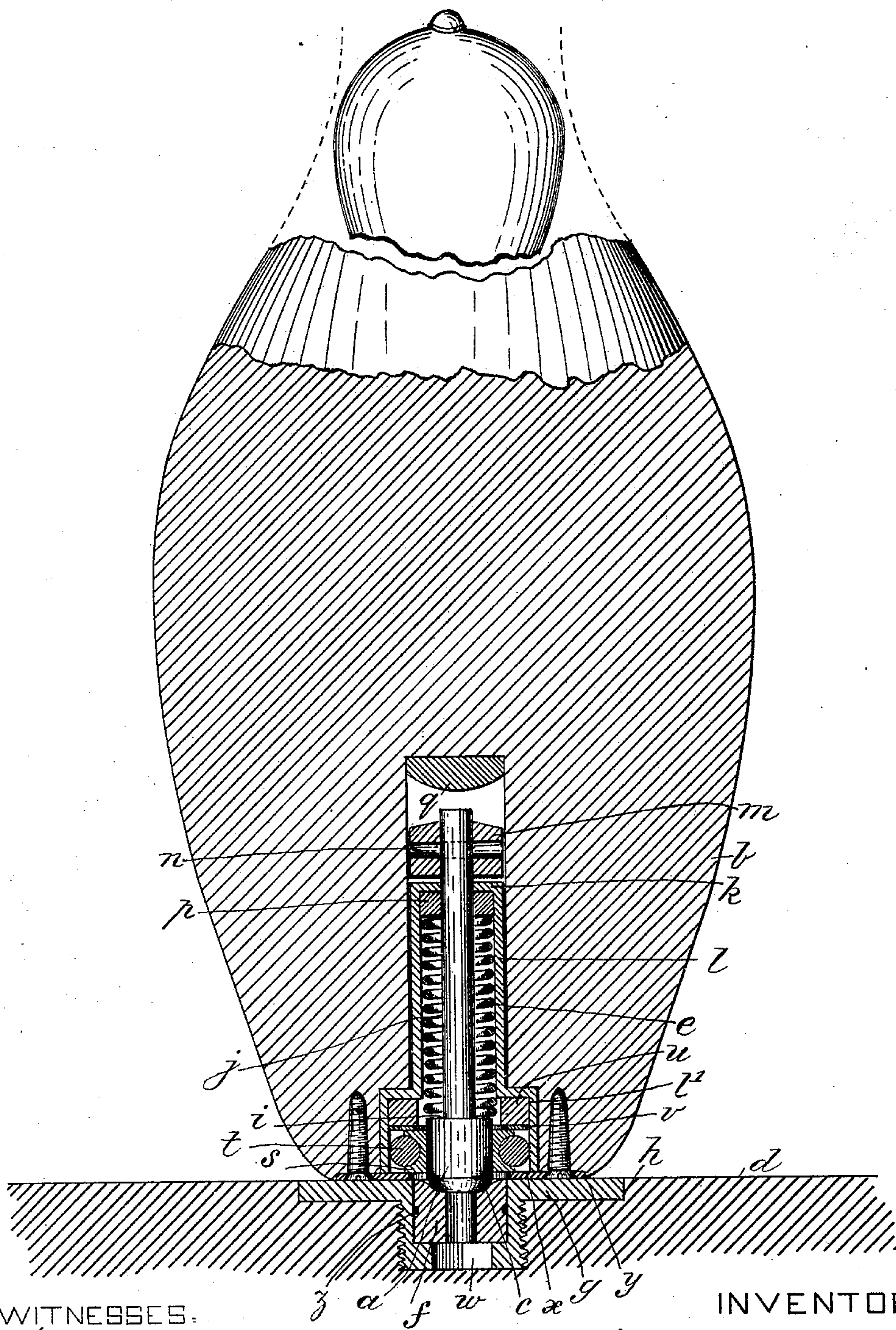


(No Model.)

J. AUSTIN & F. G. MOLITOR.
BOWLING ALLEY PIN.

No. 496,106.

Patented Apr. 25, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES AUSTIN AND FREDERICK G. MOLITOR, OF BROOKLYN, NEW YORK.

BOWLING-ALLEY PIN.

SPECIFICATION forming part of Letters Patent No. 496,106, dated April 25, 1893.

Application filed June 29, 1892. Serial No. 438,390. (No model.)

To all whom it may concern:

Be it known that we, JAMES AUSTIN, a subject of the Queen of Great Britain, and FREDERICK G. MOLITOR, a citizen of the United States, both residents of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Bowling-Alley Pins, of which the following is a specification.

Our invention relates to devices whereby the person setting up the bowling pins may set them more accurately than as they are usually arranged, and it consists in the improvements in construction and arrangement of centering points in the pins and centering sockets in the standing places in the floor, as hereinafter fully described reference being made to the accompanying drawings in which we represent a sectional elevation of a bowling pin, also a section of the floor through a standing place for the pin.

