

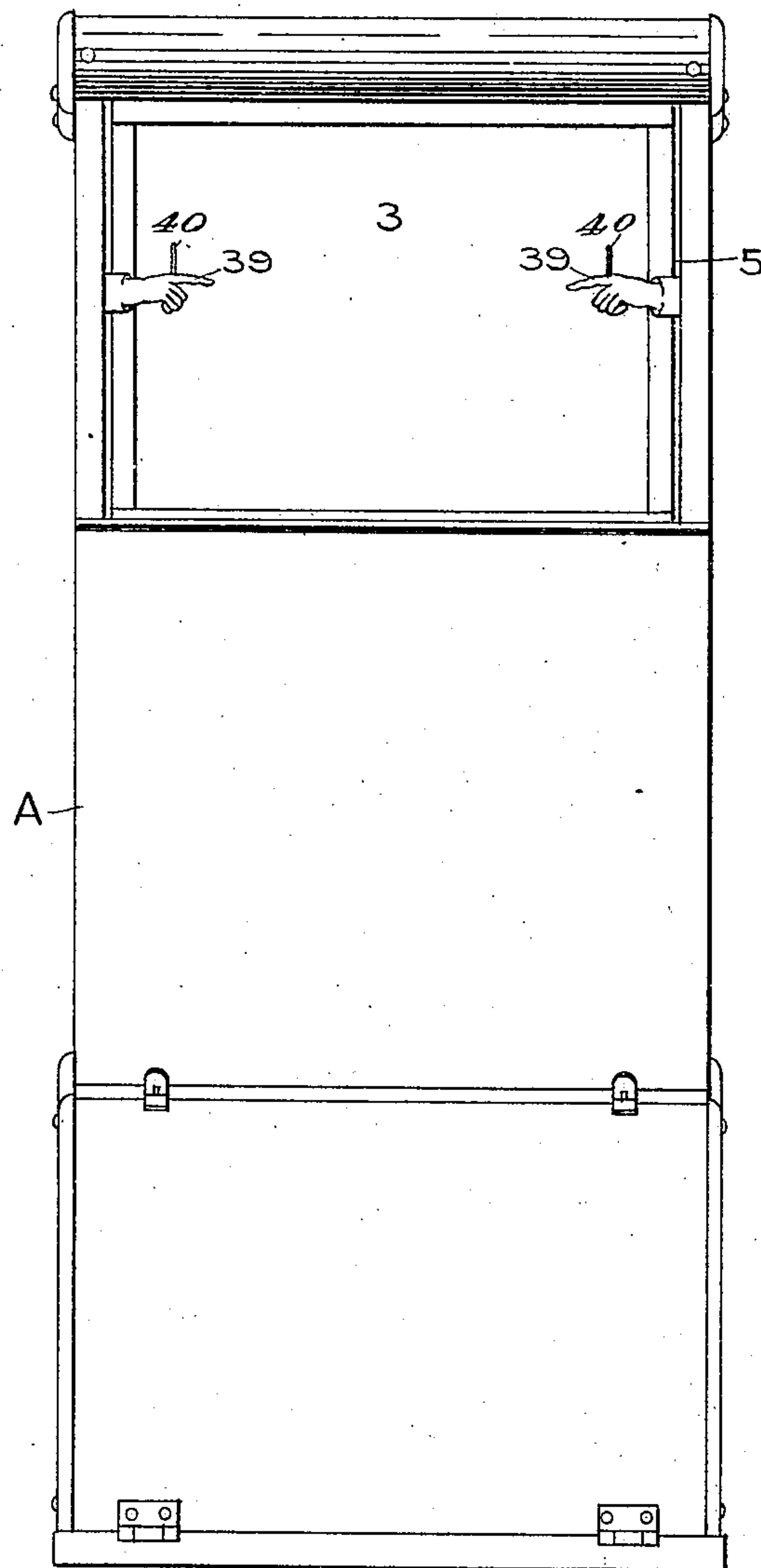
No. 876,570.

PATENTED JAN. 14, 1908.

L. J. LUNDGREN.
ADVERTISING SIGN.
APPLICATION FILED OCT. 26, 1904.

4 SHEETS—SHEET 1.

Fig. 1.



Witnesses,
W. H. Palmer
Emily F. Otis

Inventor,
Louis J. Lundgren.
By *Lothrop Johnson*
his Attorneys.

