L. Decker,

Billiard Cushion,

No. 18,841, Patented Dec. 15, 1857.

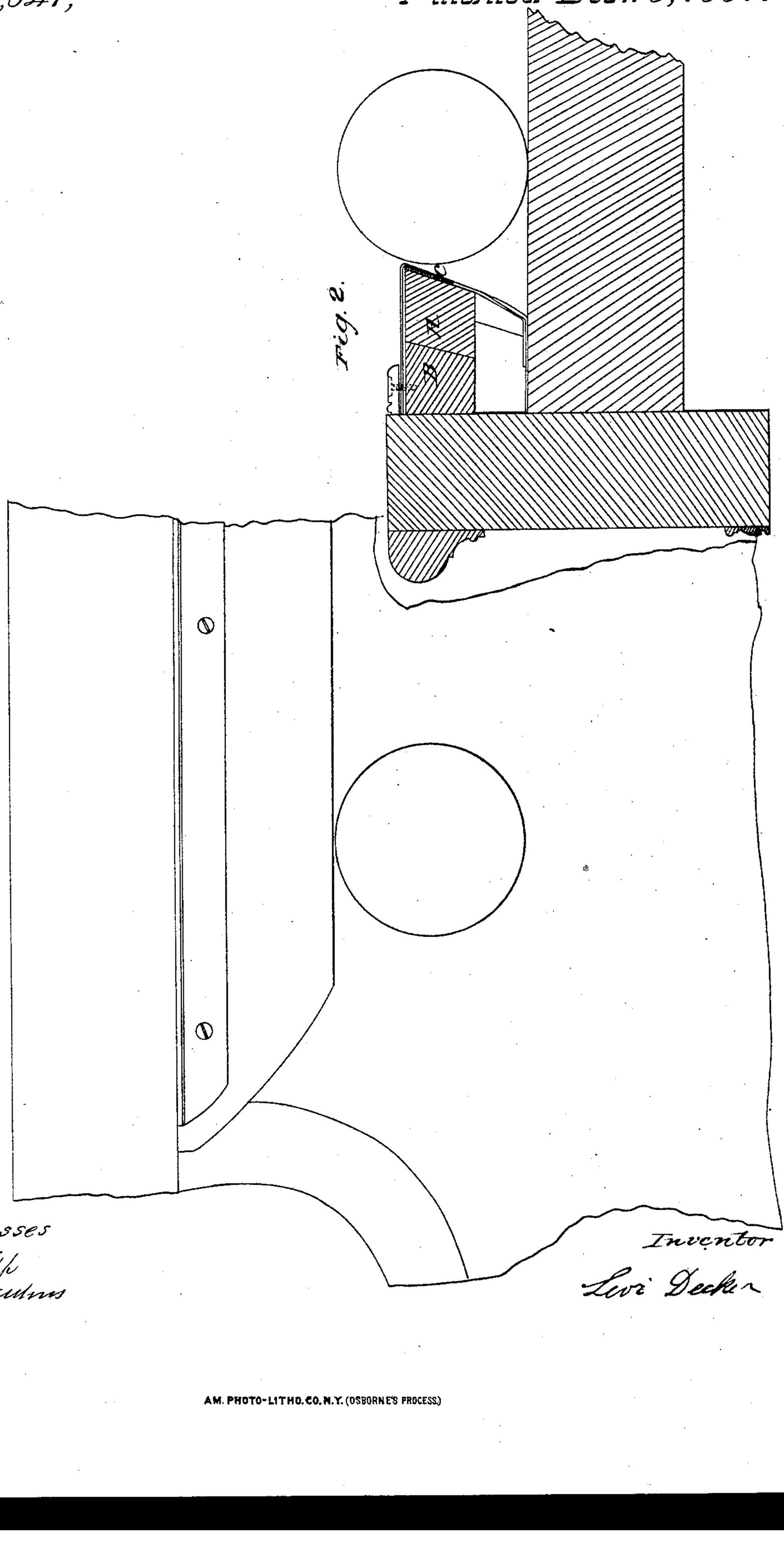

Fig. 2.

Fig. 1.

Witnesses
Sam K. Kip
M. B. Mullins

Inventor
Levi Decker

AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

LEVI DECKER, OF BERGEN, NEW JERSEY.

