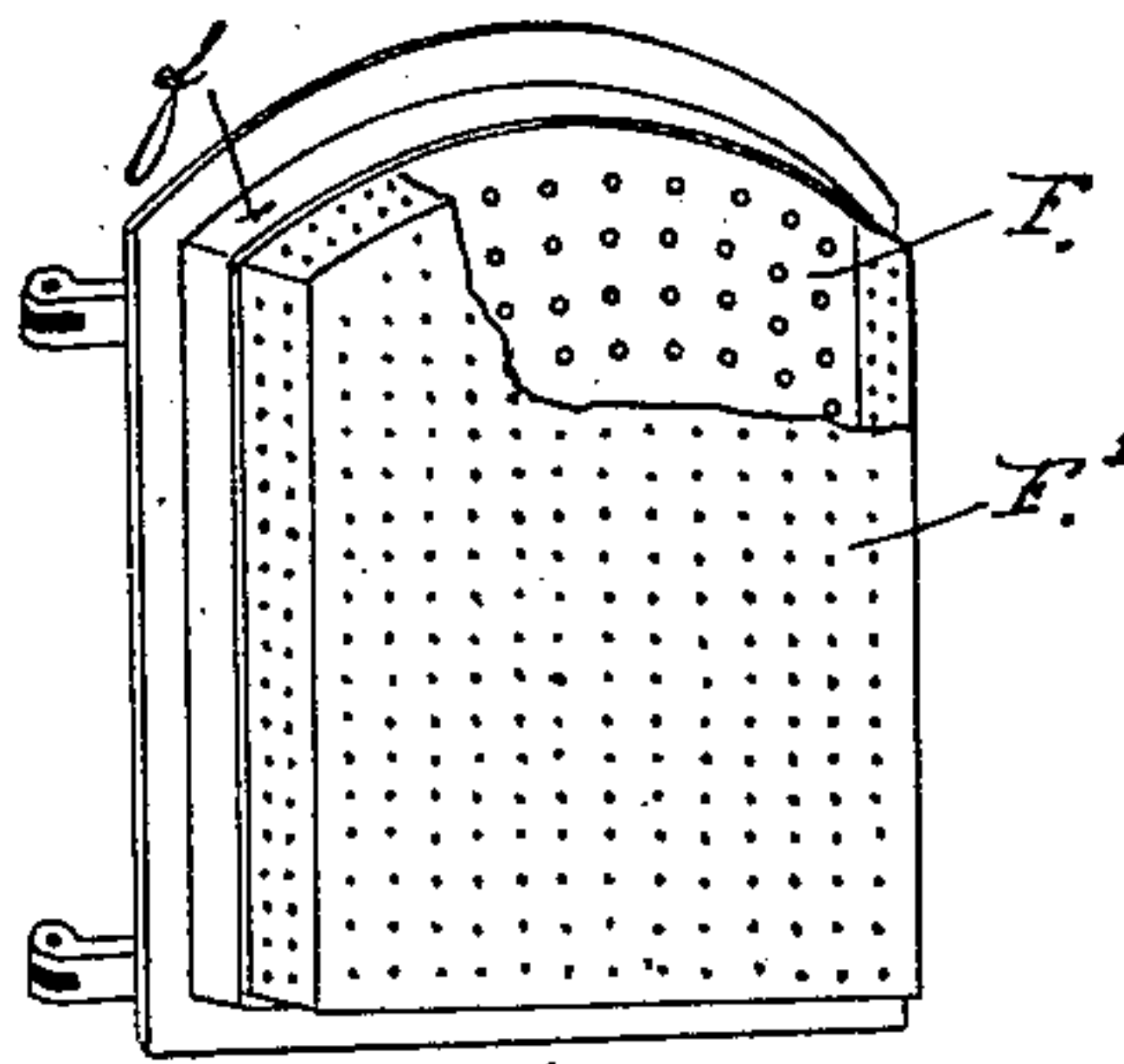


Fig. 5

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