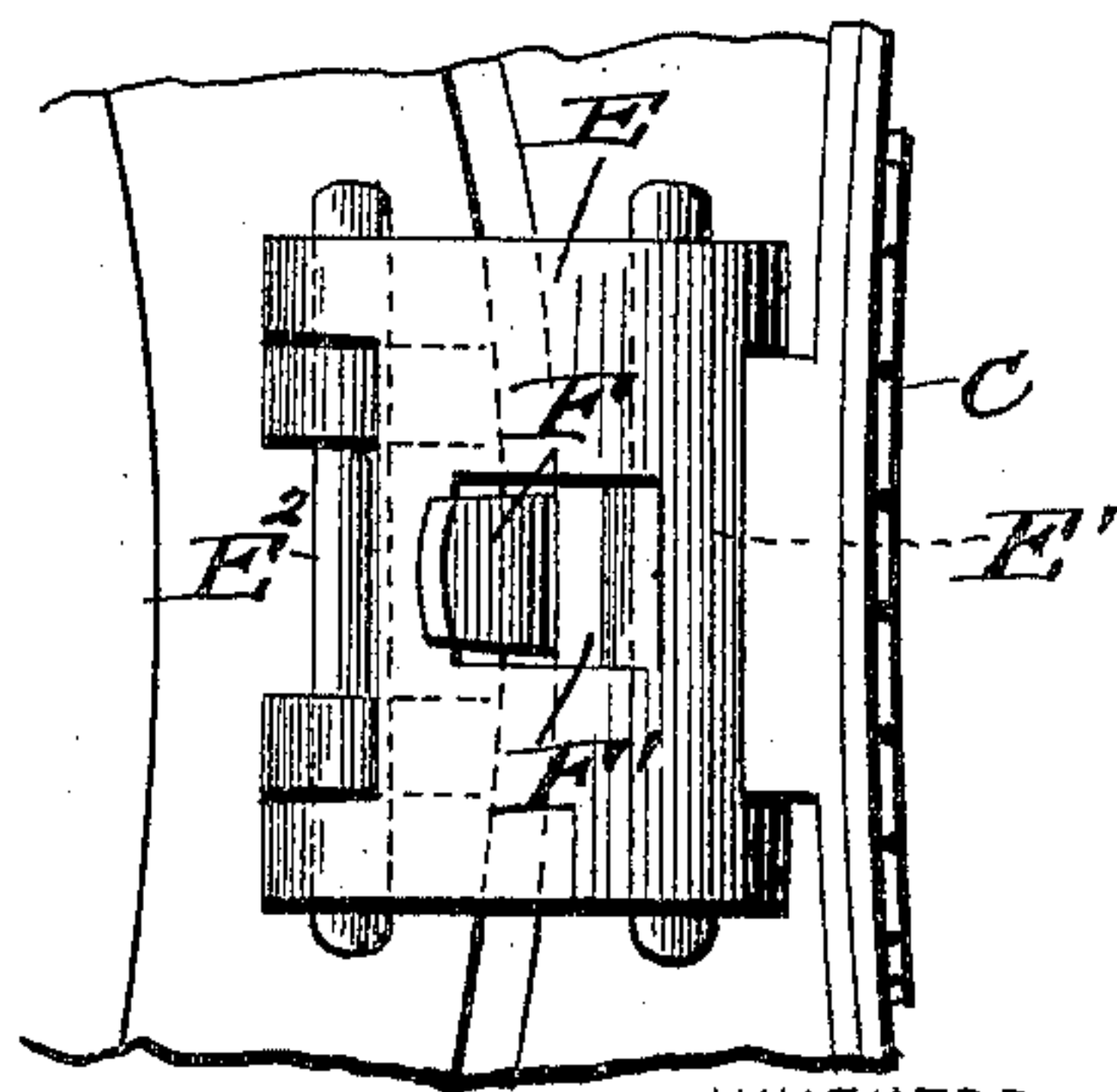
