

(No Model.)

G. C. BURCH.
WHIFFLETREE PLATE.

No. 354,851.

Patented Dec. 21, 1886.

FIG. 1.

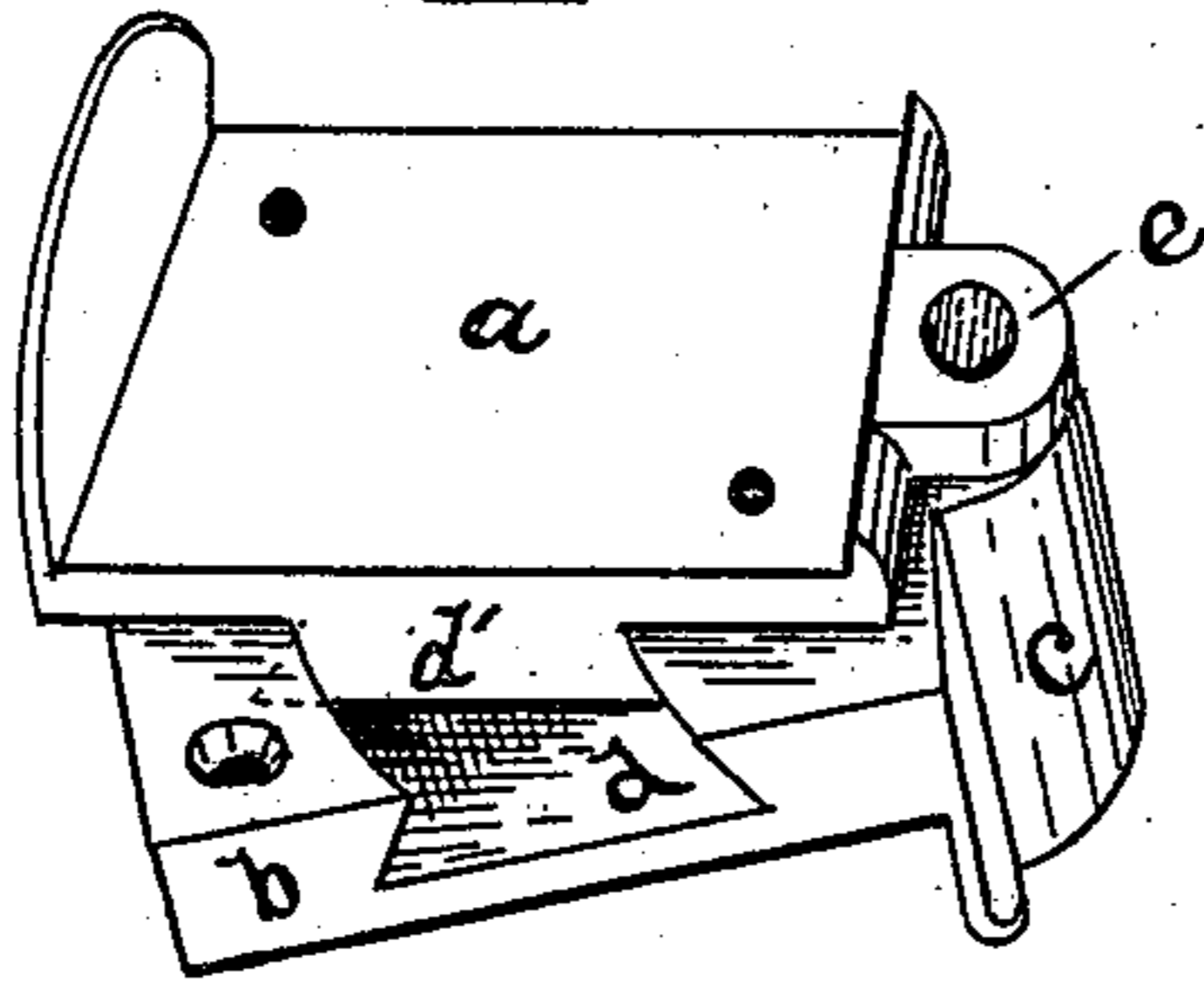


FIG. 3.

