No. 649,914. Patented May 22, 1900.

G. E. DELMORE & O. W. LEE.

GYMNASTIC APPARATUS.

(No Model.) (Application filed May 14, 1898. Renewed Mar. 11, 1899.)

Fig. 1

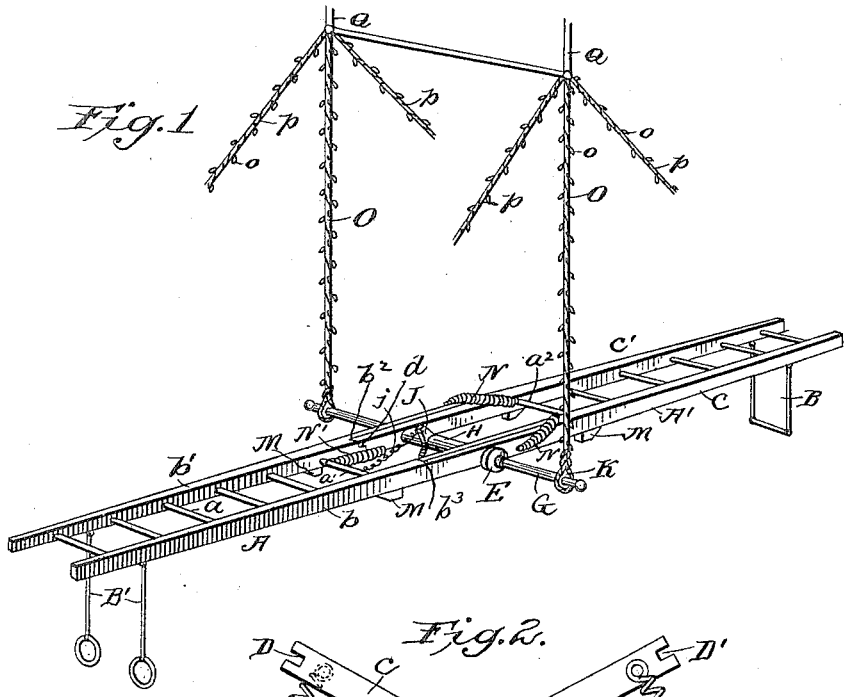


Fig. 2.

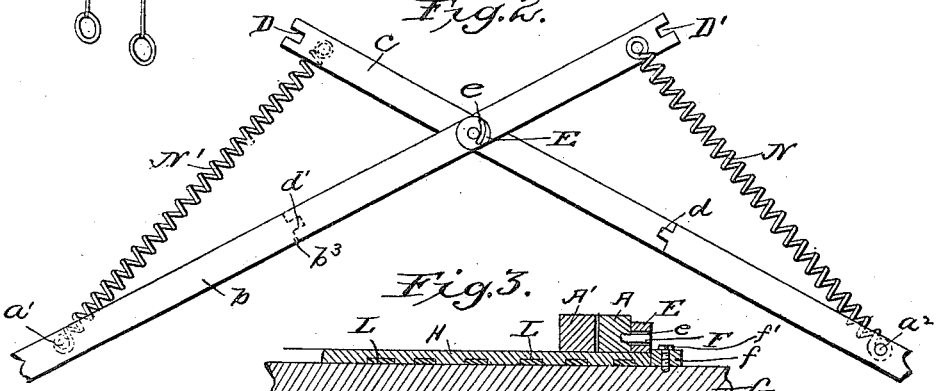


Fig. 3.

Fig. 4.

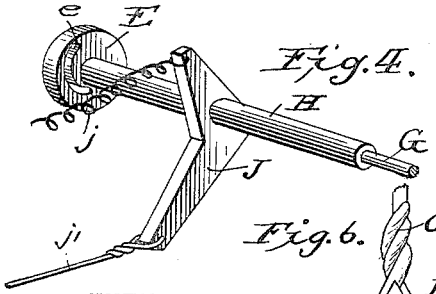


Fig. 5

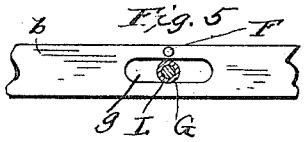
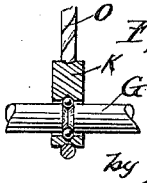


Fig. 6.

Fig. 7.