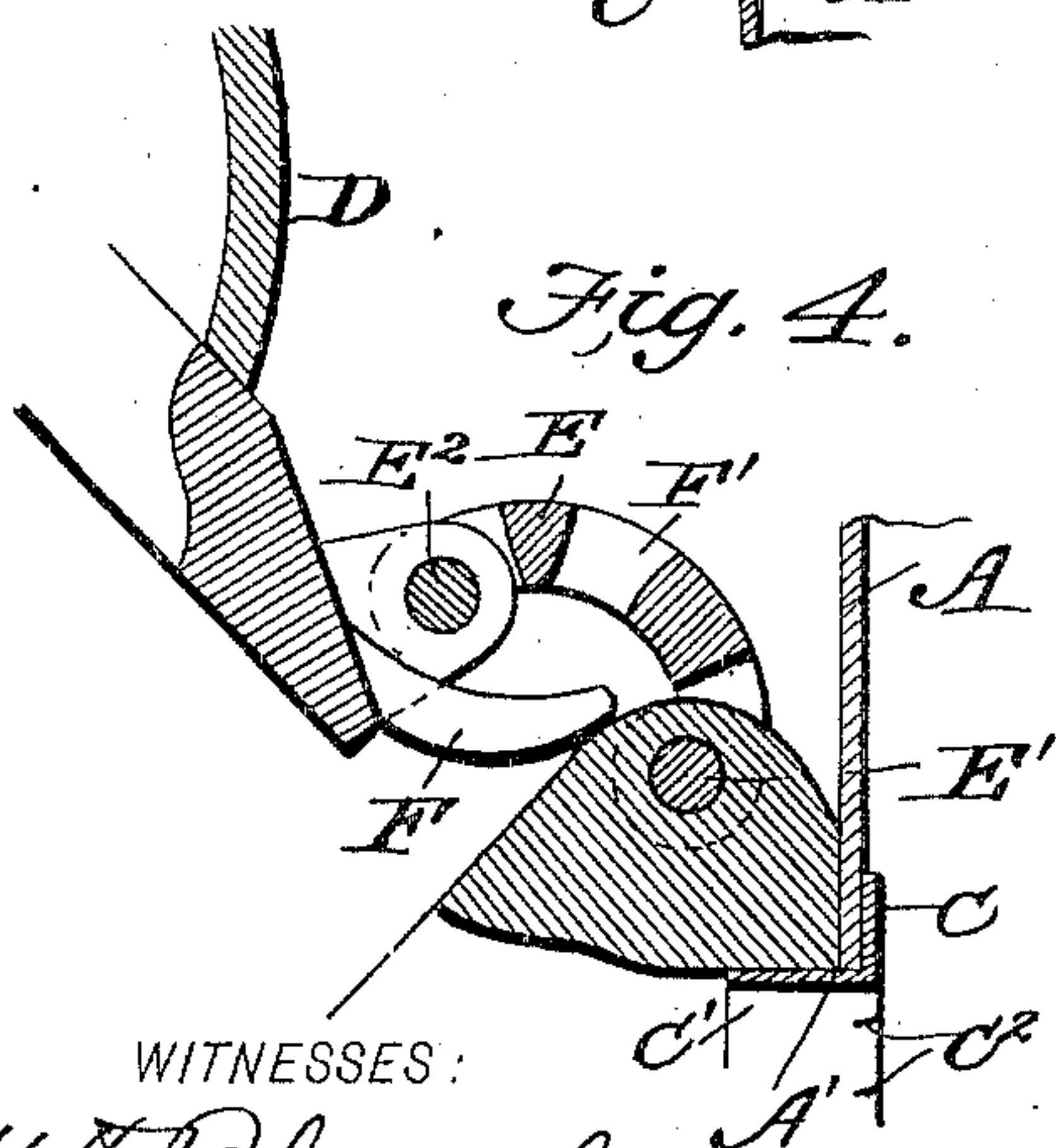
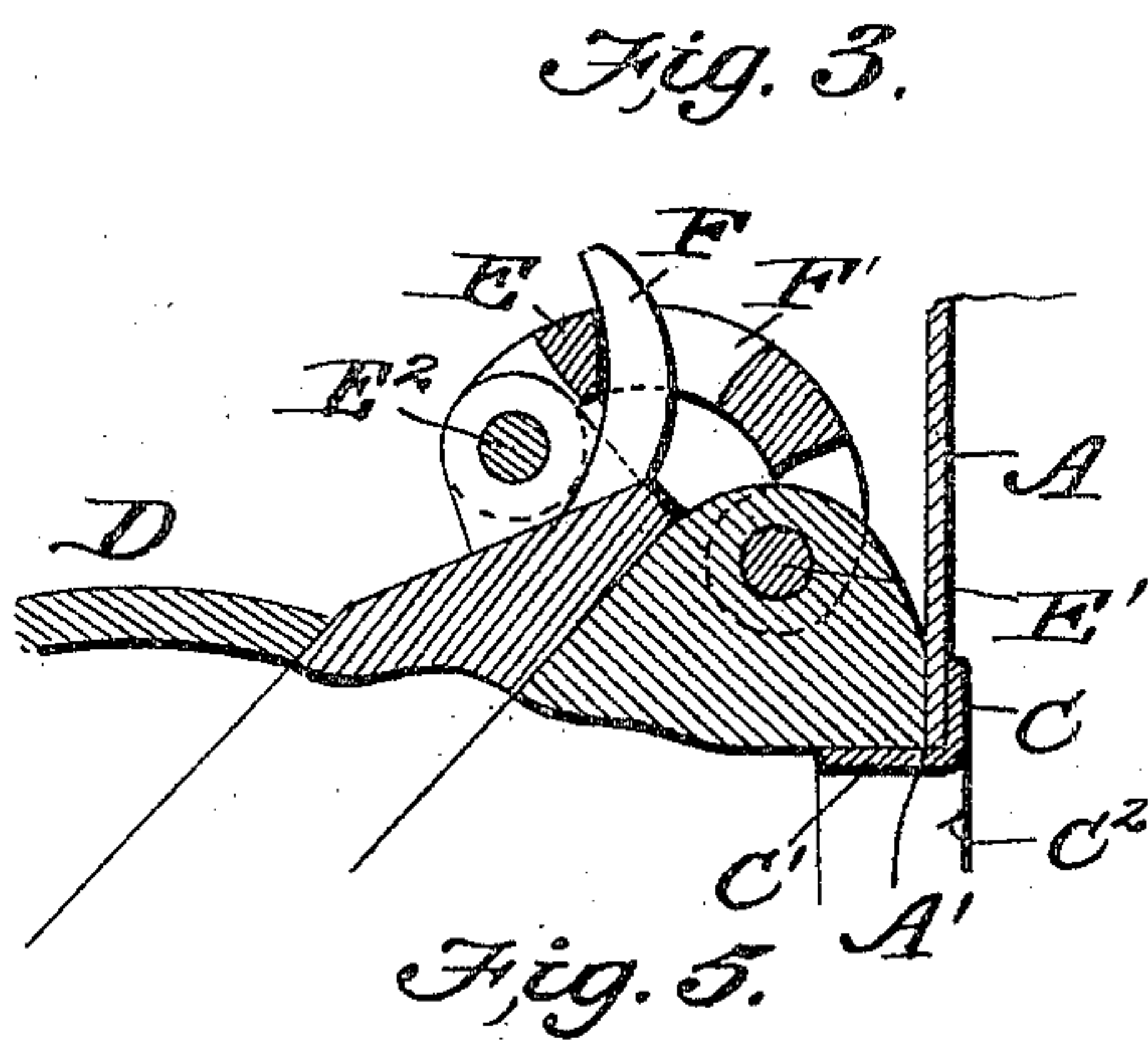