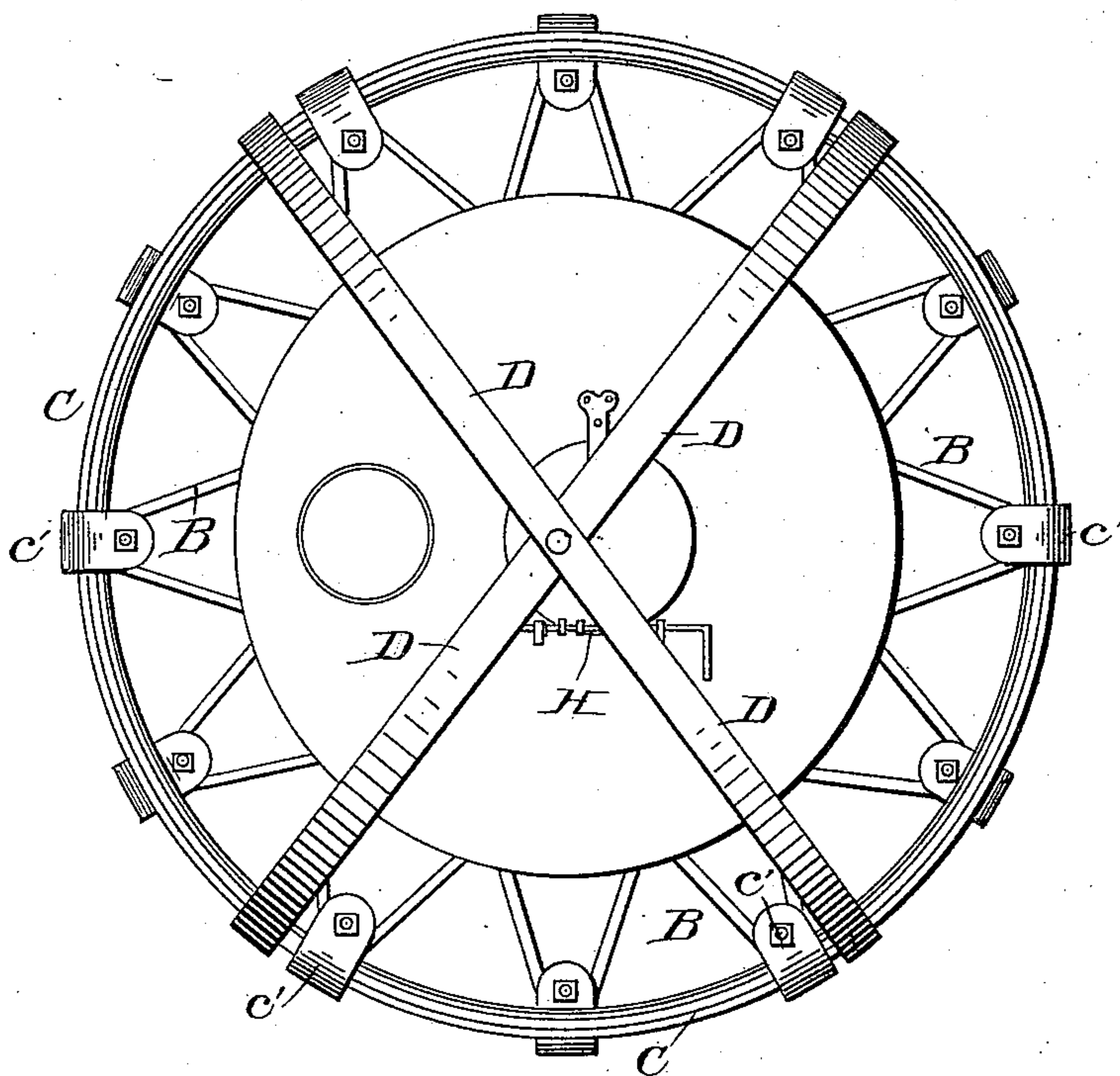
C. ROWELL.