BILLIARD-TABLE CUSHION.

Specification of Letters Patent No. 18,841, dated December 15, 1857.

To all whom it may concern:

Be it known that I, LEVI DECKER, of Bergen, county of Hudson, and State of New Jersey, have invented a new and useful Improvement in the Cushions of Billiard-Tables; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, in which like letters represent like parts in the several figures.

The nature of my invention consists in so constructing the cushions of billiard tables as to prevent too much indentation therein by the ball, and consequently diminish the tendency of the ball to jump over the sides and at the same time retain sufficient elasticity for the return of the ball; which end I attain by the combination of a steel spring with india-rubber in such manner that the ball shall act upon the steel spring so as to force it back against and cause it to be indented into the india-rubber pad, and to secure the action of considerable length of the surface of the rubber.

It is well known to billiard players that the cushions projecting above the surface of the table should be made as low as can be and subserve the purpose of arresting and returning the balls. It is also a fact well understood that a billiard table cushion should have as much elasticity as shall be consistent with the attainment of the other essential objects. A difficulty in the use of the cushions heretofore in common use has been, that to prevent the balls jumping over the sides it has been necessary to make the sides higher than is otherwise desirable. For instance, a cushion made of india-rubber covered with cloth or leather, when struck by a ball yields easily upon the surface and admits of a deep indentation being formed by the ball, this destroys the bevel of the cushion and produces an inclined plane below the ball tending to elevate the ball and carry it over the cushion. To counteract this tendency and obviate this result, it has been necessary, in constructing billiard tables to make the sides and cushions so high that a corresponding inclined plane would be formed in the cushion above the ball tending to throw the ball downward so as to counteract its upward tendency caused by the lower inclined plane. Therefore, to secure sufficient reaction of the cushion with little indentation in depth, is an important desideratum in constructing the cushions of billiard tables, and my invention is for the attainment of that object.

To enable others skilled in the art to make and use my invention, I will describe its construction and operation.

I make an india-rubber pad in the usual form, and against the most projecting part of the surface of that pad, designed for the action of the balls, I place and secure a steel spring consisting of a strip of steel, say about as thick as the main spring of a clock, and about a half an inch or three quarters of an inch wide along each cushion. I then complete the cushion by covering the whole with cloth in the usual manner.

Of the drawings hereto annexed, Figure 1 is a plan of a part of the cushion and table, and Fig. 2 is a vertical section.

A represents the india-rubber; the red line represents the steel spring, and B the wood or cushion-back, and C the cloth. This combination of the steel spring and rubber pad makes a cushion which with very little indentation in depth has great rebounding force. When a ball strikes a cushion employing only rubber covered with cloth, the cushion yields and the ball advances into it until its resistance has counteracted the momentum of the ball, whereupon it commences to return the balls. The force so exerted is derived exclusively from that part of the rubber acted upon; and since the ball in such case acts upon but a small amount of the surface of the rubber, it has to advance to a considerable depth into the rubber before it has brought into action a sufficient quantity of the rubber to exert force capable of throwing it back. It is obvious therefore that the greater the amount of rubber which is brought into action on the surface of the pad, the less may be the depth of the indentation, and still secure the requisite amount of reaction.

In my improvement the ball acting against the steel spring and forcing it back, causes it to be indented into the rubber, the spring being long then acts upon the surface of the rubber at considerable distance on either side of the ball, and thereby brings a much larger area, and especially in length of the surface of the rubber pad into action, than is the case without the interposition of the spring, and superadding, at the same time, its own gradually increasing resistance, it thus gathers sufficient reacting force to re-

turn the ball by comparatively little indentation, and thus removes, to a considerable extent the cause, and lessens the danger of the ball overleaping the side of the table. It is well known also that a ball is much less likely to give a true angle when returning from a deep indentation into the cushion than it is after having been but slightly indented. It is also found that the jumping of the balls when they strike the cushion and do not pass over cuts and injures the cloth of the table and particularly slate tables. My invention also essentially removes both of these difficulties.

Cushions constructed according to my invention are of great durability, and will retain their elasticity longer than any which are known to me.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of india-rubber and a steel spring for billiard table cushions substantially as above described.

LEVI DECKER.

In presence of—
SAM K. KIP,
MILES B. ANDRUS.