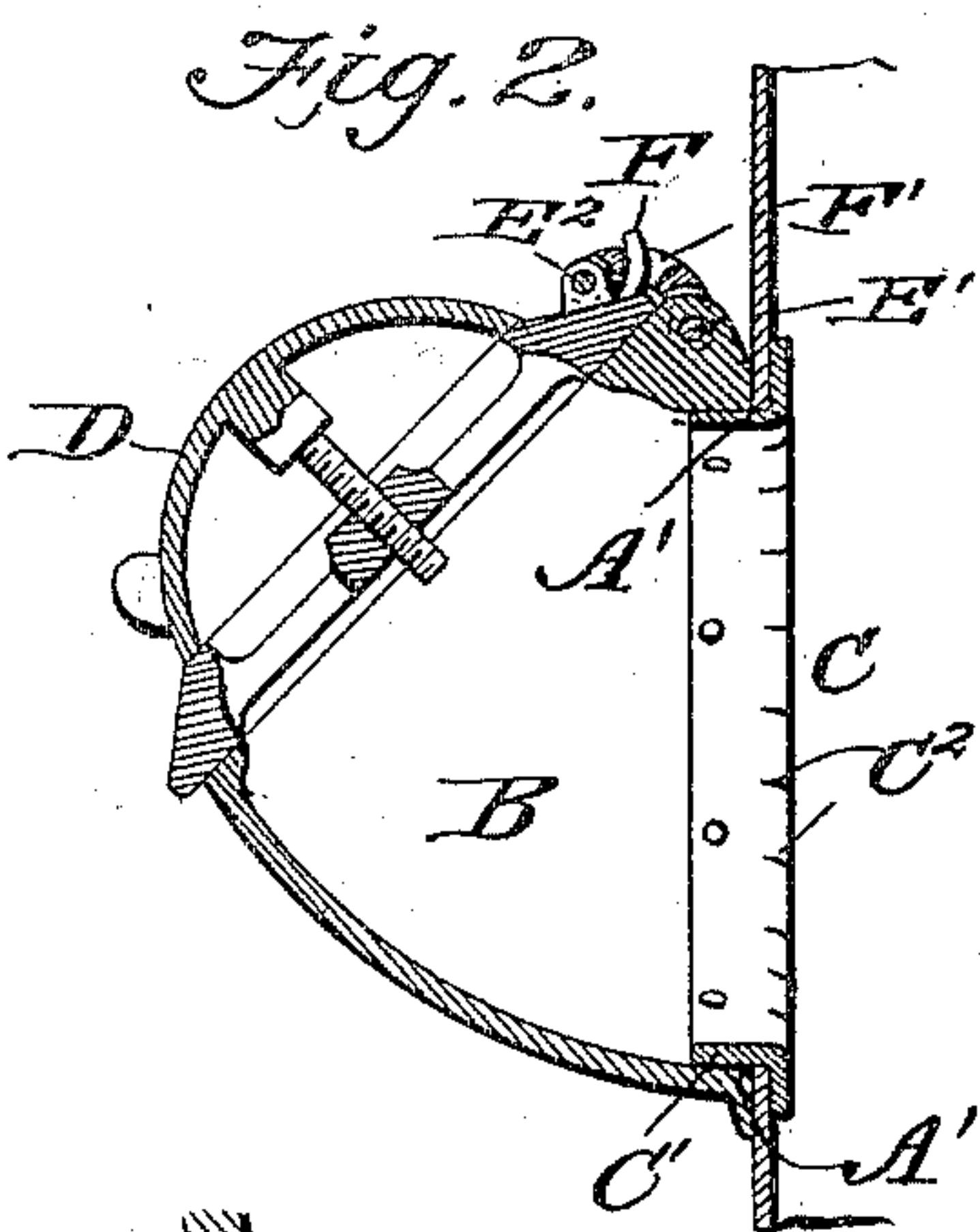
