

(No Model.)

2 Sheets—Sheet 1.

W. F. BRAUN.
CAR COUPLING.

No. 377,289.

Patented Jan. 31, 1888.

Fig. 3.

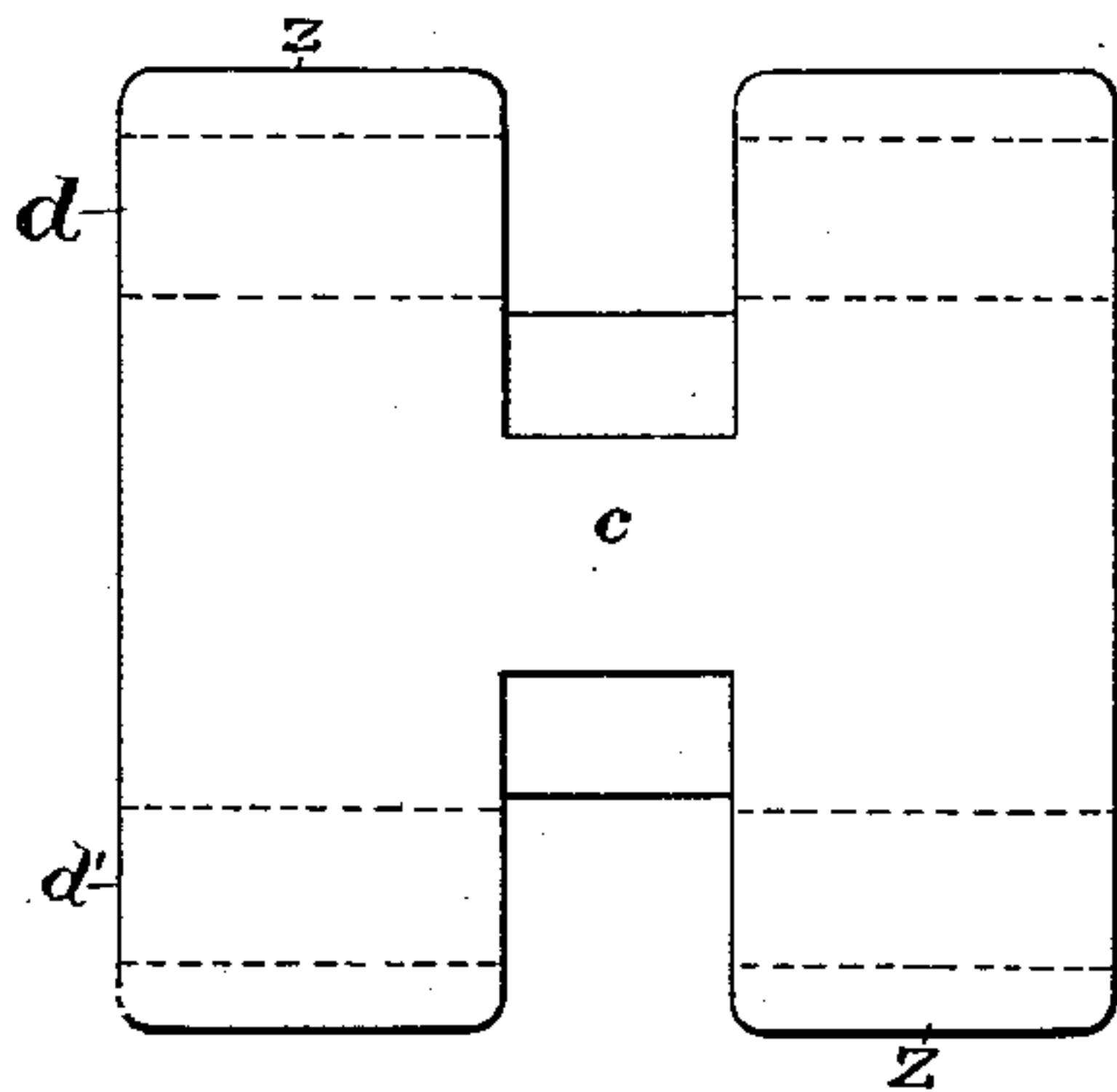


Fig. 1.

