

No. 848,272.

PATENTED MAR. 26, 1907.

A. J. THORNLEY.
EXERCISING MACHINE.
APPLICATION FILED JUNE 30, 1905.

2 SHEETS—SHEET 2.

Fig. 3.

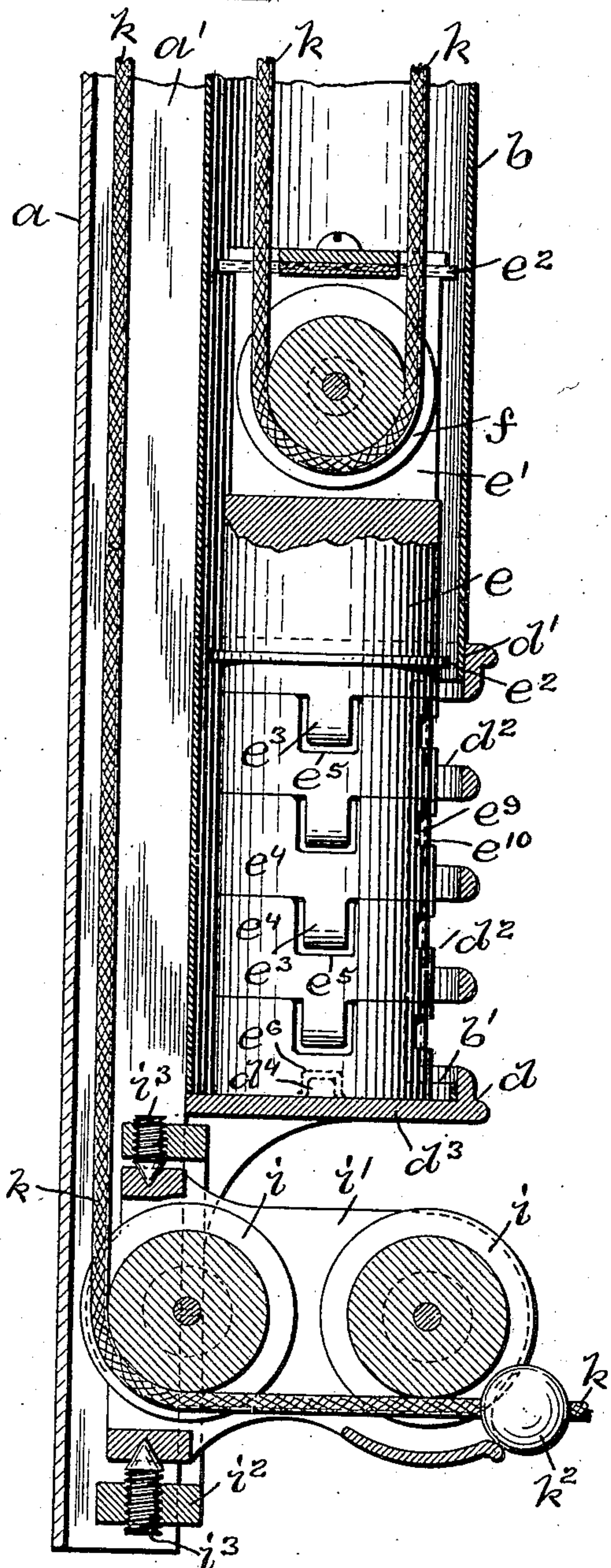


Fig. 4.

