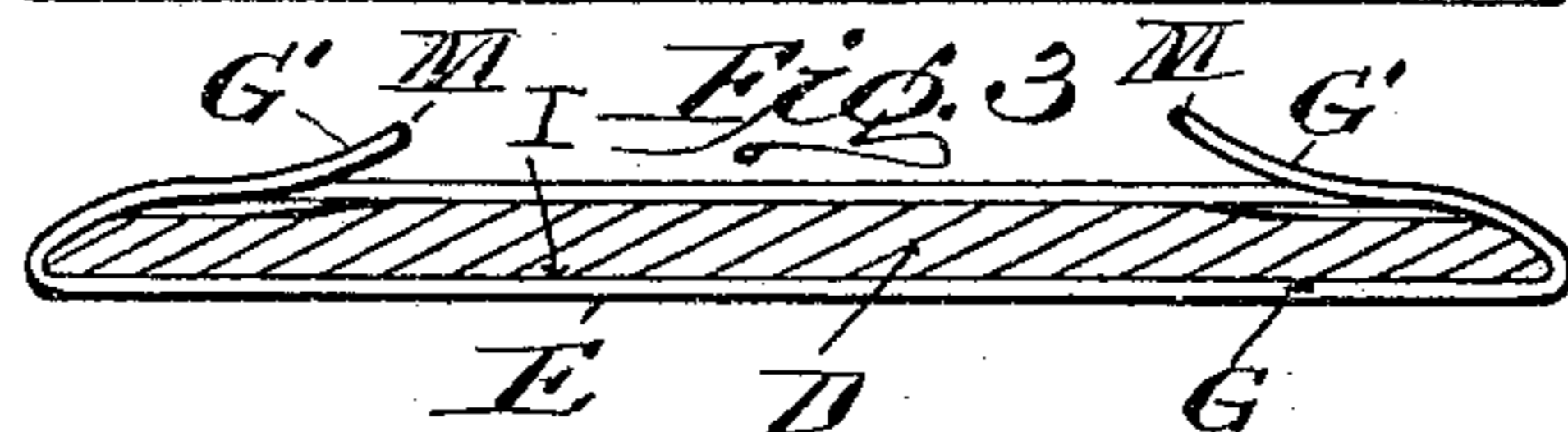
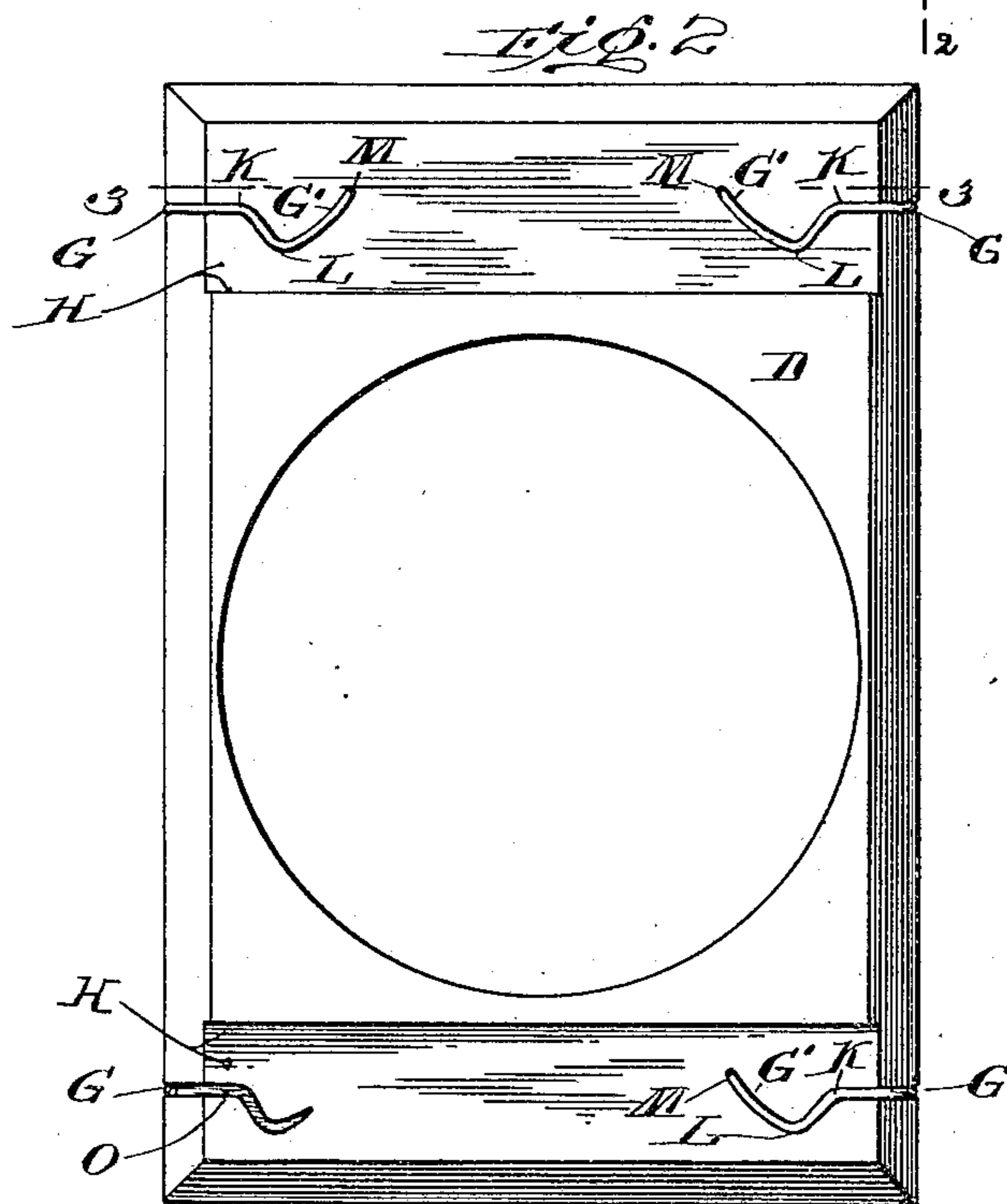