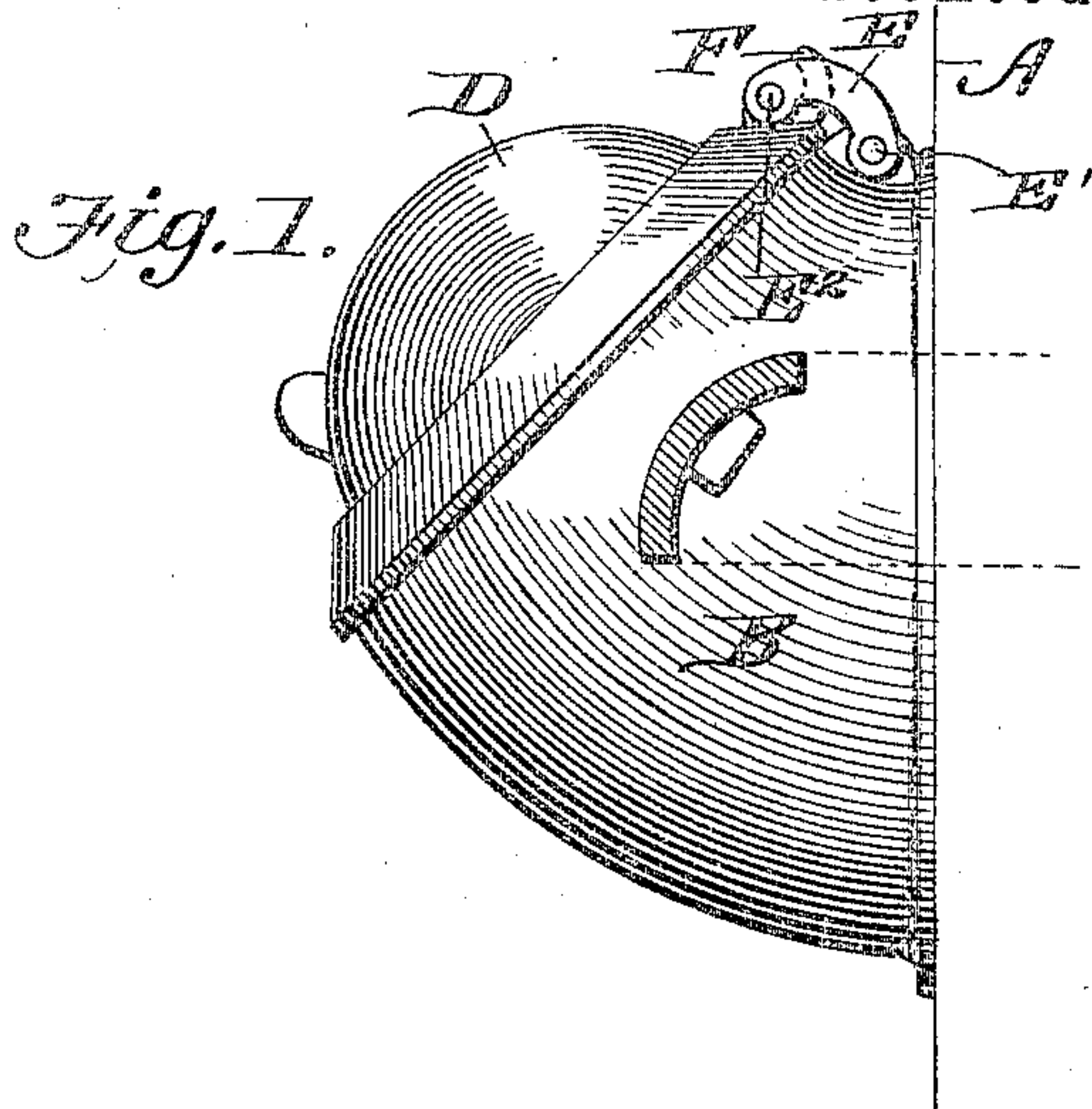