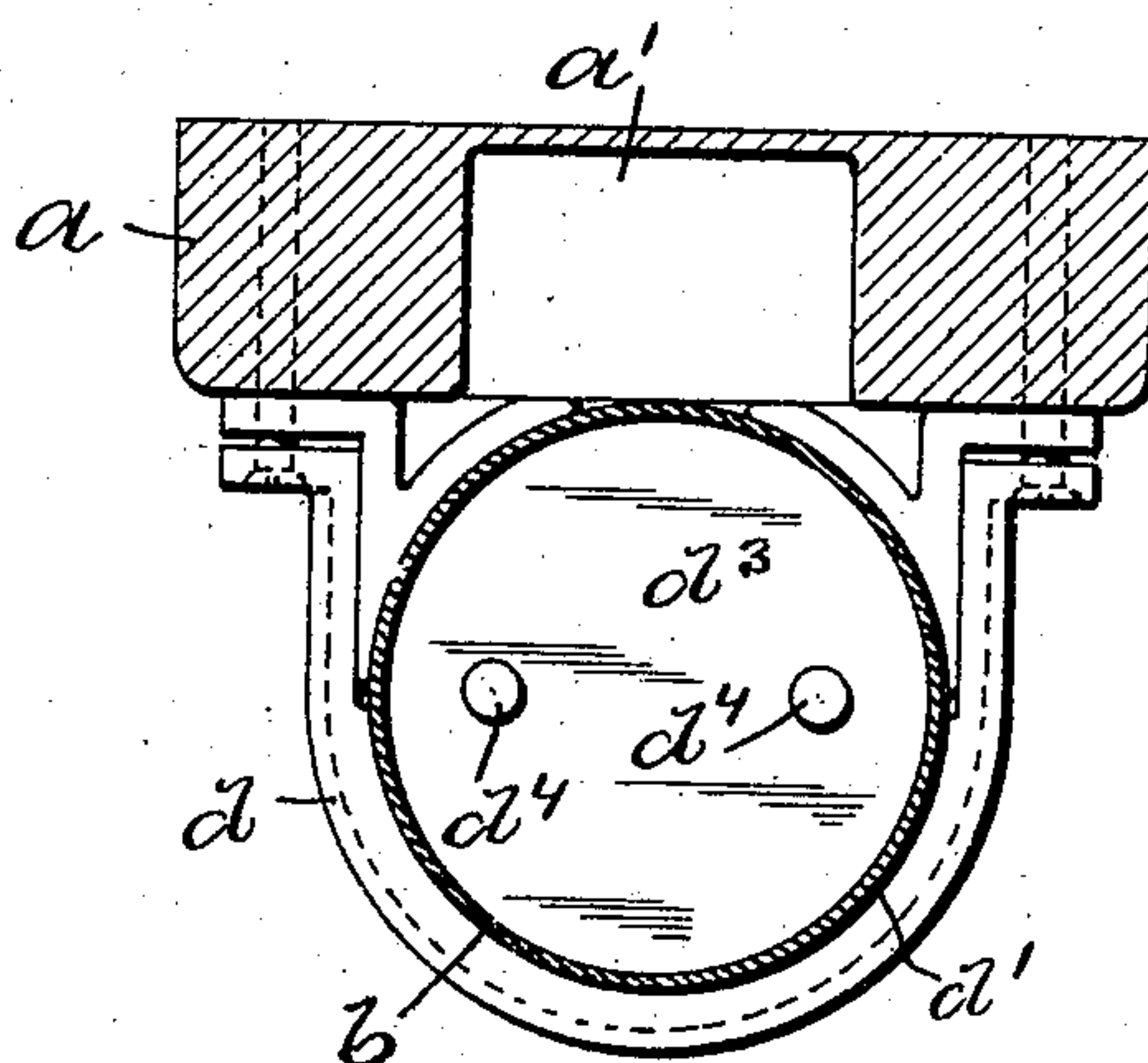


Fig. 5.