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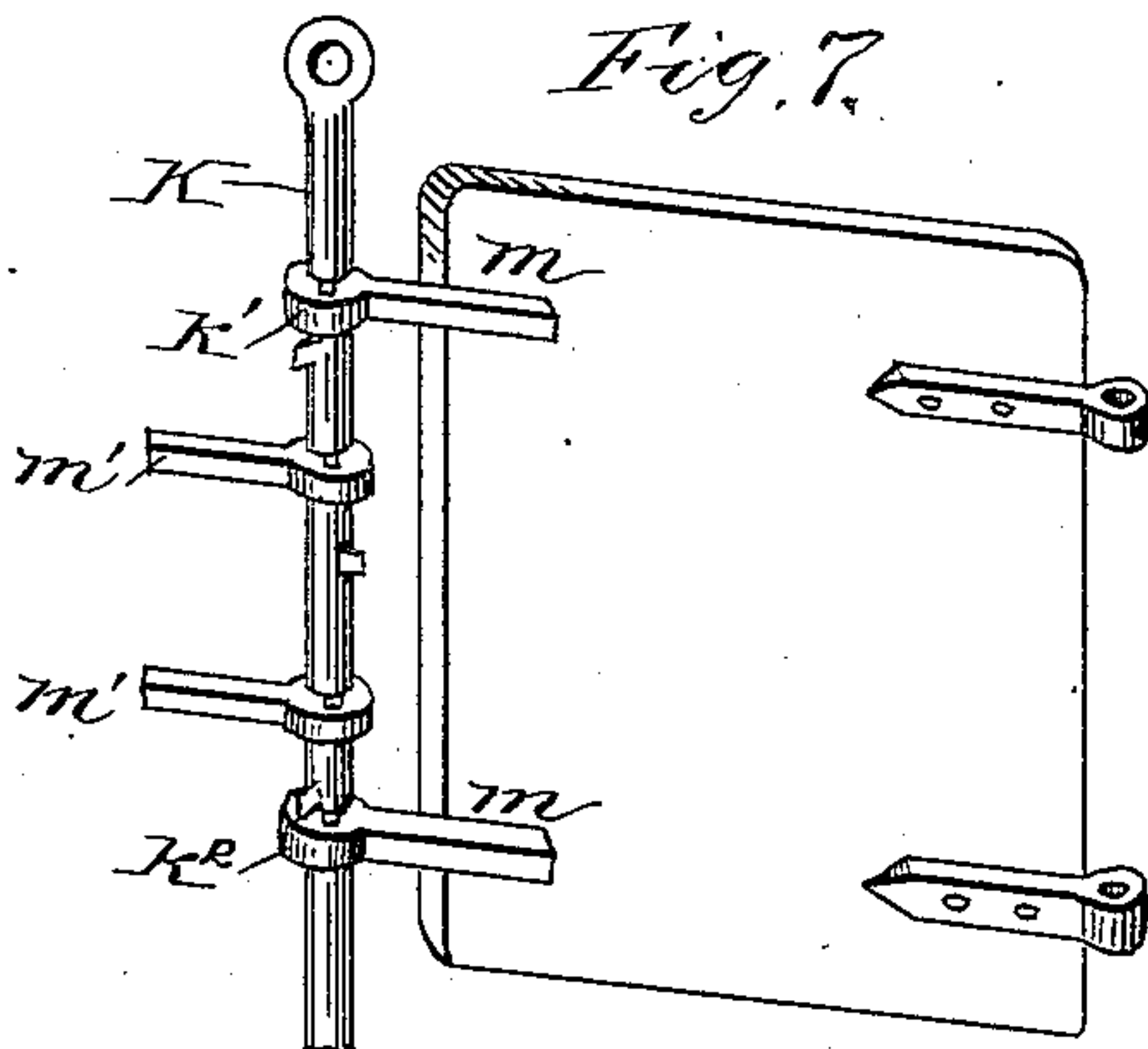
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*Fig. 6.*



*Fig. 7.*



Witnesses,

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*Paul D. Sullivan*

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# UNITED STATES PATENT OFFICE.

CHARLES ROWELL, OF SAN FRANCISCO, CALIFORNIA.

## SAFETY-STOVE FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 306,864, dated October 21, 1884.

Application filed October 29, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES ROWELL, a citizen of the United States, residing in the city and county of San Francisco, in the State of California, have made and invented certain new and useful Improvements in Safety-Stoves for Railway-Cars; and I do hereby declare that the following is a full, clear, and exact description of my said invention and the manner in which I proceed to construct, apply, use, and carry out the same, the accompanying drawings being referred to by figures and letters.

My invention has for its object to produce a safety-stove for railway-cars.

It consists in the construction of parts, as hereinafter described, and their application to and combination with a stove-body of any suitable form and structure, whereby the heated surfaces of the stove are kept from contact with surrounding bodies and surfaces in case of destruction of the car or the conditions resulting from collisions and other accidents to which railway-trains are now exposed, and whereby, also, the stove is made capable of withstanding the greatest possible crushing force and pressure to which it may be subjected.

In the drawings referred to, Figure 1 is a front elevation of a cylindrical stove constructed in accordance with my invention. Fig. 2 is a vertical section through the center of Fig. 1. Figs. 3 and 4 are details of the knees or angle-pieces and fastening-clips for the bands. Fig. 5 shows the application of the screen to the door or feed-opening. Fig. 6 is a plan view. Fig. 7 is an enlarged front elevation of a door with the fastening device applied.

My invention consists, essentially, in surrounding a stove-body with a skeleton-armor or protecting-frame composed of metal knees and encircling bands or hoops. The knees are secured to the stove-body at distances apart to project radially and perpendicularly from its surface, and the bands or hoops surround the stove-body both horizontally, by being clamped to the end of each knee, and also vertically, by being carried over the top and down the sides to the bottom, the whole form-

ing, when bound together, an open or skeleton guard, encircling the stove on all sides of the heating-surface. The openings in the stove-body—that is, the openings provided for the draft, the escape of smoke, and the admission of fuel—are provided with perforated screens. Those over the lower draft and ash-pit opening and at the fuel-inlet are hinged at one side, so as to be removable, as required; but the guard at the smoke-pipe aperture at the top is fixed more permanently, as it need not be removed except for cleaning purposes. A locking device, H, is applied to the hinged screens to prevent accidental opening.