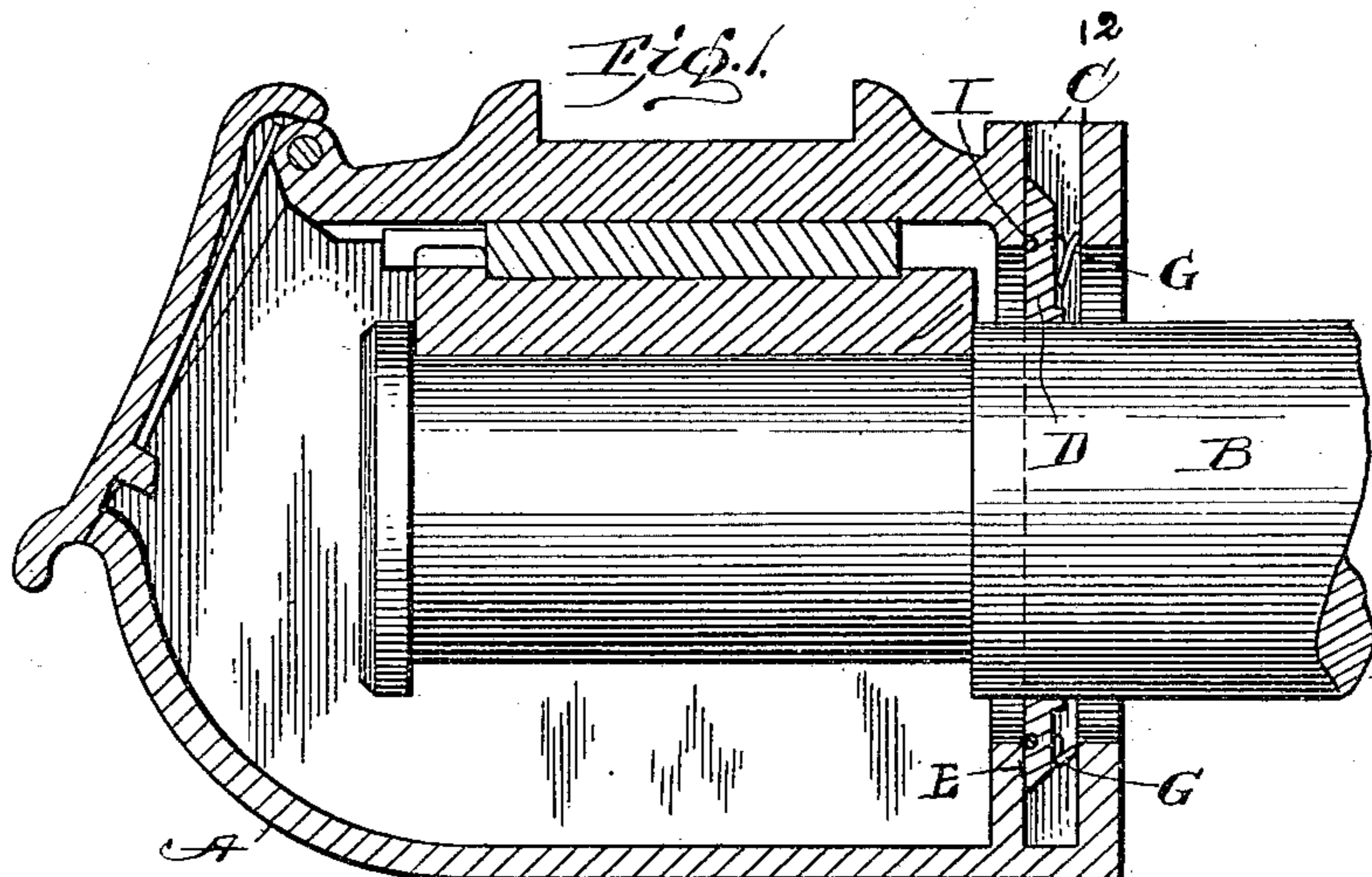