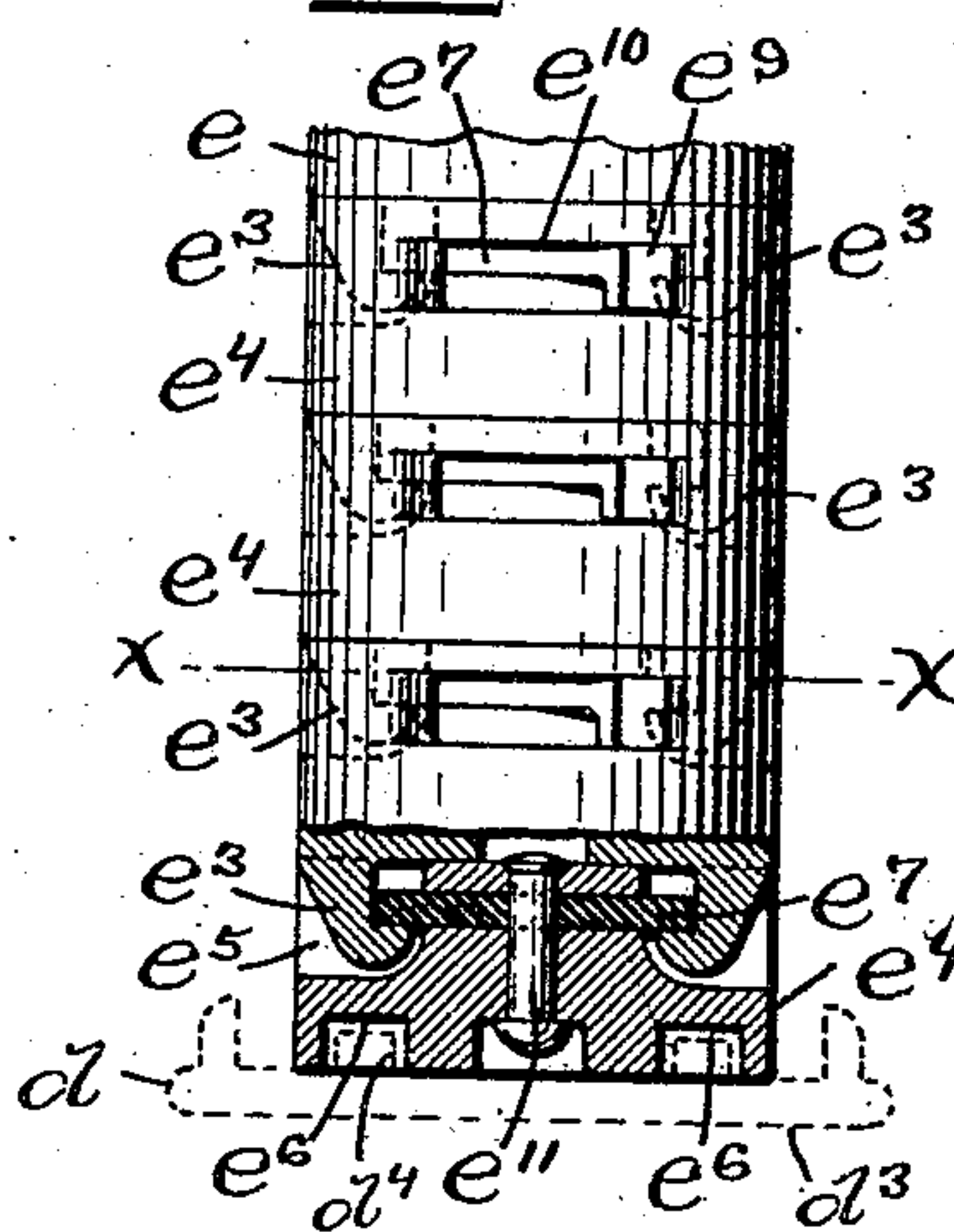
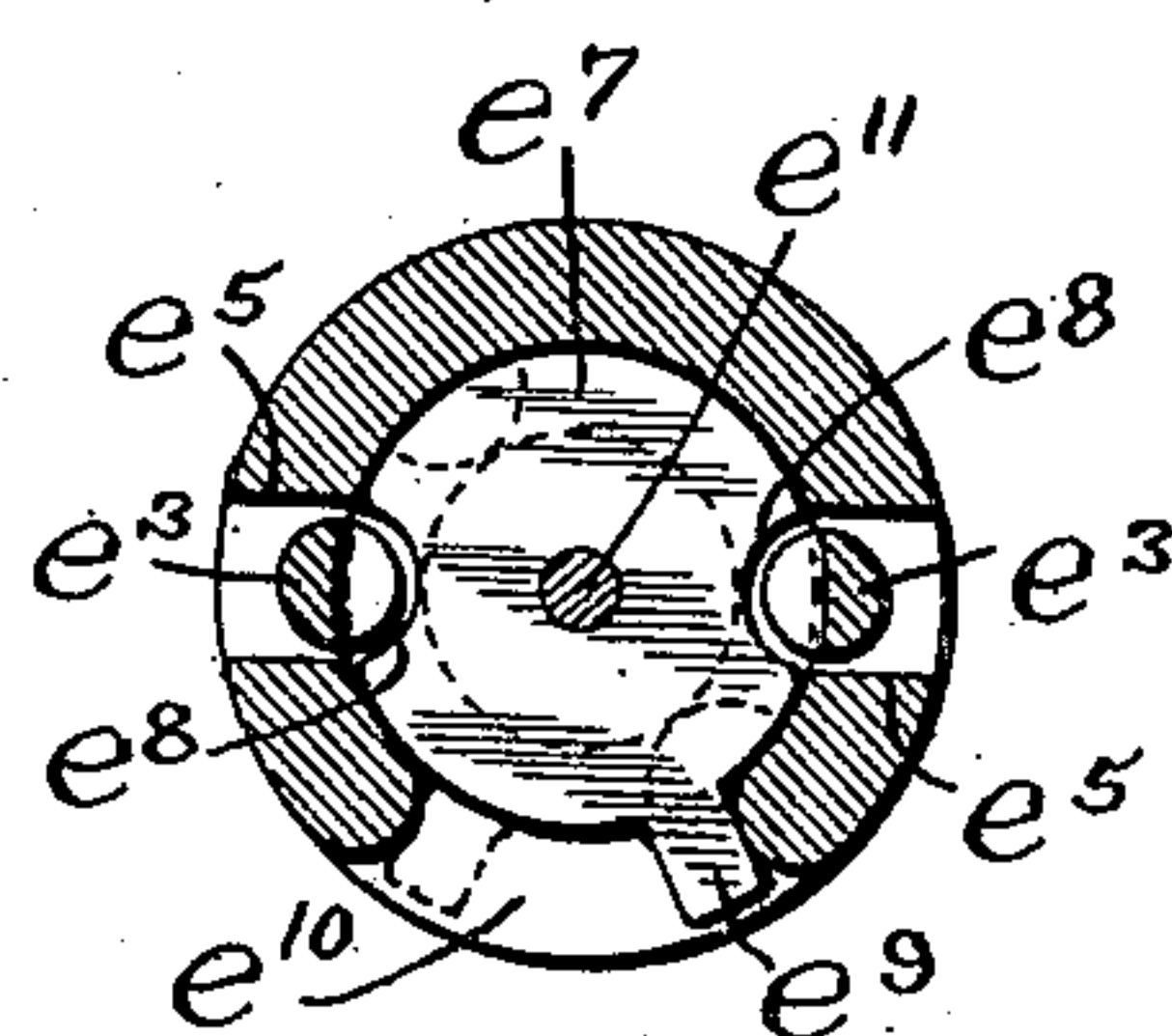


