(No Model.)

M. BRADLEY.

TOY SPRING GUN.

No. 310,873. Patented Jan. 20, 1885.

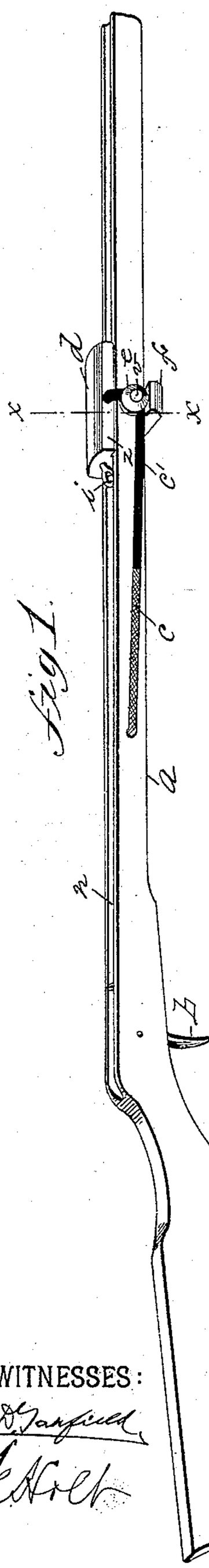

Fig 1.

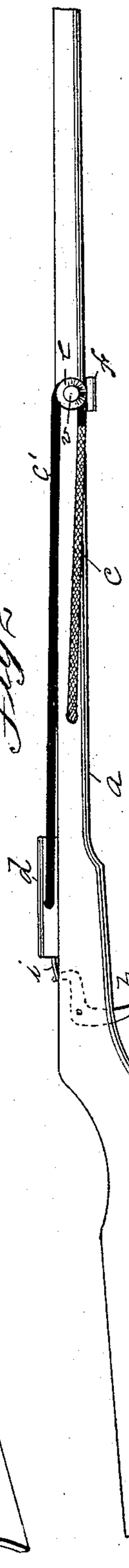

Fig 2

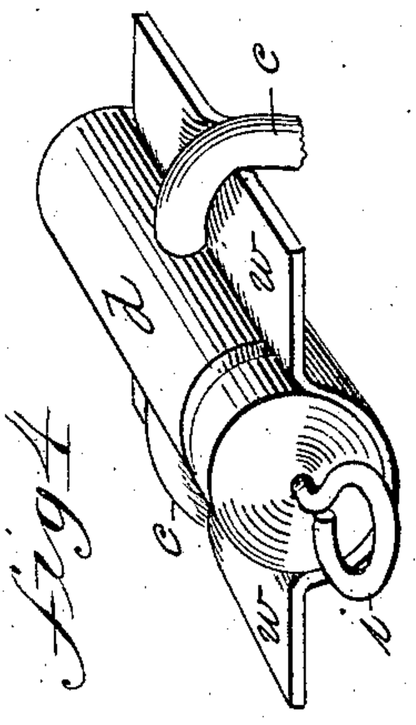

Fig 4

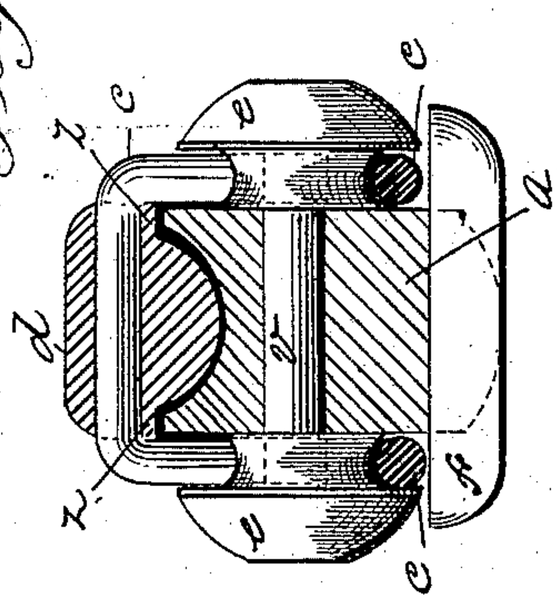

Fig 3

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UNITED STATES PATENT OFFICE.

MILTON BRADLEY, OF SPRINGFIELD, MASSACHUSETTS.

TOY SPRING-GUN.

SPECIFICATION forming part of Letters Patent No. 310,873, dated January 20, 1885.

Application filed June 2⁰, 1884. (No model.)

To all whom it may concern:

Be it known that I, MILTON BRADLEY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Toy Guns, of which the following is a specification.

This invention relates to toy guns, the object being to provide in toy guns which have a driver actuated by an elastic cord bearing-points for the cord while under strain, which obviate friction, prevent undue wear of the cord, and tend to equalize the driving force of the latter, and to provide an improved finish for that portion of the cord which is subject to abrasion, whereby it is made more durable, and to provide a driver which is adapted to carry the cord away from the sides of the gunstock and prevent the frictional wear of the cord against the latter.