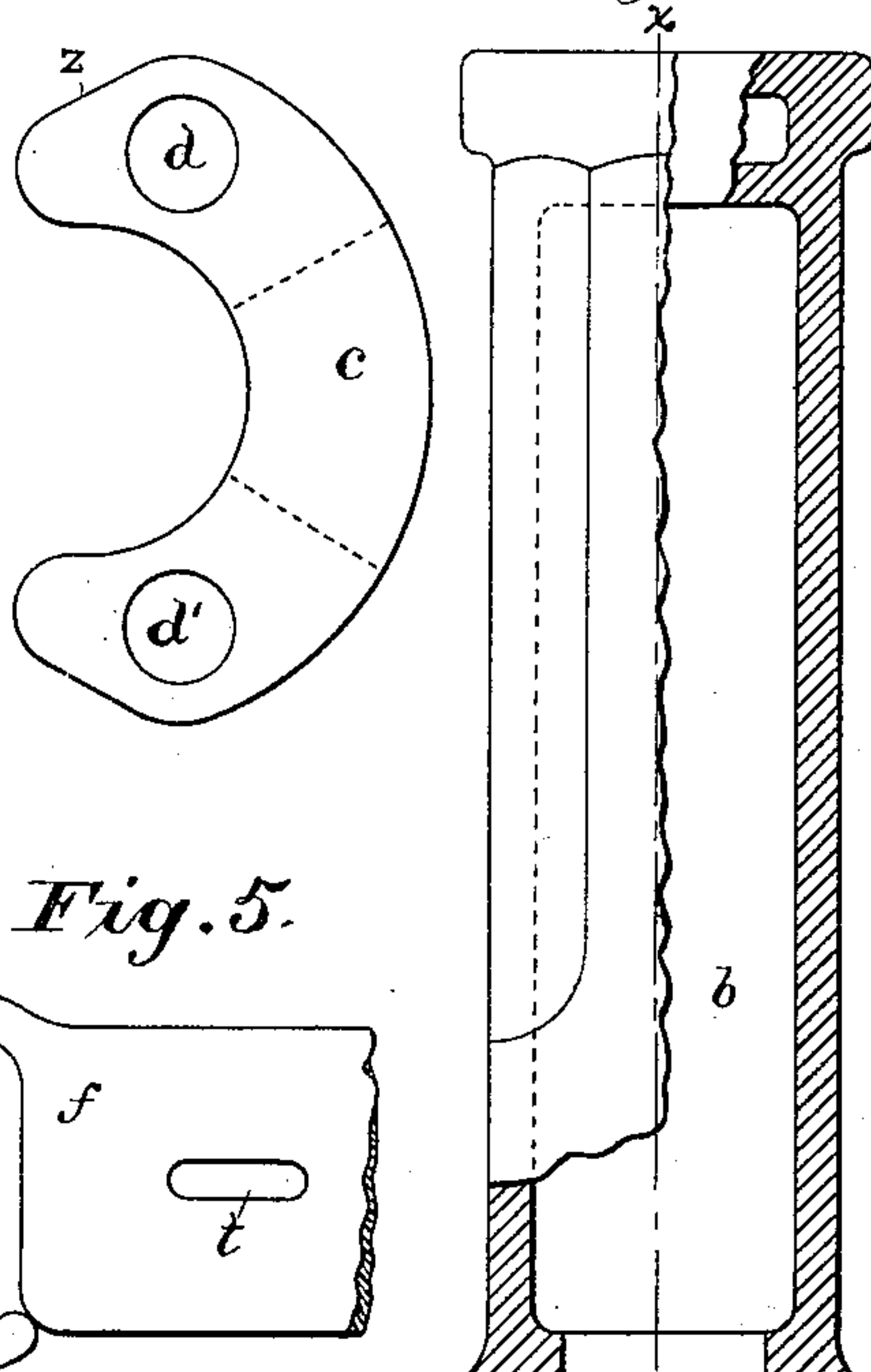


Fig. 4.

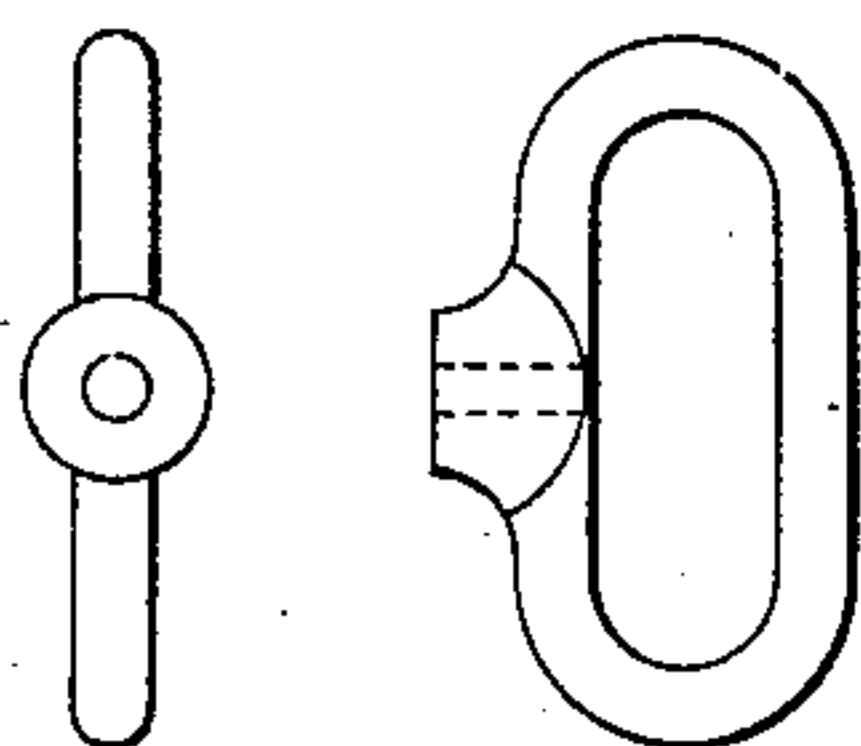


Fig. 5.

