W. M. GRAY.

DOOR-SPRING ATTACHMENT.

No. 169,351. Patented Nov. 2, 1875.

FIG. 1.

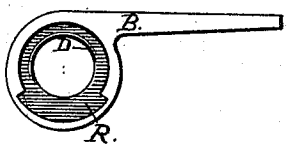


FIG. 2.

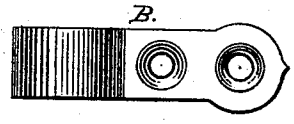


FIG. 3.

FIG. 4.

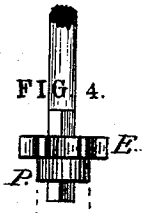


FIG. 5.

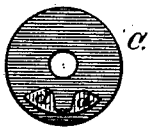
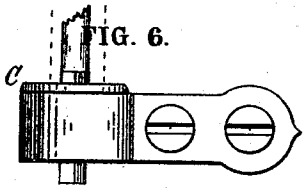


FIG. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM M. GRAY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN DOOR-SPRING ATTACHMENTS.

Specification forming part of Letters Patent No. **169,351**, dated November 2, 1875; application filed August 5, 1875.

CASE C.

To all whom it may concern:

Be it known that I, WILLIAM M. GRAY, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Door-Spring Attachments, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

In the case of many of the various methods of securing, fixing, and releasing the tension of door-springs, the detent devices have been so constructed and arranged as to require close fitting of parts, and, therefore, more or less expense for machine-work and handling of the same, for the purpose of assuring the snug fit required.

The primary object of my invention is to avoid machine-work, and the attendant expense, by so constructing and arranging the parts that, as they come from the sand, after the ordinary processes of cleaning, japanning, and inspection, they may be used with little or no expense of fitting, and, therefore, at a comparatively small cost of production.

This I accomplish by using, first, a plug, P, to receive the end of the spring, and fix it in a triangular perforation in or through the center of the same, or in any other usual manner, which plug is provided on its top side with detent-arms or cog-like projections, which projections rest, when in place, on a circular ledge, shelf, or perforated diaphragm disposed centrally and horizontally in the eye of the bracket, which may be described as countersunk on each side or face; second, an enlargement or recess in the eye of the bracket on each side of this diaphragm, and on one side of the countersink, extending, say, one-quarter or one-third of the distance around the same, and with a clearly-defined shoulder at each end of the same, vertically disposed, and so located as to span substantially the entire space on each side of any one cog on the plug, or between the adjacent sides of every alternate set consisting of two cogs with one cog between them; and, third, a detent, detaining, or locking device, consisting preferably of a cap-plate of the full size of the eye of the bracket, preferably perforated in the center by a hole large enough to receive the end of the spring above the plug, this plate being provided on its under side with a projection corresponding in position and dimensions to the enlargements or recesses in the bracket-eye, before explained, but fitting loosely, and cut out in the center, so as to receive easily any one of the cog-like projections on the side of the plug.

Figures 1 and 2 show the bracket in horizontal and vertical views. Figs. 3 and 4 show the plug in similar views. Fig. 5 shows the cap as it appears on the under side. Fig. 6 shows all the parts in place as when in use.

The diaphragm D being disposed centrally and horizontally in the bracket-eye, and the recesses or enlargements R being placed on each side of the diaphragm, the bracket B is reversible. The plug P projects its lower end down through the hole in the diaphragm, fitting loosely therein. The fit of the detents *d d* of the cap C, both in the recesses R and over the cog or projection on the plug directly engaged, is such as to be certainly free, and always easy. As shown, they have a bearing upon two cogs. The number may be increased by increasing the detents and the size of the recesses.

With such an arrangement and construction of the several parts, the detention of the plug and the spring in its charge by the detent-cap C is certain, and the release, by the elevation of the cap, is also easy, when the tension of the spring is removed, as it may be in any usual manner, and all without special care in fitting the parts.

I claim as my invention—

The bracket B, provided with the diaphragm D and recesses R, the cap C, provided with the detents *d d*, and the plug P, provided with the projections E, in combination with a door-spring, and operating in the manner set forth.

WILLIAM M. GRAY.

Witnesses:

JAMES A. SKILTON,

WM. H. BUTTERWORTH.