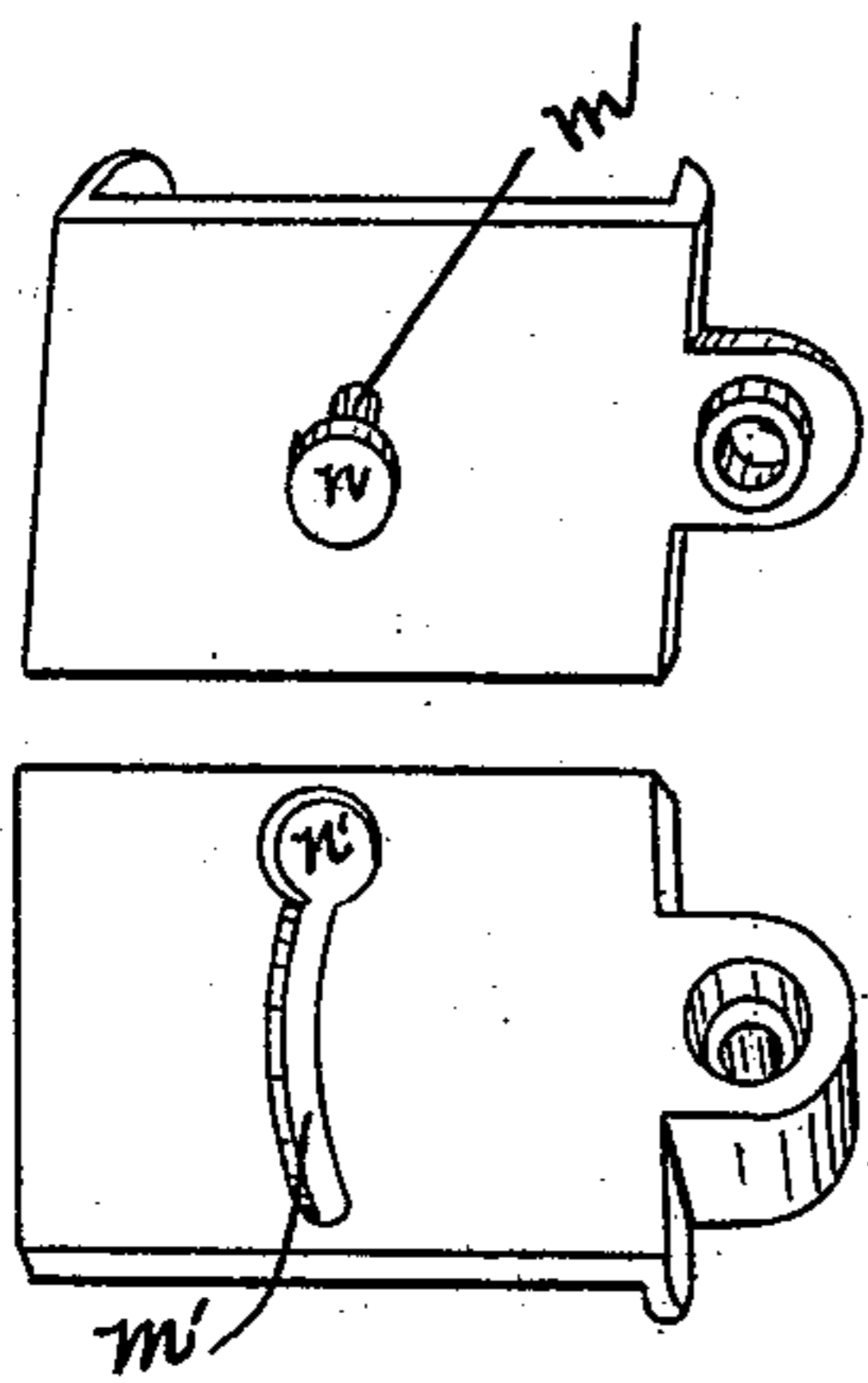


FIG. 4.