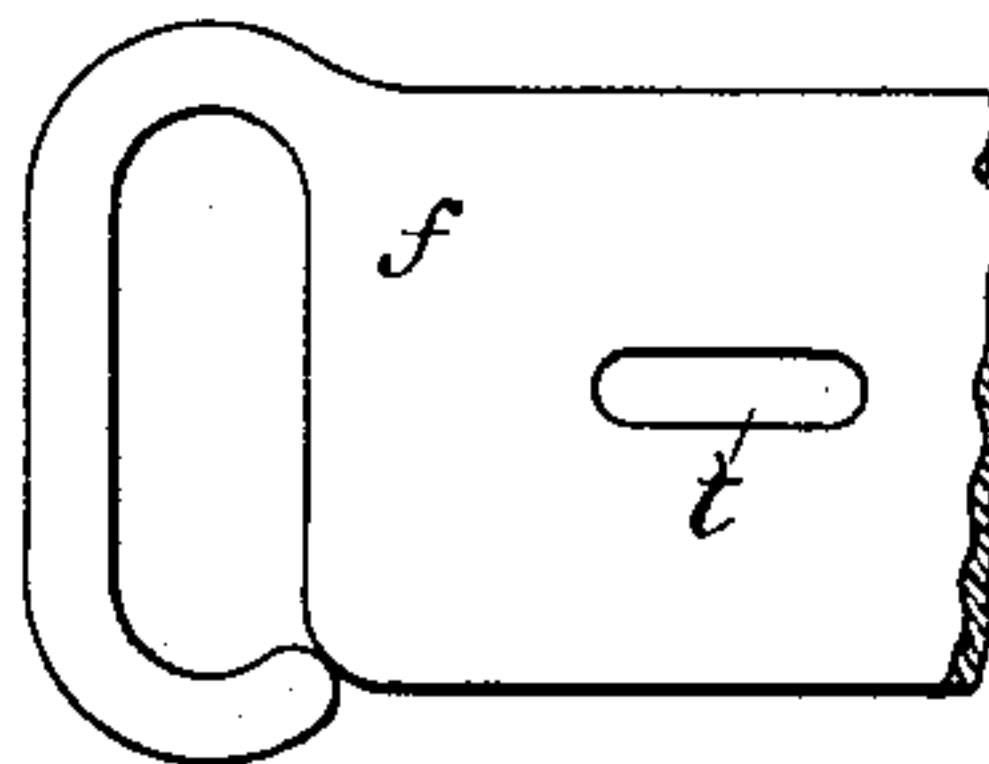
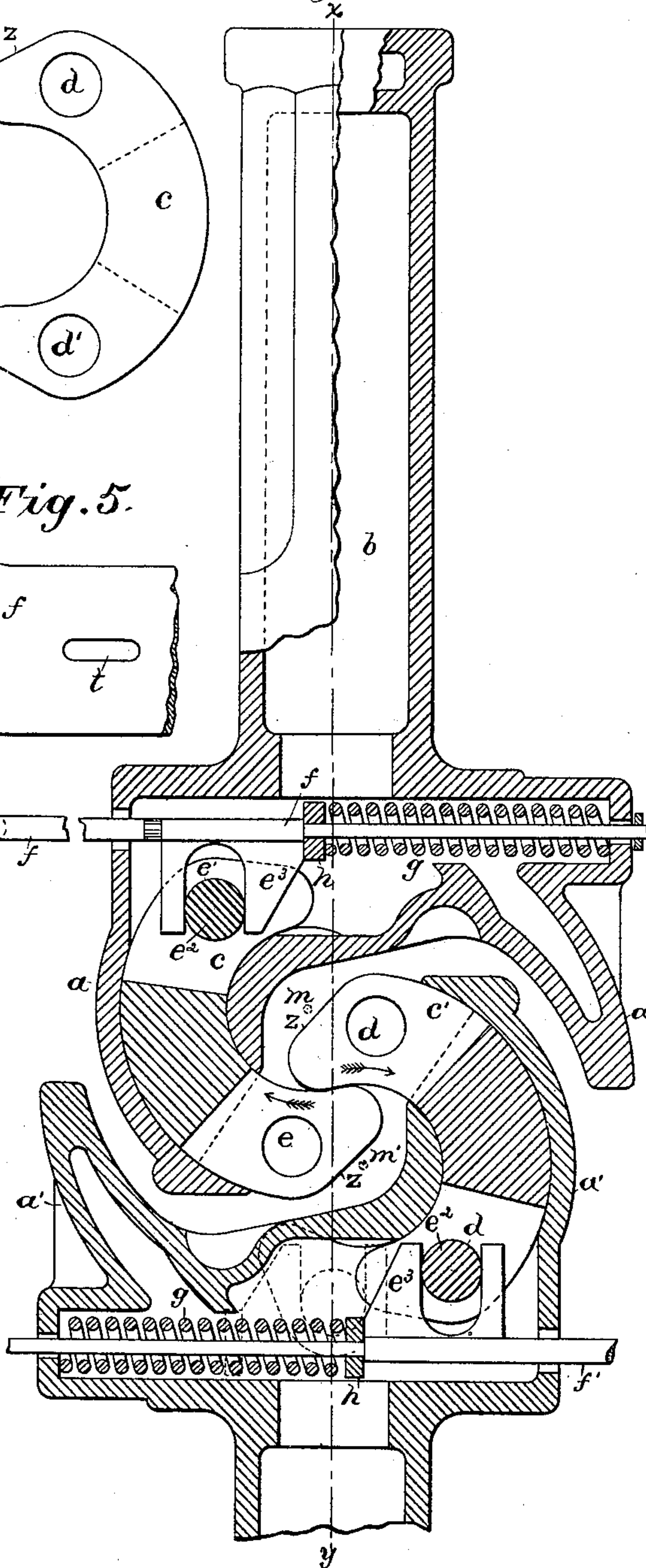