(No Model.)

E. C. COLE.
STOVE.

No. 604,655.

Patented May 24, 1898.



WITNESSES:

M. B. Bloudek
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INVENTOR

Ernest C. Cole.

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

ERNEST CHAPIN COLE, OF COUNCIL BLUFFS, IOWA.

STOVE.

SPECIFICATION forming part of Letters Patent No. 604,655, dated May 24, 1898.

Application filed November 9, 1897. Serial No. 657,946. (No model.)

To all whom it may concern:

Be it known that I, ERNEST CHAPIN COLE, residing at Council Bluffs, in the county of Pottawattamie, in the State of Iowa, have invented a new and useful Improvement in Stoves, of which the following is a specification.

My invention is an improvement in stoves, and relates particularly to the elbow and ash-pit door; and it consists in certain novel constructions and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a side view, and Fig. 2 is a sectional view, of a part of a stove provided with my improvements. Fig. 3 is a detail sectional view, the door being closed. Fig. 4 is a similar view, the door being open; and Fig. 5 is a top plan view of the door-hinge.

By my invention I seek to provide an improvement in doors and door-jambs for heating-stoves by which I secure a tighter connection of the elbow or jamb with the body of the stove. The sheet-metal collar is forced into the cast-iron elbow and is secured within the latter at a point of contact remote from the end of such elbow which abuts the stove. In a full-size stove this point of contact will probably be an inch or more distant from the stove-body and thus be away from the point where the degree of heat is sufficient to cause appreciable difference in the expansion of the two metals, thus giving a contact between the sheet-metal collar and the cast-iron elbow which will not have or be subjected to the variations in expansion and contraction to cause the leakage which occurs where joints between such materials is effected by rivets or bolts in a location subjected to the direct action of heat. By the construction shown and presently described I have a contact between the sheet-metal collar and the sheet-metal stove-body which is tight, because the expansion will be equal on both parts, and I also have a connection between the sheet-metal collar and the cast-metal elbow, but arrange this latter connection so it will not be affected by the variations in contraction and expansion, and am thus able to secure a connection between a cast-iron elbow and a sheet-

metal stove-body, and avoid the evils from expansion and contraction experienced where the door-jambs are attached in the ordinary way.