In the drawings forming part of this specification, Figure 1 is a perspective view of a toy gun embodying my improvments. Fig. 2 is a side view showing the driver drawn back and attached to the trigger-hook. Fig. 3 is a sectional view about on line *x x*, Fig. 1. Fig. 4 illustrates a modified construction of the driver and cord-guard.

In the drawings, *a* is the gunstock, having the usual driver-groove, *n*, therein, and provided with the trigger-hook *b*. *c* is a braid-covered elastic cord, having on the black part thereof (lettered *c'*) an elastic cement covering. *d* is the driver, having the eyebolt *i* in one end, and provided with the side lips, *z*. *v* is a roller-shaft passing through the stock *a*. *e e* are cord-rollers fixed on the ends of shaft *v;* and *f* is a cord-bar secured on the stock under the rollers *e*.

The stock *a* is made to represent the form of a gun, as shown, and having a groove, *n*, in its upper side in which the driver *d* moves, and in which the projectile is placed which is to be thrown by the latter. A trigger-hook, *b*, is pivoted in the stock *a* at the rear end of the groove *n*, having a hook at its upper end on which to engage the eyebolt *i* in the rear end of the driver, when the latter is drawn back, as in Fig. 2, and the usual finger-piece extending beneath the stock. About midway between the front end of the stock and the said trigger-hook a roller-shaft, *v*, is placed in the stock *a*, extending through it and projecting beyond the sides thereof, and is fitted to turn freely in the stock. A cord-roller, *e*, is secured on each end of shaft *v*, and said rollers turn with the shaft. If preferred, the shaft may be fixed and the rollers be arranged to turn thereon. An elastic cord, *c*, is attached by its ends, after having been passed through the driver *d*, to the stock *a* between the roller-shaft *v* and the trigger-hook *b*. Said cord is provided with the usual braided covering applied over the rubber body thereof, and applied to that portion of the cord *c'* which is in use drawn forcibly over the rollers *e* and through the driver *d*, is an elastic cement composed of glue and glycerine or other suitable materials, which fills up the pores of the braided covering and prevents the wear of the latter by abrasion and passing over the rollers, and contributes to its ease of action. The driver *d* is fitted to slide in the groove *n* in the stock *a*, and has on its sides laterally-extending lips *z*, which reach over the edges of the stock on each side of said groove, and extend far enough beyond the sides of the stock to keep the cord *c*, which passes through the driver and down under the rollers *e*, from rubbing against the stock. It will be seen that without said extending lips on the driver the cord would, while under tension, be drawn against the sides of the stock and become worn thereby, and more or less friction would be the further result.

Fig. 4 shows a driver having a piece of leather or similar flexible material attached to the side of the driver which lies against the surface of groove *n*, which leather has side extensions, *w*, adapted to occupy a position between the edges of the stock *a* and the cord *c* on each side of the driver, thus performing to a certain extent the function of the lips *z* in Figs. 1 and 2, but imperfectly as compared with the driver having the rigid lips thereon, as the cord runs much more freely when it is prevented from pressing against the edges of the stock directly or indirectly.

To prevent the cord *c* from springing off from one or both of the rollers *e* by the loosening of the cord when the driver recoils suddenly from the end of the gun after firing it, the cord-bar *f* is secured on the under side of

the stock opposite the shaft *v*, occupying the position relative to the rollers and cord shown in Fig. 3.

The gun is adapted to throw a spherical or cylindrical projectile or an ordinary-shaped arrow, and is operated by drawing the driver back, as shown in Fig. 2, and hooking the eyebolt *i* onto the trigger-hook *b*, then placing the projectile in front of the driver and pulling the trigger.

The relative positions of the cord, the driver, and rollers *c*, the cord running under the latter, are such that the driver is drawn more or less against the surface of groove *n*, and cannot jump from the latter, and the cord forms a recoil-spring to arrest the driver before it can fly beyond the end of the stock, and a return-spring to bring it back to the position over the shaft *e*. (Shown in Fig. 1.)

There is advantage in having an elastic at each side of the toy gun connected to the driver over one having a single cord at the bottom of the driver, as the two cords counterbalance each other, and therefore do not tend to "bind" the driver.

What I claim as my invention is—

1. In a toy gun, a stock having cord-rollers hung on each side thereof, an elastic driver-cord having its ends secured to the stock between said rollers and the breech of the gun, and a driver engaging with said cord and provided with laterally-extending lips between the cord and the stock, combined and operating substantially as set forth.

2. In a toy gun, a stock having cord-rollers hung on each side thereof, an elastic driver-cord having its ends secured to the stock between said rollers and the breech of the gun, a driver engaging with said cord, and a cord-bar secured to the stock under the roller-shaft, combined and operating substantially as set forth.

3. In a toy gun, a stock having cord-rollers hung on each side thereof, and a driver, substantially as described, and an elastic braid-covered driver-cord adapted to pass over said rollers and engaging with the driver, having a portion of its surface coated with an elastic cement, combined and operating substantially as set forth.

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Witnesses:
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