WITNESSES

E. E. Masson

L. D. Heinrichs

INVENTORS

George E. Delmore,

Oliver W. Lee.

by A. B. Diggs Attorney

UNITED STATES PATENT OFFICE.

GEORGE E. DELMORE, OF TIPTON, IOWA, AND OLIVER W. LEE, OF GAINESVILLE, TEXAS.

GYMNASTIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 649,914, dated May 22, 1900.

Application filed May 14, 1898. Renewed March 11, 1899. Serial No. 708,770. (No model.)

To all whom it may concern:

Be it known that we, GEORGE E. DELMORE, residing at Tipton, in the county of Cedar and State of Iowa, and OLIVER W. LEE, residing at Gainesville, in the county of Cooke and State of Texas, citizens of the United States, have invented certain new and useful Improvements in Gymnastic Apparatus; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in aerial revolving ladders for gymnastic purposes for use in theaters, circus-tents, &c., and has for its objects to provide an aerial ladder composed of two sections journaled near their inner ends in elevated bearings supported by ropes and having at the outer ends of each section a trapeze and swinging rings affixed thereto for the performance of gymnastic feats, and also to provide means for disengaging said ladders, while gymnastic feats are being performed thereon, with safety to the performers. We attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of our aerial revolving ladder constructed in accordance with our invention. Fig. 2 represents a side elevation of the breaking portion of the same. Fig. 3 represents a cross-section of the journaled portion of the device. Fig. 4 is a perspective view of the lever and cam. Fig. 5 is a side elevation of a portion of the slot-bearing of one side of the ladder. Fig. 6 is a side elevation of the journal for the trapeze-shaft, and Fig. 7 a longitudinal section of the same.

In said drawings, A and A′ represent ladders, constructed of any suitable material, preferably metal, having the ordinary rounds or steps *a*. Between the first and second round or step of the outer extreme end of ladder A′ there is suspended a trapeze-shaft B, and between the first and second round or step of the outer extreme end of the ladder A there are suspended two swinging rings B′. Said rings and trapeze may be secured to the ladder in any well-known manner, preferably by means of hooks and eyes of the usual construction.

The standards *b* and *b′* of the ladder A have offsets b^2 and b^3 on their inner sides, from which project tongues *d′*, that engage with grooves D in the ends of standards *c* and *c′*, while standards *c* and *c′* have offsets on their outer sides provided with tongues *d* for engagement with grooves D′ in the ends of standards *b* and *b′*, which hold the ladders in a horizontal position. Standards *b b′ c c′* are journaled on a tube H, said tubing having brass journal-bearings L set therein for the purpose of facilitating easy revolution on trapeze-shaft G. Standards *b* and *b′* are provided with slots *g* for the free passage of the tube H. Above slot *g* and adjacent to the upper edges of standards *b* and *b′* there is a pin F, projecting outwardly, of sufficient length to move in a slot *e* in the eccentric E for the purpose of disengaging the two ladders, the whole being held in position by a collar *f*, which in turn is held securely in place by a set-screw *f′*. This collar *f* prevents any sidewise movement of the apparatus on trapeze-shaft G. The tube H has an L-shaped lever J affixed thereto about midway of its length for the purpose of disengaging the ladders. Affixed to the upper end of said lever J there is a spiral spring *j*, whose opposite end is secured to the first round *a′* of ladder A nearest the tubing H for the purpose of more securely holding the two ladders into engagement with each other's tongues and grooves by forcing eccentric E around and pressing against the pin F in slot *e*, and thereby pressing forward standards *b* and *b′* into engagement with standards *c* and *c′*. Secured to the lower end of lever J is a cord or rope *j′* for the purpose of disengaging ladders A and A′. By pulling on rope *j′* eccentric E is revolved, thereby pulling on pin F of standards *b* and *b′*, which necessarily forces back standards *b* and *b′*, which are slotted at *g* and move on tubing H, thus releasing the ladders, which fall to the position occupied in Fig. 2.

N and N′ are spiral springs for the purpose of preventing too much jar to the apparatus when the two are disengaged. The springs N are secured to the first round or step a^2 of ladder A, pass across the top of standards *c* and *c′*, and then secured to the outside of grooved end D′ of standards *b* and *b′*. Springs N′ are secured to the first round *a′* of ladder A and to grooved ends of standards *c* and *c′*.