The invention also seeks to obviate the difficulties resulting from the projection of hinge-studs above the surface of either the door or jamb and permits the grinding of the door and jamb to an air-tight fit on the surface of a grinding-wheel, whereas in the old way the projecting stud on the door or jamb, or on both, necessitated the grinding of the surfaces on the edge of a wheel and rendered it practically impossible to secure a perfect fit, while the improved constructions of door and jamb can be oscillated on a flat wheel and be ground accurately to a tight fit. Furthermore, by reason of the double-hinge joint the two surfaces can adjust themselves to an air-tight fit in spite of great variations in grinding off the surfaces or in drilling sockets for hinge-pins, which variations constantly occur in such work. It should be understood that by my construction I not only provide for grinding the surfaces perfectly true, but also connect them by the double-hinge construction in such manner that the surfaces when so ground may automatically adjust to coincide to secure the tight fit, the particular construction of the double hinge which permits such adjustment coöperating with the special construction and arrangement which permits the grinding, to the end that the surfaces may be properly ground on both parts and such parts may be connected in such manner as to permit the proper adjustment together or coincidence of such surfaces when brought together, the hinge construction being such that the two surfaces move freely to an air-tight fit, whereas in the ordinary hinge construction the ordinary single-hinge joint holds the door-surface rigid at the hinge side and makes it impossible for the surfaces to come together if by reason of too much grinding or crooked hinge-pins or by reason of drilling the holes slightly out of line the meeting surfaces do not coincide.

The sheet-metal stove-body A may be of any desired design. The door frame or jamb B is in the nature of an elbow and may be cast in any suitable design. At its inner end

the cast door-frame is provided with a sheet-metal collar C, secured at one end C' to the cast door-frame and having its other end slitted at C², such end being inserted through an opening A' in the stove-body and the slitted portion C² being hammered out within the stove-body A to secure the door-frame rigidly thereto. While the slitting at C² is preferred, it may be omitted and the sheet-metal connection C be flanged out without being slitted. This connection is important, as it allows the greater lateral expansion and contraction of the casting without loosening the joint, which is held tightly against the casting at all points by the steel collar, whereas the usual method of attaching the door-jamb with bolts allows the body to warp away from the casting and the relative difference in expansion and contraction causes the two parts to loosen.

At its outer end the door-frame is ground or otherwise suitably formed to cooperate with a ground or similar surface on the door D, so when such parts are in contact a tight fit will be attained. Ordinarily in stoves the tight fitting of the door with its frame is interfered with by various things, such as an imperfect surfacing of the door and its seat and lack of trueness of the pivot-studs or other parts of the hinge connection. This I avoid by the improved form of joint which permits a perfect grinding of the surfaces and a movement of same properly into contact. This joint consists, as shown, of a swinging connection E, pivoted at E' at one end to the door-frame and at its other end at E² to the door D, so the door may be readily swung upward to open position, and so when dropped to closed position it will conform closely to its seat on the door-frame and will effect a tight joint therewith. It will be noticed that the joints E and E² are set back from the ground surfaces of the door and frame so the lugs employed in effecting such joints will not protrude beyond said surfaces and interfere with the grinding thereof. Together with this swinging connection E, I provide the door with a projecting lug F, which may be thrown to position to engage the door-frame when the door is open and hold the door in such position until it is desired to close the same, when by a slight upward movement of the door the lug F will move out of engagement with the door-frame and the door may be closed. In the construction shown and as preferred the lug F projects and plays through an opening F', ar-

ranged between the ends of the swinging connection E, as shown in Fig. 2.

The door D affords access to the ash-pit and also permits the shaking of the stove whenever desired, being held open by its lug F during such operation.

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

1. In a stove substantially as shown and described the combination of the elbow-frame or jamb, the swinging connection pivoted at one end thereto, and the door pivoted to the other end of said connection and having a latching projection or lug arranged to abut the framing and hold the door open substantially as shown and described.

2. In a stove substantially as shown and described the combination of the frame or jamb, the door having a projecting lug arranged to abut said frame or jamb, and the swinging connection pivoted at one end to the elbow or frame and at its other end to the door and provided between its ends with an opening through which the lug on the door plays substantially as shown and described.

3. An improvement in stoves comprising the door, and the door-jamb having coincident surfaces and provided with hinge lugs or projections arranged wholly out of the line of coincidence between said door and its jamb and a double-hinge connection between said lugs or projections substantially as described, whereby the lugs or projections will not interfere with the grinding of the coincident surfaces on a flat wheel and the surfaces when so ground may adjust to a true fit substantially as set forth.

4. The herein-described improvement in stoves consisting of the sheet-metal body having an opening, the cast-metal door-jamb, and the sheet-metal collar extending at its outer end within the cast-metal door-jamb and secured thereto at a point away from the extreme heat, the inner end of the sheet-metal collar being secured to the sheet-metal body whereby the sheet-metal collar is connected at one end directly with the sheet-metal body and its connection at its other end with the cast-metal door-jamb may be located away from the extreme heat substantially as set forth.

ERNEST CHAPIN COLE.

Witnesses:

ARTHUR THROOP COLE,
LYDIA JOHANNAH THIENIE.