Fig. 6.



WITNESSES:

Chas. H. Luther Jr.
Ada E. Nagarty.

INVENTOR:

Albert J. Thornley
Joseph H. Miller Jr.
ATTORNEY:

UNITED STATES PATENT OFFICE.

ALBERT J. THORNLEY, OF PAWTUCKET, RHODE ISLAND.

EXERCISING-MACHINE.

No. 848,272.

Specification of Letters Patent.

Patented March 26, 1907.

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To all whom it may concern:

Be it known that I, ALBERT J. THORNLEY, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Exercising-Machines, of which the following is a specification.

This invention has reference to an improvement in gymnasium apparatus and more particularly to an improvement in exercising-machines for gymnasiums.

In exercising-machines as heretofore constructed the ways for the weight-carriage were formed of exposed vertical rods on which the weight-carriage had a vertical reciprocating movement. In the use of the machine in gymnasiums or similar places weights or other apparatus by negligence or misuse would come into contact with the guide-rods and bend or break the same, thus ruining the utility of the machine. Also the weight-carriage with its weights and mechanism for locking the weights to the carriage being exposed were liable to injury or breakage from the same or similar causes.

The object of my invention is to improve the construction of exercising-machines whereby the weight-carriage and cord are inclosed and protected from external injury by a cylindrical tube, which forming a guide or way for the weight-carriage eliminates the use of exposed vertical rods for the carriage.

My invention consists in the peculiar and novel construction of an exercising-machine comprising a wall-board having a central vertical groove, a vertical cylindrical tube, fittings at the top and bottom of the tube adapted to secure the same to the wall-board, a weight-carriage in the cylindrical tube, mechanism for removably securing the weights to the weight-carriage, a pulley on the weight-carriage, a pulley pivotally secured to the upper fitting, a pulley on the wall-board above the upper fitting, pulleys pivotally secured to the wall-board below the lower fitting, a cord connecting the several pulleys, handles and stops on the cord, and other details of construction whereby the weight-carriage and cord are protected from external injury and the use of vertical guide-rods eliminated, as will be more fully set forth hereinafter.

Figure 1 is a side view of my improved exercising-machine, showing the central portion broken away. Fig. 2 is a view of the machine looking at the front of Fig. 1 and

showing the handles broken away from the ends of the cord. Fig. 3 is an enlarged vertical sectional view of the lower portion of the machine, showing the weight-carriage inclosed in the cylindrical tube. Fig. 4 is an enlarged transverse sectional view through the cylindrical tube and wall-board with the weight-carriage removed from the tube. Fig. 5 is an enlarged detail view of the lower portion of the weight-carriage, partly in section and showing the means for detachably securing the weights; and Fig. 6 is a transverse sectional view through the weights, taken on line X X of Fig. 5, showing the locking-plate in the unlocked position in full lines and in the locked position in broken lines.