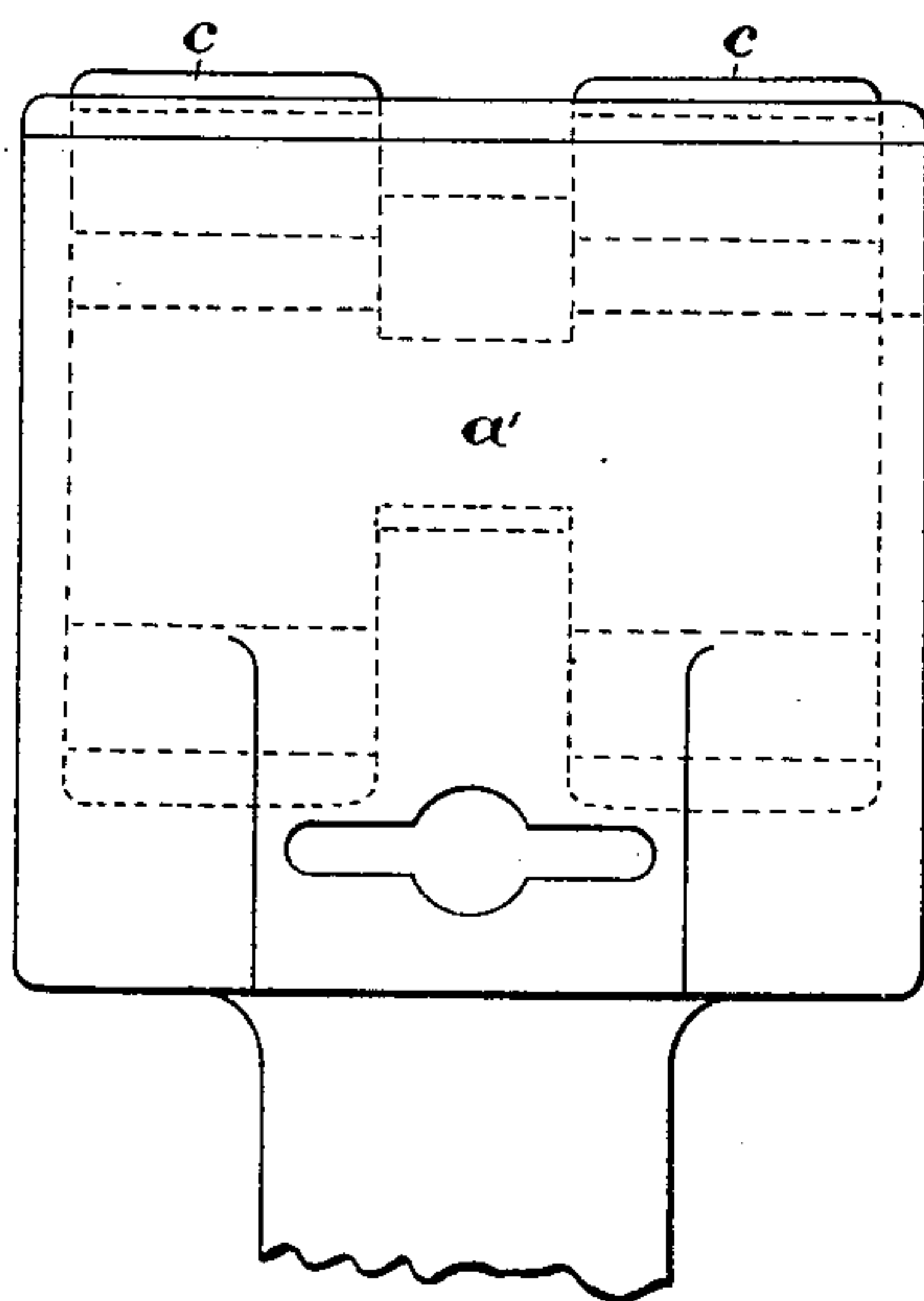