M represents bumpers secured to the under side of standards *b b' c c'* to prevent the two ladders A and A' from coming together after they have been disengaged, thereby injuring some part of the apparatus or the performers thereon.

O represents the supporting-ropes for the trapeze, which are illuminated by incandescent electric lights *o*. The lower ends of these ropes are wrapped around their ball-bearing journals K, which journals K are in turn secured to trapeze-shaft G. At the upper ends of rope O there is a shaft P, which is held rigidly in position by guy-ropes *p*, secured to said shaft in any well-known manner. They are also supplied with electric lights.

Q represents the supporting-ropes for the entire apparatus, secured to the ceiling or any convenient place in any well-known manner.

Having now fully described our invention, we claim—

1. As a gymnastic apparatus, a revolving ladder formed of two sections journaled upon a swinging trapeze-shaft and having means for disengaging the sections at a predetermined moment.

2. As a gymnastic apparatus, a revolving ladder consisting of two halves journaled upon a swinging trapeze-shaft, means for bringing said halves coincident thereby forming a compound ladder, and means for disengaging said halves and causing them to suddenly drop suspended from said shaft.

3. In a gymnastic apparatus, a revolving ladder comprising two interlocking ladder-sections journaled upon a central supporting-shaft and eccentric means for disengaging said sections at a predetermined moment.

4. In a gymnastic apparatus, a revolving ladder comprising two ladder-sections normally united endwise by tongues and grooves, a supporting-shaft upon which said sections are journaled, and eccentric means for releasing said sections.

5. A gymnastic apparatus comprising two ladder-sections united end to end to temporarily form a single ladder and journaled upon a swinging trapeze-shaft, an operating means for engaging and disengaging said ladder-sections, and interposed elastic devices to break the fall of said ladder-sections when disengaged.

6. In a gymnastic apparatus, a revolving ladder having a sliding ladder-section and an auxiliary section normally united by tongues and grooves, a supporting-shaft upon which said ladder is journaled, an eccentric for engaging and disengaging said sliding section, and interposed springs, substantially as described.

7. In a gymnastic apparatus, a revolving ladder comprising two ladder-sections, one of which is slotted, normally united by tongues and grooves, a supporting-shaft upon which said sections are journaled, an eccentric for engaging and disengaging said sections while gymnastic feats are being performed thereon, and interposed springs adapted and arranged to break the fall of said ladder-sections, substantially as described.

8. The combination of a revolving ladder having a sliding ladder-section, and an auxiliary ladder-section normally united by tongues and grooves, a supporting-shaft, a tube sleeved upon said shaft upon which said ladder is journaled, an operating-lever, an eccentric connected with the sliding ladder-section to bring the same into or out of engagement with the other section, and interposed springs adapted and arranged to break the fall of said ladder-sections, substantially as described.

9. A revoluble swinging trapeze-ladder, composed of a sliding ladder-section and an auxiliary ladder-section normally united by tongues and grooves in the standards of said ladder-sections, the supporting-shaft upon which said ladders are journaled, provided with ball-bearings, and eccentric means for engaging and disengaging said ladder-sections, substantially as described.

10. In a gymnastic apparatus, an aerial revolving ladder, comprising a sliding ladder-section and an auxiliary ladder-section normally united by tongues and grooves in the standards of said ladder-sections, a swinging trapeze-shaft, mounted in ball-bearings, a tube sleeved upon said shaft, upon which said ladder is journaled, an eccentric connected with the sliding ladder-section to bring the same into or out of engagement with the other section, a lever, rigid on said tube, adapted to be operated from one end of said ladder to actuate the eccentric, springs interposed between said sections, and trapeze and rings carried on either ladder-section for the performance of gymnastic feats, all substantially as described.

11. In a gymnastic apparatus, an aerial revolving ladder comprising a sliding ladder-section and an auxiliary ladder-section normally united by tongues and grooves in the standards of said ladder-sections, a swinging trapeze-shaft, ball-bearings for the same, a tube sleeved upon said shaft, an eccentric, having a slot, rigid on said tube, a pin in said sliding ladder-section adapted to engage said slot, a lever normally under tension rigidly mounted upon said tube, an operating connection between said lever and one of the ladder-sections, springs uniting said sections, and bumpers to prevent said ladders coming together when disconnected.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE E. DELMORE.
OLIVER W. LEE.

Witnesses:
WALLACE MURDOCK,
DAVID L. GITT.