In the drawings, *a* indicates the wall-board; *b*, the vertical cylindrical tube; *c*, the top fitting; *d*, the bottom fitting; *e*, the weight-carriage; *f*, the pulley on the weight-carriage; *g*, the pulley pivotally secured to the upper fitting; *h*, the upper pulley, rotatably secured to the wall-board; *i*, the lower pulleys, pivotally secured to the wall-board; *k*, the cord; *l*, the upper handle, and *m* the lower handle, of my improved exercising-machine. The wall-board *a* has the central vertical groove *a'* for the cord *k*, as shown in Figs. 3 and 4, and is secured to the side wall of the gymnasium by screws or other means. The cylindrical tube *b* has the opening *b'* adjacent its lower end and is supported at each end in the fittings *c* and *d*, which are secured to the wall-board *a* by screws, as shown in Fig. 2. The upper fitting *c* has the flanged base *c'* adapted to receive the upper end of the tube *b* and the hollow bracket *c''*. The frame *c'''*, in which the pulley *g* is rotatably secured, is pivotally secured in the base *c'* and to the upper arm of the bracket *c''* by the pivot-screw *c''''*, as shown in Fig. 1. The lower fitting *d* has the open top *d'* adapted to receive the lower end of the tube *b*, the rectangular openings *d'' d'''* in the front and the closed bottom *d'''* supporting the lower end of the tube *b*, with the opening *b'* coinciding with the openings *d'' d'''* and having the upwardly-extending bosses *d'''' d'''''*, as shown in full lines in Fig. 4 and in broken lines in Fig. 5. The weight-carriage *e* is circular in form and has the opening *e'* adjacent its upper end, in which the pulley *f* is rotatably secured, the circular washers *e'' e'''*, constructed of leather or similar material and secured above and below the opening *e'* to the carriage *e*, and the two down-

wardly-extending hook-shaped lugs $e^3 e^3$ on the bottom of the carriage, as shown in full lines in Fig. 3 and in broken lines in Fig. 5. Each of the weights $e^4 e^4$ (except the bottom weight) has the two oppositely-disposed hook-shaped lugs $e^3 e^3$ on their under side and the coinciding openings $e^5 e^5$ in the top for the lugs, as shown in Fig. 5. The bottom weight e^4 has the two recesses $e^6 e^6$ in its under side for the bosses $d^4 d^4$ on the lower fitting d . A locking-plate e^7 , having the oppositely-disposed semicircular openings $e^8 e^8$ in its periphery and the finger-piece e^9 extending into the opening e^{10} in the weight, is pivotally secured to the weight (in a circular recess in the top of the weight) by the rivet e^{11} . By this construction one or more weights may be attached or detached from the weight-carriage by moving the finger-piece e^9 on the locking-plate e^7 through the openings $d^2 d^2$ in the lower fitting d . By moving the finger-piece to the right, as shown in full lines in Fig. 6, the openings $e^8 e^8$ coincide with the lugs $e^3 e^3$, and the lower weight is unlocked from the adjacent upper weight and held from rotation on the bottom d^3 of the lower fitting d by the bosses $d^4 d^4$ entering the recesses $e^6 e^6$ in the bottom of the weight, as shown in broken lines in Fig. 5. By moving the finger-piece to the left the periphery of the locking-plate engages with the hook-shaped end of the lugs $e^3 e^3$ and locks the weight to the next adjacent weight, as shown in full lines in Fig. 5 and in broken lines in Fig. 6, or the top weight to the bottom of the carriage. The leather washers $e^2 e^2$ on the weight-carriage e prevent the metal carriage from striking or rubbing the interior of the tube b , thus making the movement of the carriage e in the tube b as noiseless as possible.

The upper pulley h is rotatably secured to the bracket h' , which is secured to the face of the wall-board a above the pulley g by screws, as shown in Fig. 2. The lower pulleys $i i$ are rotatably secured in the frame i' , which is pivotally secured to the bracket i^2 at its rear end by the pivot-screws $i^3 i^3$, and the bracket i^2 is secured to the face of the wall-board a by screws, as shown in Fig. 2.

The cord k has the stops k' and k^2 adjacent its ends and the handles l and m secured to its ends. The cord k extends from the upper handle l over the pulley g , down through the frame c^3 and the tube b , around the pulley f on the weight-carriage, up through the tube b and the hollow bracket c^2 , over the pulley h , down through the groove a' in the wall-board a and partly around the inner pulley i , then under the outer pulley i to the lower handle m , as shown in broken lines in Fig. 1.