Fig. 2.



WITNESSES

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Fig. 10.

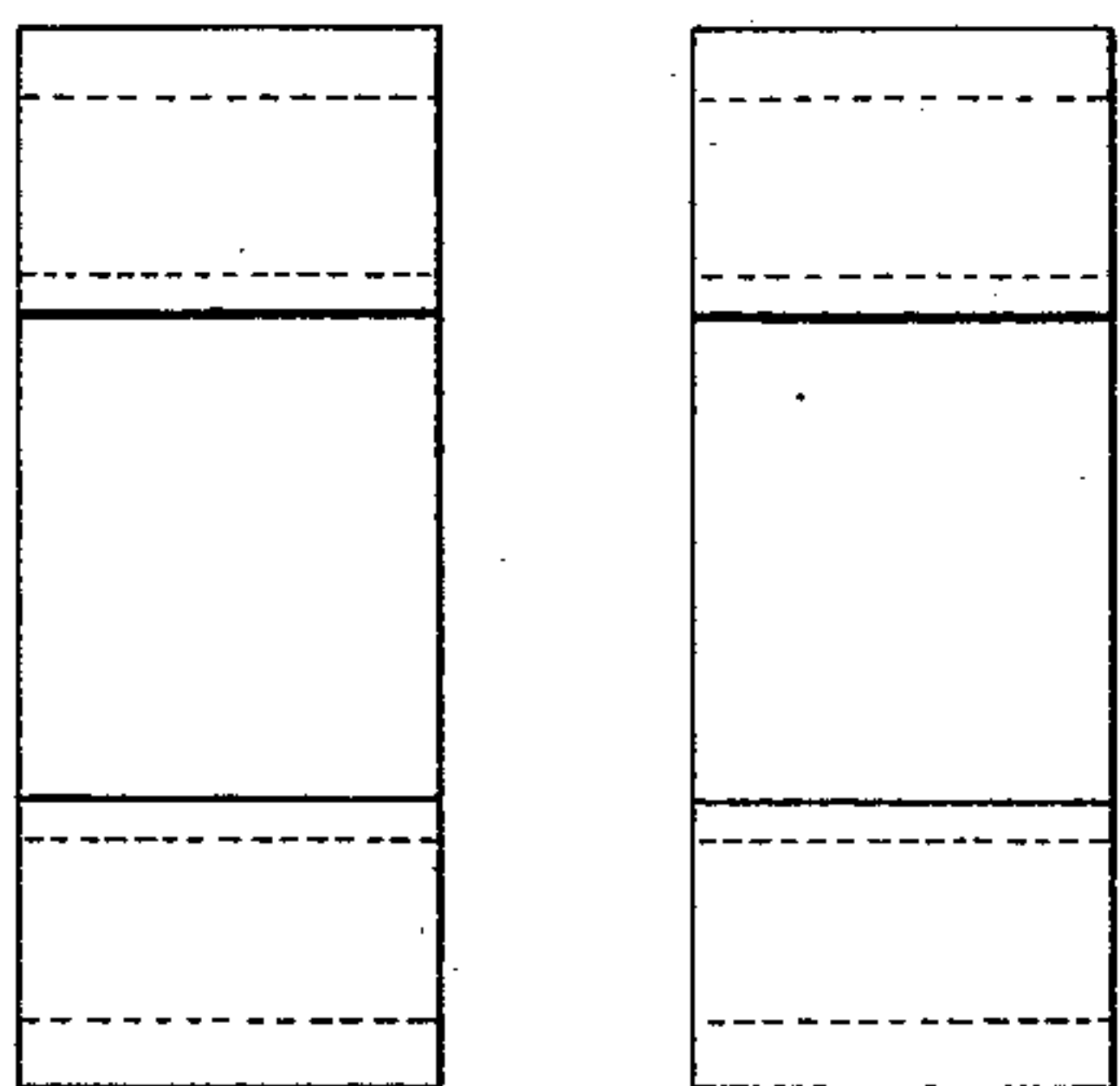


Fig. 6.

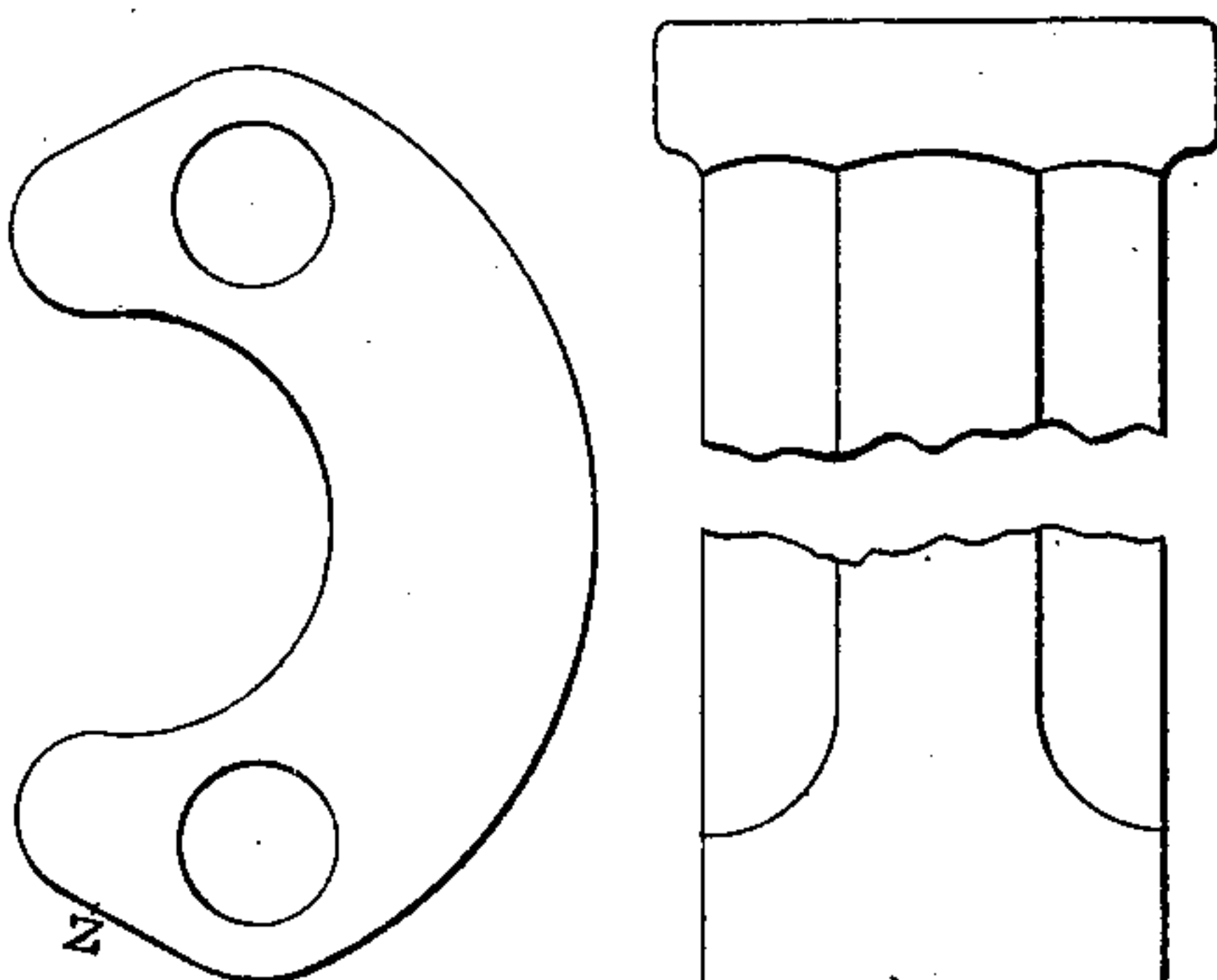


Fig. 9.