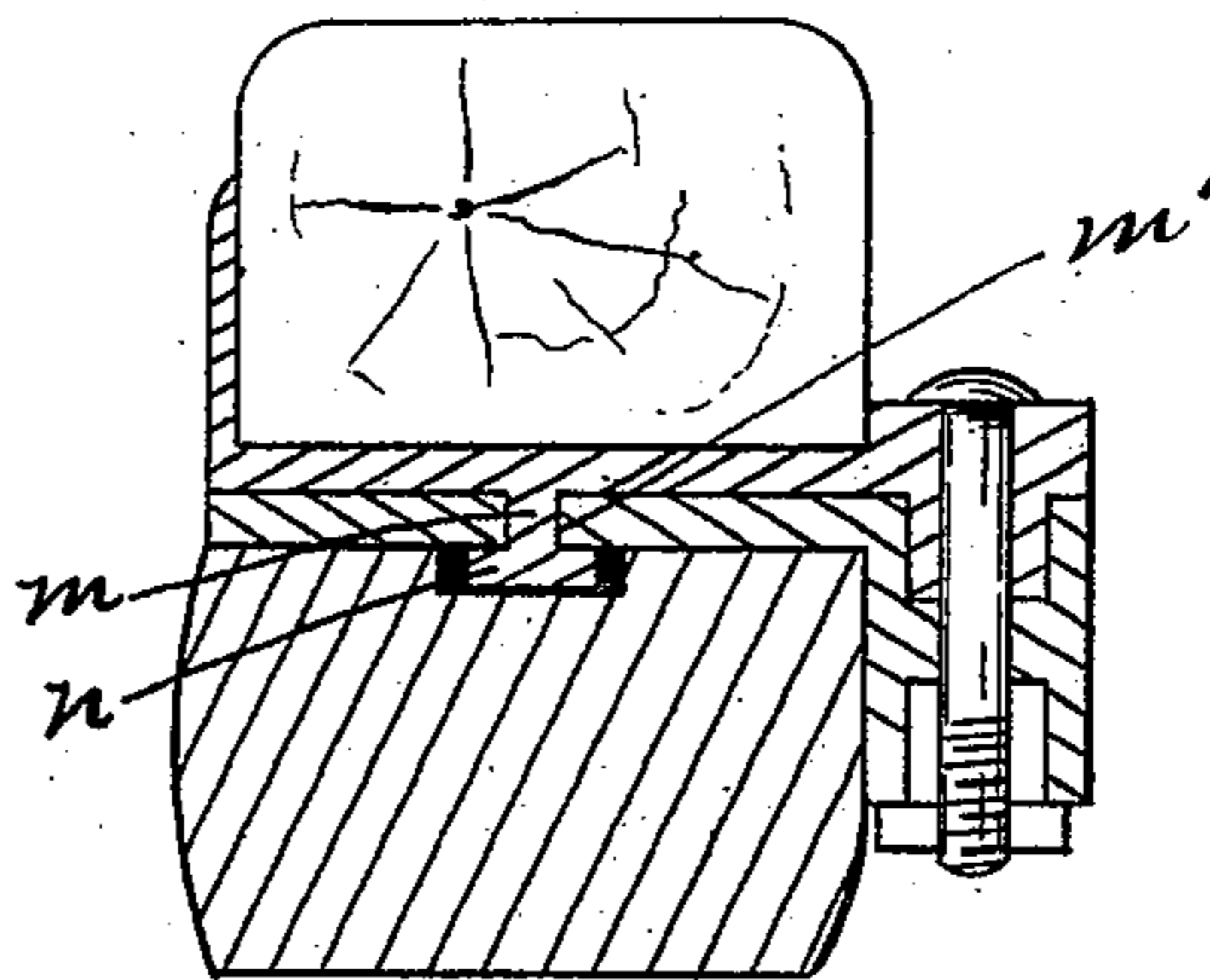