The essential feature of the invention consists of a centering stud *a*, suitably projecting from the center of the base of the pin *b*, to enter a socket *c*, in the center of the standing place for the pin on the floor *d*, to guide the pin in setting it, said point being arranged to be thrust upward within the pin to escape from the socket in the floor when the pin is struck by the ball without damage to the point or socket as occurs when the centering point is a fixed stud projecting from the base of the pin; said point being provided with a spring *e*, to thrust it out and maintain it in the position for so guiding the pin in setting it.

The construction and arrangement of the centering point, and spring, and the adjuncts thereof may be variously contrived, but what we have in practical experiments found best and at the present time prefer consists of the hardened steel step *f*, set in the socket plate *g* which is suitably set in a recess *h* in the floor, said step having the conical socket *c*, in the top, the sides of which are about thirty degrees to the horizontal plane, said socket being flared out a little flatter at the top, with the end of the point shaped on about the same angle, said point having a shoulder at *i*, above which is a stem *j*, of considerable length, extending up through the top plate *k* of a metal socket *l* inserted in a hole bored in

the pin and having the head *m* fastened on by a pin *n* to limit the thrust of the point outward by the spring between which shoulder *i*, and top *k* of the socket *l*, is the coiled spring *e*, and, preferably a rubber spring *p*, the latter placed next to the top and having the upper end of the coiled spring bearing against it, and above the upper end of the stem and at a suitable distance to allow the point to rise clear of the socket *c*, is a rubber buffer *q*, fixed in the top of the hole bored in the wood to prevent unnecessary rise of the point above what is sufficient for it to clear the centering socket *c*, and thus protect the spring *e* from unnecessary compression.

The rubber spring *p* above the coiled spring relieves the coiled spring particularly the upper end of it from much damaging effect which it would otherwise be subject from the great shocks to which it is exposed through the very powerful blows of the balls of the pins. It is also important to relieve the point from shocks through lateral play of the point, for which we make the metal socket with a lateral enlargement *l'* of the lower portion, in which we fit the collar *s* on the point, said collar having a rubber ring *t*, forming an elastic cushion which yields laterally under the effects of the shocks, and being resisted by the metal socket restores the point to the central position.

Above the elastic cushion within the part *l'* of the metal socket we also provide the elastic ring *u*, with a metal washer *v* between it and the cushion, said elastic ring being a packing for the cushion which will yield slightly to the upward thrusts of the cushion due to the lateral swing of the point in the upper end of the metal socket as a center. The socket *l* is confined in the hole in the end of the pin by the plate *x* fastened on the base of the pin by the screw *y*.

The step *f* is packed with a cord *z* or other approved packing ring fitted in a suitable circular groove to hold it in the socket in a manner favorable to prevent the step from getting stuck fast in the socket if fitted more closely without packing.

The socket plate *g* may be made of hard brass or other metal, or of hard rubber or any approved material, it is made with a hole *w*, through the bottom of the socket in suitable

angular form for turning it by a plug wrench for screwing the plate in and out of the floor.

We claim as our invention—

1. The combination with a bowling pin and
5 a centering socket in the standing place for the pin on the floor, of a centering point projecting from the base of the pin and adapted to be thrust upward within the pin by the shocks of the balls for escape from the centering socket, and a spring to thrust out the
10 point substantially as described.

2. The combination with a bowling pin and a centering socket in the standing place for the pin on the floor, of a centering point projecting from the base of the pin and adapted
15 to be thrust upward within the pin by the shocks of the balls for escape from the centering socket, a spring to thrust out the point, means for allowing lateral play of the point
20 to relieve the shocks, and a cushion opposing the lateral play of the point substantially as described.

3. The combination with a bowling pin and a centering socket in the standing place for the pin on the floor, of a centering point projecting from the base of the pin and adapted
25 to be thrust upward within the pin by the shocks of the balls for escape from the centering socket, a spring to thrust out the pin, and a buffer to limit the thrust of the point
30 within the pin substantially as described.

4. The combination with a bowling pin and a centering socket in the standing place for the pin on the floor, of a centering point projecting from the base of the pin and adapted
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to be thrust upward within the pin by the shocks of the balls for escape from the centering socket, a coiled spring to thrust out the point, and an elastic rubber seat spring for the upper end of the coiled spring substantially as described. 40

5. The combination with a bowling pin and a centering socket in the standing place for the pin on the floor, of a centering point projecting from the base of the pin and adapted
45 to be thrust upward within the pin by the shocks of the balls for escape from the centering socket, a spring to thrust out the point, means for allowing lateral play of the point to relieve the shocks, a cushion opposing the
50 lateral play of the point, and the elastic ring above the cushion substantially as described.

6. The combination with a bowling pin, of a centering socket in the standing place of the pin on the floor, consisting of the socket
55 plate set in a recess in the floor, and the step in the center of the socket plate; a centering point projecting from the base of the pin and adapted to be thrust upward within the pin by the shocks of the balls, and a spring to
60 thrust out the point substantially as described.

Signed at New York city, in the county and State of New York, this 22d day of June, A. D. 1892.

JAMES AUSTIN.
FREDK. G. MOLITOR.

Witnesses:

W. J. MORGAN,
ERNST CURNDGREN.