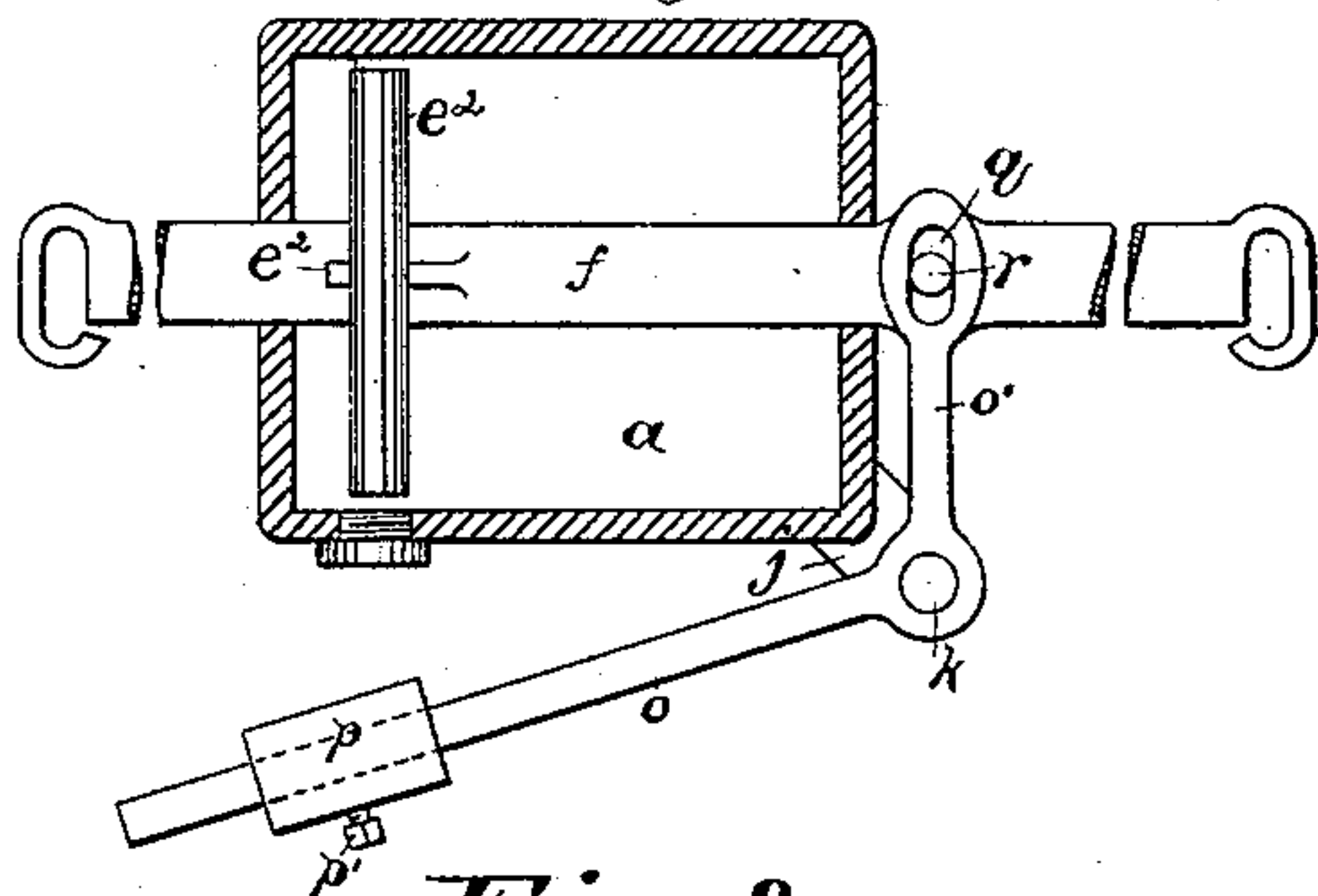


Fig. 8.