In the use of my improved exercising-machine the upper handle l is used for exercising the arms and chest and the lower handle m for exercising the loin and legs. In the operation of the machine by either handle a

vertical reciprocating motion is given to the weight-carriage e in the cylindrical tube b by the operation of the stops k' and k^2 on the ends of the cord k , or both handles may be used to operate the machine, and the weight-carriage e , the weights $e^4 e^4$, and the cord k are all protected from external injury or loss.

I do not wish to confine myself to the exact construction shown, as any means may be used for securing the cylindrical tube b to the wall-board a for detachably securing the weights to the weight-carriage e and for holding the pulleys g , h , and $i i$ in the operative position without materially affecting the spirit of my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an exercising-machine, a guide for a weight-carriage consisting of a vertical tube inclosing the weight-carriage and means for preventing the weight-carriage from striking or rubbing on the interior of the tube, as described.

2. In an exercising-machine, a wall-board having a vertical groove, a vertical tube, a weight-carriage in the tube, pulleys on the upper end of the tube, the weight-carriage and the wall-board, a cord engaging with the several pulleys, handles and stops on the ends of the cord, whereby the weight-carriage and the cord are protected from external injury and the tube forms a guide for the weight-carriage, as described.

3. An exercising-machine comprising a weight-carriage, a pulley on the weight-carriage, a vertical tube inclosing the weight-carriage and forming a guide for the same, pulleys above and below the vertical tube, means for supporting the vertical tube and pulleys, a cord engaging with the several pulleys and handles on the ends of the cord, whereby the weight-carriage and cord are protected from external injury, as described.

4. An exercising-machine comprising a wall-board having a vertical groove, a vertical cylindrical tube, fittings at the top and bottom of the tube adapted to secure the tube to the wall-board, a weight-carriage in the cylindrical tube, weights detachably secured to the weight-carriage, a pulley on the weight-carriage, a pulley rotatably and pivotally secured to the upper fitting, a pulley rotatably secured to the wall-board above the upper fitting, pulleys rotatably and pivotally secured to the wall-board below the lower fitting, a cord connecting the several pulleys, stops on the cord, and handles in the ends of the cord, whereby the cylindrical tube forms a guide for the weight-carriage and the weight-carriage and the cord are protected from external injury, as described.

5. In an exercising-machine, a guide for a weight-carriage consisting of a cylindrical tube b having the opening b' adjacent its

lower end, and means for supporting the tube consisting of a fitting *c* having the flanged base *c'* adapted to receive the upper end of the tube *b* and a fitting *d* having the open top *d'*, the rectangular openings *d²* *d²* in the front and the closed bottom *d³* supporting the lower end of the tube *b*, as described.

6. In an exercising-machine, a weight-carriage *e* having the opening *e'* adjacent its upper end, the pulley *f* rotatably secured to the carriage in the opening *e'*, the washers *e²* *e²* constructed of leather or similar material and secured to the weight-carriage above and below the pulley *f*, the two oppositely-disposed downwardly-extending hook-shaped lugs *e³* *e³* on the bottom of the carriage, a plurality of weights *e⁴* *e⁴* each weight having the two oppositely-disposed hook-shaped lugs *e³* *e³* on their under side, the coinciding openings *e⁵* *e⁵* in the top of the weights for the lugs *e³* *e³*, a locking-plate *e⁷* having the two oppositely-disposed semicircular openings *e⁸* *e⁸* in its periphery and the finger-piece *e⁹* extending into an opening *e¹⁰* in the weight, and

means for pivotally securing the locking-plate *e⁷* to the weight consisting of the rivets *e¹¹*, as described.

7. In an exercising-machine, the combination of a wall-board *a*, a vertical cylindrical tube *b*, a top fitting *c*, a bottom fitting *d*, a weight-carriage *e* in the tube *b*, a pulley *f* on the weight-carriage, a pulley *g* on the upper fitting, a pulley *h* on the wall-board above the upper fitting, two pulleys *i* *i* on the wall-board below the lower fitting, a cord *k* connecting the several pulleys, stops *k'* and *k²* on the cord and handles *l* and *m* secured to the ends of the cord, whereby the tube *b* forms a guide for the weight-carriage *e* and the weight-carriage *e* and the cord *k* are protected from external injury, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT J. THORNLEY.

Witnesses:

JAMES W. THORNLEY,
J. A. MILLER, Jr.