The stove-body A is of cylindrical form, and of any suitable construction, although I prefer to use sheet metal for all parts, excepting, perhaps, the supports or the base upon which it stands. The knees B are simple angle-pieces of cast metal, with the ends turned outward to form lugs *b* for bolts or rivets *b'* to take through. They are set in a circle entirely around the stove-body at the top, at the bottom, and at intervals, and are securely fixed in place by these lugs and fastening-bolts, so that they project outwardly and perpendicularly from the cylindrical body. Each row or circle of outwardly-projecting angle-pieces is surrounded and inclosed by a band or hoop, C, and a fastening, composed of a metal clip, C', is employed to surround the band and clamp it firmly to each angle-piece at the apex. This band may be either flat or round. If the latter kind is used, the edge of the angle is made concave, to take the cylindrical rod. This construction is represented in Fig. 2 of the drawings. The use of a flat band would require a clip, C', of flat sides, and the edge of the angle would be left straight.

Beginning at the top of the stove-body, I fix a set of these projecting angle-pieces in a circle and connect them together by the surrounding-band C. Then, at intervals apart down the length of the stove-body, I place additional sets, and all with equal projection; and, finally, over and perpendicularly across these rows of encircling-bands, I fix metal bands or straps D, to extend over the top and down the sides of the body to the bottom, where they are carried under and fastened at



the ends to the stove-body. The number of the horizontal bands and the perpendicular straps or bands thus placed around a stove-body will be determined by the size of the stove. They should be set at such distance apart, however, as to prevent contact with the stove-surface of any bodies, objects, or surfaces that, being in proximity to the stove, would, in case of accident, be brought against the heated surface. These guards also should be set close enough to prevent contact with the stove-surface of the limbs and body of a person.

The openings at the top in the side and at the lower part of the stove are covered with perforated screens EFG. To insure complete protection against the escape of the burning fuel from these openings in case of accident, as when the stove may be overturned, I employ double screens, the first or inside one somewhat coarser than the outer one, and the two set apart to leave a space between them. The opening for the stove-pipe is through the top of the stove; and the guards E E' are set diagonally across the body A just below the outlet; but where the stove-pipe may lead from the side the guards will be set vertically; or they may be set with an inclination from the stove-top downward to the back, and be fixed to the stove-body at a point below the outlet. The door is provided with an inner projecting flange, *f*, and the screens F F' are permanently fixed within it, as shown in Fig. 5. This guard is required only where top-draft openings are provided in the door.

In connection with the door, as well as with other hinged or swinging covers and guards, I employ a fastening device of simple and effective character and action. This fastening consists of a sliding rod *k*, working through loops or staples *m m'*, on the front edge of the door and on the stove-body set alternately, and arranged to come into line when the door is closed. Two stops, *k' k''*, projecting from the rod at right angles, are caused to pass through and take under the staples at different points by simply turning the rod and pushing it down. A contrary movement en-

ables it to be withdrawn from all the staples, and the door released.

The guard G, over the damper and opening in the ash-pit A<sup>2</sup>, is of box shape, or with a square rim, to fit against the side of the stove-body around the opening, so as to carry the screen away from the opening and impede the draft no more than is necessary. This screen is hinged at one side, *t*, of the stove-body, and the fastening is applied to the opposite side.

Now, as thus constructed and applied, my improved frame or armor operates to preserve the stove-body against all possible injury and damage by reason of accidents arising from collisions, precipitation down embankments, and other dangers to which railway-trains are exposed. The body of the stove cannot be broken or crushed to any extent sufficient to throw out the burning fuel, and the regular openings in the body are effectually guarded. Contact of the surrounding bodies and surfaces with the stove-surface is prevented also at such times by the surrounding armor.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination, with a stove-body, of the horizontal encircling guards composed of the angle-pieces B, bands C, and fastenings C', and the longitudinal bands D, secured outside of the bands C, substantially as and for the purpose set forth.

2. The combination, with a stove-body, of the horizontal encircling-guards composed of the angle-pieces B, bands C, and fastenings C', substantially as hereinbefore described.

3. The combination, with the doors or covers to the stove-openings, of the locking-rod *k*, having the lugs *k' k''*, lugs *m* on the door, perforated as described, and lugs *m'* on the stove, similarly perforated, substantially as and for the purpose set forth.

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Witnesses:

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