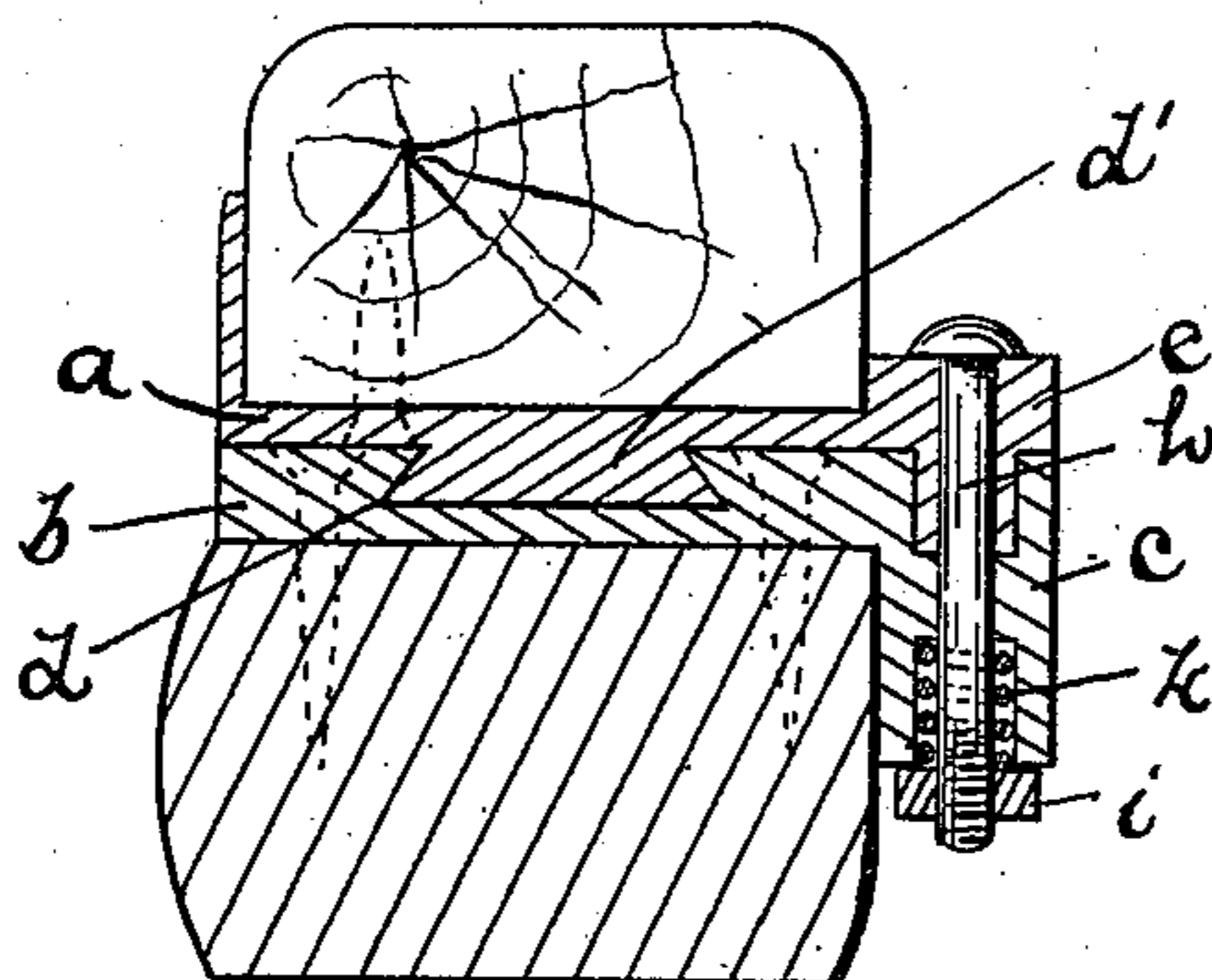