No. 825,411.

PATENTED JULY 10, 1906.

J. S. PATTEN.
DUST GUARD.

APPLICATION FILED JULY 11, 1905.



Inventor

James S. Patten,

By

Wallace Crane,

Attorney

Witnesses
J. M. Fowler Jr.
Edwin L. Jewell

UNITED STATES PATENT OFFICE.

JAMES S. PATTEN, OF BALTIMORE, MARYLAND.

DUST-GUARD.

No. 825,411.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed July 11, 1905. Serial No. 269,195.

To all whom it may concern:

Be it known that I, JAMES S. PATTEN, a citizen of the United States, residing at the city of Baltimore, in the State of Maryland, have invented new and useful Improvements in Dust-Guards, of which the following is a specification.

The object of this invention is to provide a simple, inexpensive, and durable dust-guard that may be readily applied to ordinary axle-boxes without any changes or fitting.

More specifically, the object is to provide for using a spring-pressed dust-guard plate, while avoiding rapid wear of the spring or other parts.

It is well known that the relative movement of a dust-guard plate and the axle-box is incessant and that since the conditions of use make it impracticable to exclude grit sliding parts are ordinarily cut away with surprising rapidity. This I avoid by arranging the spring so that its ends have practically no sliding movement with respect to the parts which they engage, but allow free movement of those parts relatively by flexing the intermediate or middle portion of the spring.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of an axle-box showing an axle and my devices therein. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is a section on the line 3 3, Fig. 2.

In the figures, A represents an axle-box; B, an axle; C, a recess in the axle-box, and D a dust-guard plate in said recess. The plate is preferably a single piece of board encircling the axle and having its plane face E normally seated against the plane outer wall of the recess. The plate is pressed against its seat by springs G, borne by the plate and having ends G', which react against the opposite wall of the recess. The plate has its margins beveled toward its working face and at H near its upper and lower sides it is cut away on its rear face to a depth about equal to the diameter of certain spring-arms to be described. At a little distance from its upper and lower margins its working face is provided with narrow horizontal grooves I, in which lie spring-wires G, whose end portions are bent rearward around the lateral margins respectively of the board, following the bevels and the rear face of the diminished portion of the board to the points K, where all turn abruptly downward to points L and then upward, extending obliquely

away from the board, but toward its medial plane, and terminating in rounded ends M. These ends are nearly symmetrically placed with respect to the middle point of the board, and they preferably lie in the horizontal planes of the two grooves in the face of the plate, so that pressure upon them has no tendency to produce rotation.

The boards being formed with grooves deep enough to receive the spring-wire bodily, perforated, beveled, and thinned at its upper and lower ends, and the springs being bent to form, except that the angles at the ends of the part lying in the groove are somewhat greater than they are to be in the finished apparatus, the springs are slipped into place over the ends of the board, the central portion being pushed into the corresponding groove, and the end portions are then pressed inward and downward until they lie in the spaces obtained by thinning the board. When thus pressed, the wire sinks in the wood, forming for itself a groove O, which is deepest near the margins of the board and gradually diminishes in passing toward the medial line. This construction is indicated at the lower left-hand part of Fig. 2, where the spring is broken away to expose the groove O. As soon as the pressure upon these end portions is removed they spring outward to normal position or the position they should have in the finished article, and the device is ready for insertion in the ordinary axle-box. For inserting it, it is only necessary to press it downward into the recess in the axle-box, for owing to their normal inclination the spring-arms are all automatically sprung inward as the board descends, and the whole passes to position without injury and without any care whatever on the part of the workman.

In service the plate rises and falls in the box almost constantly, and these movements instead of sliding the spring ends flex the springs, the ends rocking without material sliding and perhaps without any sliding whatever. We have thus at most a mere rolling friction, which does not wear the surfaces appreciably. Besides the constant vertical movements the plate moves to a slight degree laterally, and owing to the bends in the spring-arms this movement also springs the wires instead of materially sliding its ends.

Practical tests of the devices in actual service on ordinary cars used in such traffic as has chanced to employ those cars has shown

that the devices remain in good condition at least as long as other parts of the mechanism and that when, for example, the brasses are so worn that the car must go to the shop the dust-guard is still in good working condition.

What I claim is—

1. The combination with a dust-guard plate having its contact-face provided with suitable grooves extending from side to side of the plate, of spring-rods lying in said grooves within the plane of the plate's surface and having their end portions bent rearwardly around the edges of the plate and extending obliquely inward and rearward from the plate's plane.

2. The combination with a dust-guard

plate thinned near its upper and lower margins and having horizontal grooves in its working face, of spring-rods lying in said grooves, respectively, and having their end portions bent rearwardly around the lateral margins of the plate, downwardly offset upon the rear face of the plate, and extended obliquely upward and away from the plate, substantially as set forth.

In testimony whereof I affix my signature in presence of two subscribing witnesses.

JAMES S. PATTEN.

Witnesses:

WILLIAM F. BISSING,
JAMES C. VEATCH.