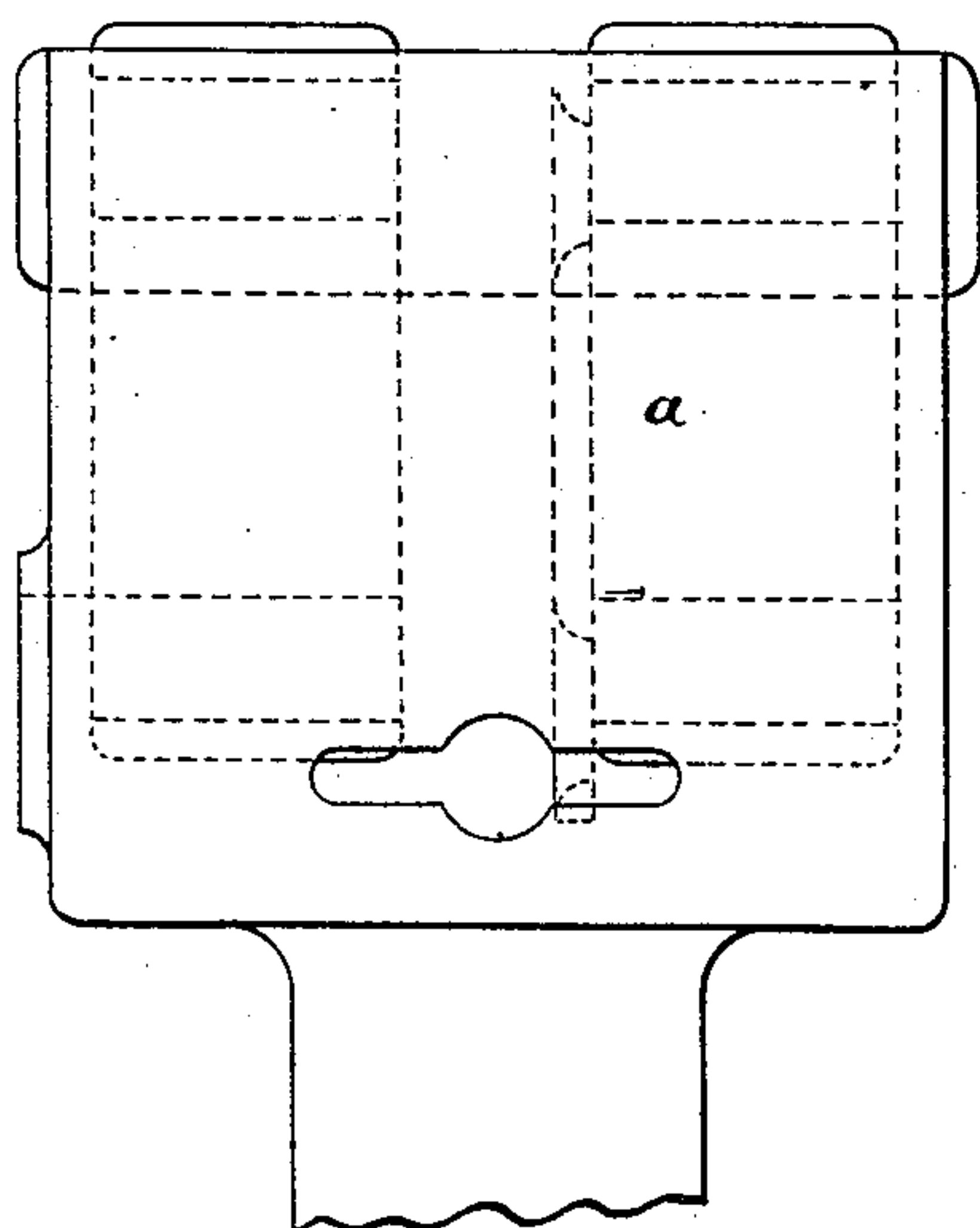
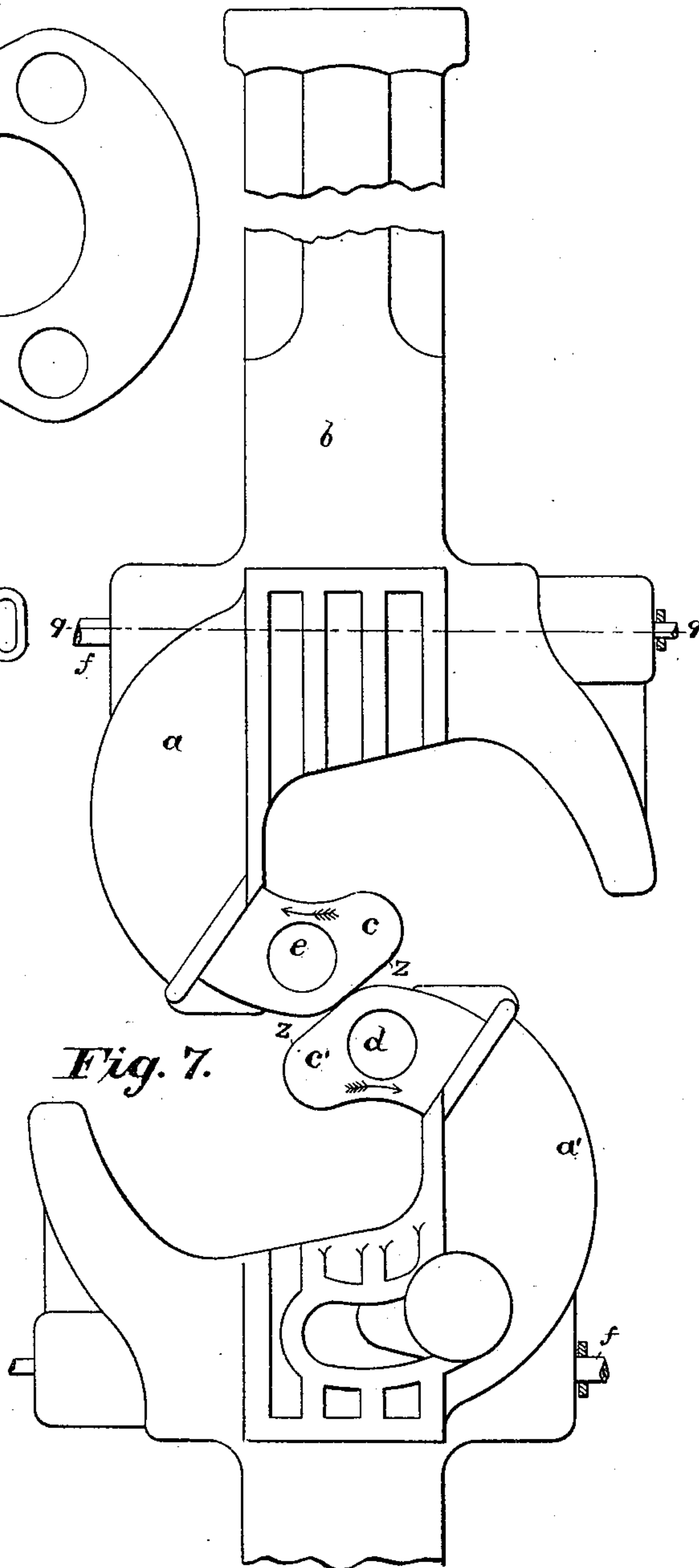


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM F. BRAUN, OF COLUMBUS, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 377,289, dated January 31, 1888.