FIG. 2.



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UNITED STATES PATENT OFFICE.

GEORGE C. BURCH, OF GROTON, CONNECTICUT, ASSIGNOR OF ONE-HALF TO
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WHIFFLETREE-PLATE.

SPECIFICATION forming part of Letters Patent No. 354,851, dated December 21, 1886.

Application filed April 22, 1886. Serial No. 199,734. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. BURCH, a citizen of the United States, residing in the town of Groton, county of New London, and State of Connecticut, have invented certain new and useful Improvements in Whiffletree-Plates, which improvements are fully set forth and described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my preferred form of plate detached from the whiffletree and with its locking-bolt removed. Fig. 2 is a vertical sectional view through the center of said plate, showing it properly secured to the cross-bar and whiffletree. Fig. 3 illustrates a modification of my invention, the upper and lower sections being detached and shown in perspective, and Fig. 4 is a vertical cross-section of the same parts assembled.

My invention relates to that class of devices provided to secure a whiffletree to the bar which connects the so-called "shafts" or thills of a vehicle; and my immediate object is to provide at a moderate cost a coupling or connecting-plate which shall be exceedingly strong in its parts, easily applied, noiseless in action, which will wear longer than similar plates now in common use, and in which there will be no inclination on the part of the whiffletree to roll forward and thus cramp on the pivot-bolt, as referred to more fully hereinafter.

My improvements consist, first, of a means for preventing the separation or "springing apart" of the plates when in use, and, second, of a means for preventing any tendency to rattle when the parts become worn.

Referring to Figs. 1 and 2 of the drawings, the letter *a* represents the upper or whiffletree plate, and *b* the lower or cross-bar plate. Plate *b* is formed with a lateral projection, *c*, which is drilled throughout its entire length, and is then counterbored from each end, as shown in Fig. 2. The upper face of said plate is formed with an undercut or dovetail groove, *d*, shaped as a segment of a circle, whose center is also the center of the hole in the portion *c*, above described. Plate *a* has a centrally-bored lateral projection, *e*, whose lower end is reduced in size to fit the counterbored projection *c*, and

has also a segmental dovetail rib, *d'*, adapted to engage groove *d*.

It will now be understood that when the lateral projections *c e* are assembled the segmental rib *d'* may be turned into groove *d*, thus securely interlocking the two parts, and so long as said parts remain in approximately the position shown in Fig. 1 they cannot be separated. Having thus united the two principal sections of my improved plate, I secure them together by passing a bolt, *h*, through the projections *c e* and securing it in position by a nut, *i*.

To prevent all tendency to rattle I place in the counterbored lower end of projection *c* a stiff spiral spring, *k*, which is compressed by the act of screwing home the nut *i*, and acts to hold the two sections of my plate in close engagement with each other, even if said sections are considerably worn. I find that a packing of rubber works fairly well in place of spring *k*; but inasmuch as it loses its elasticity after a time I prefer a spring, as shown.

As the pivotal point of my plate is located in the rear of the whiffletree, the act of drawing the vehicle does not tend to roll the top of said whiffletree forward, as is the case when a pivotal bolt passing downward through the center of the whiffletree and cross-bar is used. In a whiffletree so secured the bolt wears rapidly on its rear upper side, and must be often replaced by a new one.

In the modification of my invention illustrated in Figs. 3 and 4 the segmental rib *d'* and corresponding groove, *d*, are dispensed with. In place of said rib, I have secured fixedly in said upper plate (or formed as an integral part thereof) a stud, *m*, having a head of considerable size, (see *n*,) and in the companion plate have provided a segmental slot, *m'*, whose width is about equal to the diameter of stud *m*. One end of said segmental slot is enlarged to such a size that head *n* may easily pass through it. (See *n'*.)

To assemble the plates as last described, the head *n* is passed downward through opening *n'*, and at the same time the shouldered lateral projection is entered in the corresponding counterbored projection of the companion plate, these projections being formed precisely

as in my preferred form first described. The upper plate may now be swung around into line with the lower plate, which movement interlocks the two plates, as will be understood by referring to Fig. 4. When applied to a vehicle and in actual use, the movement of the whiffletree is not sufficient to release the head *n*, yet said whiffletree may swing freely on its pivotal bolt *h* a distance sufficient to meet the movements of the horse.

The last-described form, having a headed stud, is more cheaply produced and fitted, but does not provide so great a bearing-surface as that with the segmental dovetail rib *d'*, yet for some purposes (as in very light vehicles) is practicable.

The plates *a b* are secured, respectively, to the whiffletree and cross-bar by screws whose heads are concealed between said plates.

Having thus described my invention, I claim—

1. A whiffletree-plate formed of two companion sections, each provided with a lateral

projection, as described, the lower section being counterbored, as described, and the upper sections being formed with a boss adapted to enter said counterbored space, the bearing-surfaces of the two sections being constructed, respectively, with a segmental dovetail groove and a corresponding segmental flange adapted to engage said groove, all being combined with and secured by a suitable bolt, as and for the purpose specified.

2. In combination with a whiffletree-plate formed of two companion sections, each provided with lateral pivotal projections bored and counterbored, as described, a spring located within one of said projections, as described, a bolt adapted to pass through said projections and spring, and a nut for securing the several parts named together, all being substantially as herein described.

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