Application filed August 18, 1887. Serial No. 247,393. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BRAUN, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to the class of automatic couplings.

It is the object of my invention to provide an automatic car-coupling simple, strong, and durable in construction, which is also adapted to link-and-pin coupling.

My invention consists in the improvements hereinafter described, and then particularly specified in my appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 shows a longitudinal section of two of my couplings as they would appear if applied to the adjacent ends of two car-platforms and coupled together. Fig. 2 is a right-hand side view of the head of the coupling, indicating in dotted lines a side view of one of the curved knuckles or couplers within the head, as shown in Fig. 1. Fig. 3 shows a top view and a view from the outer curved side of one of the knuckles detached. Fig. 4 illustrates the handle of the rod on one side next the spring of each head for working the knuckles by hand. Fig. 5 is a view of the rod as used on the side of each head farthest from the spring. Figs. 6 and 7 show top or plan views of the couplings in the position they assume when coming together and are about to couple automatically. Fig. 8 is a right-hand side view of the head shown in Fig. 7, the dotted lines indicating the knuckle within the head. Fig. 9 is a vertical transverse section on the line 9 9 of Fig. 6; and Fig. 10 is a top and a side view of the knuckles of one of the heads detached, in this instance, as also in Fig. 8, each knuckle being in two separate curved pieces.

Referring to the letters upon the drawings, *a a'* indicate the heads of the opposite couplings, and *b* denotes the coupling-shank.

c and *c'* indicate the curved knuckles or couplers, which slide concentrically within curved recesses in the heads made from centers indicated at *m m'*. The knuckles are provided with two holes, *d* and *e* and *d'* and *e'*, at their opposite ends. They are also provided

at their opposite ends with horizontal slots for receiving the ordinary coupling-links, so as to be adapted for such coupling by hand as well as for automatic coupling. (See Fig. 3.) The knuckles are made exactly alike at their opposite ends, being cut away on their faces at *z* on a straight line intersecting the curve in which they are formed, so that when the outer ends become snubbed or worn the knuckles may be reversed and what were the inner ends made to serve as the outer or snubbing and coupling ends. The holes at the inner ends of the knuckles are to receive the pins *e²*, which are of a length equal to the thickness of the entire knuckle. The outer holes may be used at any time for the pins of the ordinary pin-and-link couplings. The pins *e²* pass through a fork, *e³*, which is secured to and projects from the flat side of the hand-rod *f f'*. One part of this rod is round, and over it is placed a spiral spring, *g*, entirely inclosed within the head *a*. One end of this spiral spring rests against the collar *h* and the other end against the metal of the head.

Whenever it is desired to uncouple the cars or the couplings, it will only be necessary to push or pull the hand-rod, according to which side the operator stands upon. The result will be the movement of one of the curved knuckles in its recess, so as to unlatch it from the other. The dotted lines in Fig. 1 indicate the position to which the knuckle may be slid for uncoupling. As soon as the rod is released, the spring *g* will restore it to its original position and carry the knuckle to the position for coupling.

The inclined contacting surfaces of the knuckles have an angle of about forty-five degrees, as shown in Figs. 6 and 7, so that when they are forced together they will yield and pass each other, and then be hooked together by the action of their springs, or if only one yields it will be sufficient. Automatic coupling is assured in all cases, as well on the shortest curves and the steepest grades as upon a straight horizontal track. It will not in all cases be necessary to use springs to keep the knuckles in the coupling position, or to force them into that position when they have been temporarily displaced. A weight may be used for the purpose, as shown in Fig. 9, where *j* is a lug attached to the head *a*, with a hori-

zontal hole through it which receives the pin k , on which is pivoted a double lever, $o o'$. The arm o carries the weight p , which can be adjusted by means of a set-screw, p' , to suit all requirements. In the end of the arm o' is a slot, q , in which works a pin, r , projecting from the hand-rod f . If any blow is given to the knuckle for the purpose of coupling, or a push or pull is applied to the hand-rod f for the purpose of uncoupling, the lever $o o'$ makes an oscillating movement on its pivot-pin k , lifting the weight p . As soon as the displacing force is removed, the weight p drops, throwing the rod f back into its original position, and with it the knuckles. In case it is not desired to use the couplers for automatic coupling, a key may be inserted in the slot t of the hand-rod f , which will hold it firmly in place, thus keeping the couplers in the coupling position.

On account of the simple and regular form of the knuckles they can be made of any suitable material and can be readily forged or rolled. They serve to completely close the opening in the head of the coupler, so as not to admit dirt, snow, or ice. They are so placed in the coupling-heads that the entire strain of the pulling and of blows is distributed over a

large part of the head and is in a direction nearly on the line of the common axis xy of Fig. 1. 30

Having described my improved car-coupling, what I claim to be new, and desire to secure by Letters Patent of the United States, is—

1. In a car-coupling, the combination, with a head provided with a circular knuckle-recess, of a curved knuckle fitting and adapted to slide within the recess, substantially as set forth. 35

2. In a car-coupling, a curved knuckle with its ends exactly alike and cut away on their outer faces on a straight line intersecting the curve of the knuckle, substantially as set forth, whereby the knuckle may be reversed. 40

3. The combination, with the head, of the curved knuckle, the hand-rod, and a spring or weight for throwing the hand-rod and knuckle, substantially as set forth. 45

In testimony whereof I have hereunto subscribed my name. 50

WILLIAM F. BRAUN.

Witnesses:

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