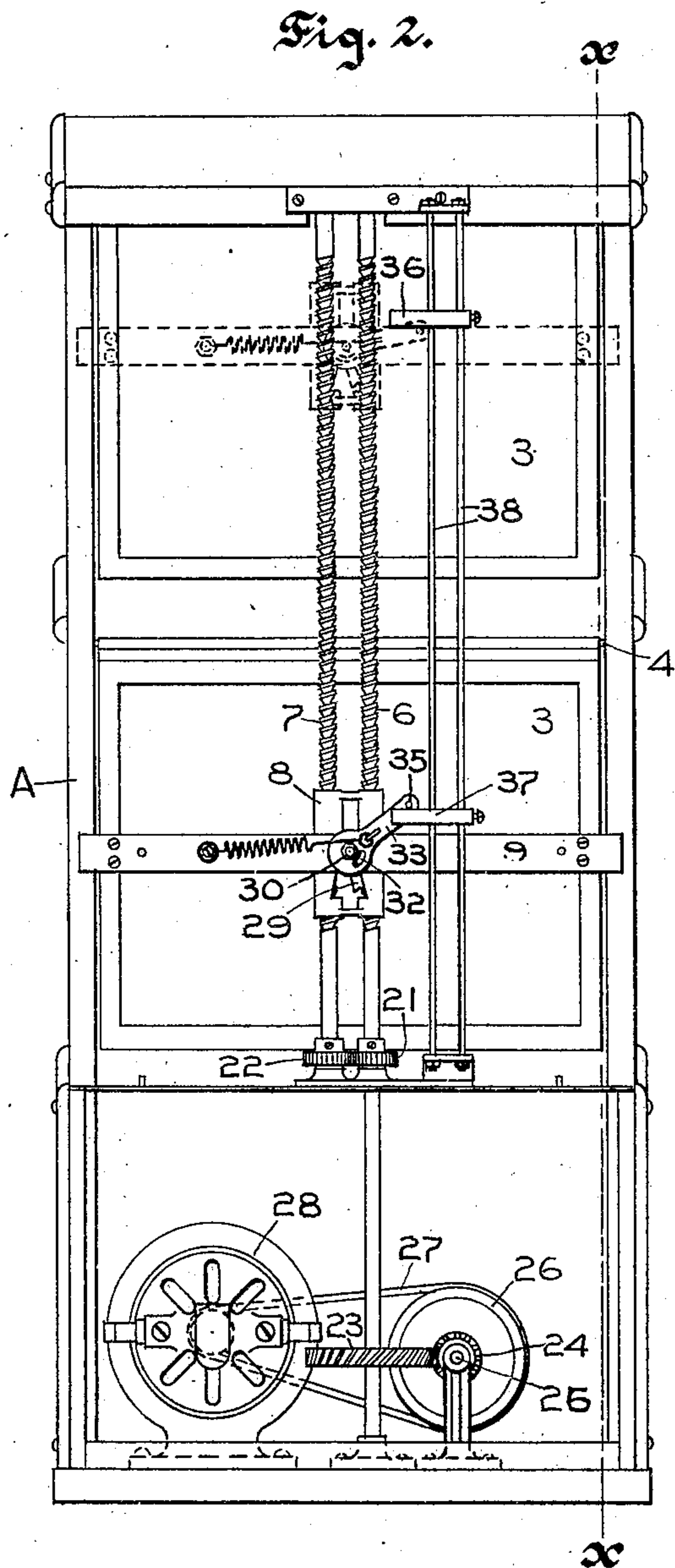
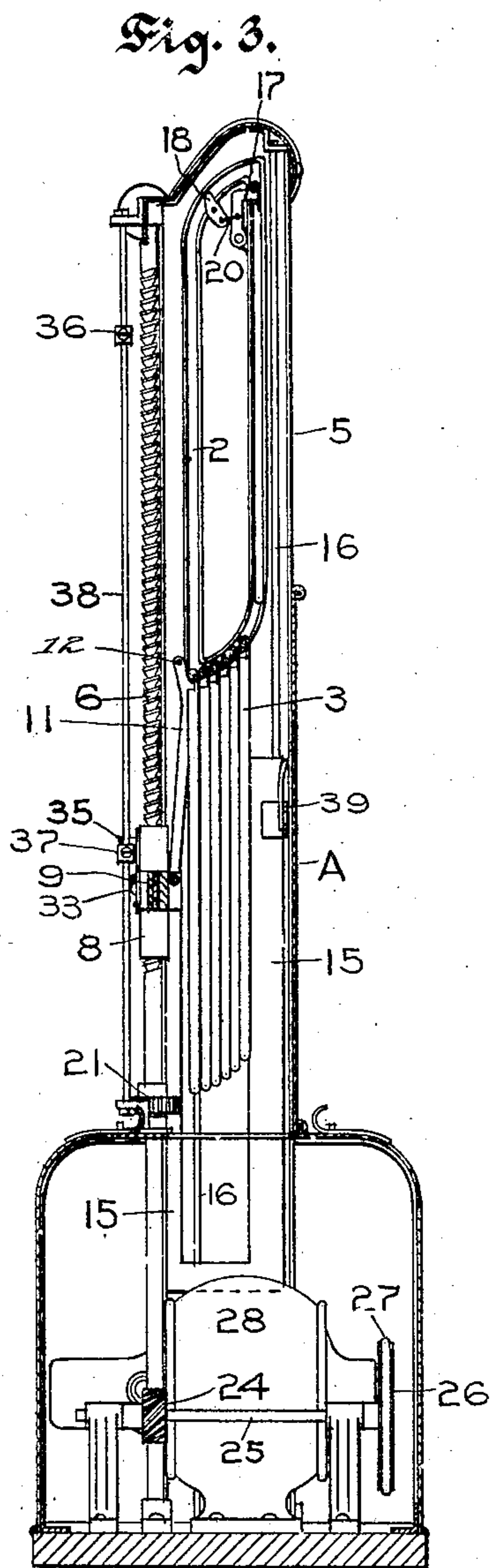
No. 876,570.

PATENTED JAN. 14, 1908.

L. J. LUNDGREN.
ADVERTISING SIGN.

APPLICATION FILED OCT. 26, 1904.

4 SHEETS—SHEET 2.



Witnesses,
W. H. Palmer.
Emily F. Otis

Inventor,
Louis J. Lundgren.
by Athrop Johnson
his Attorneys.

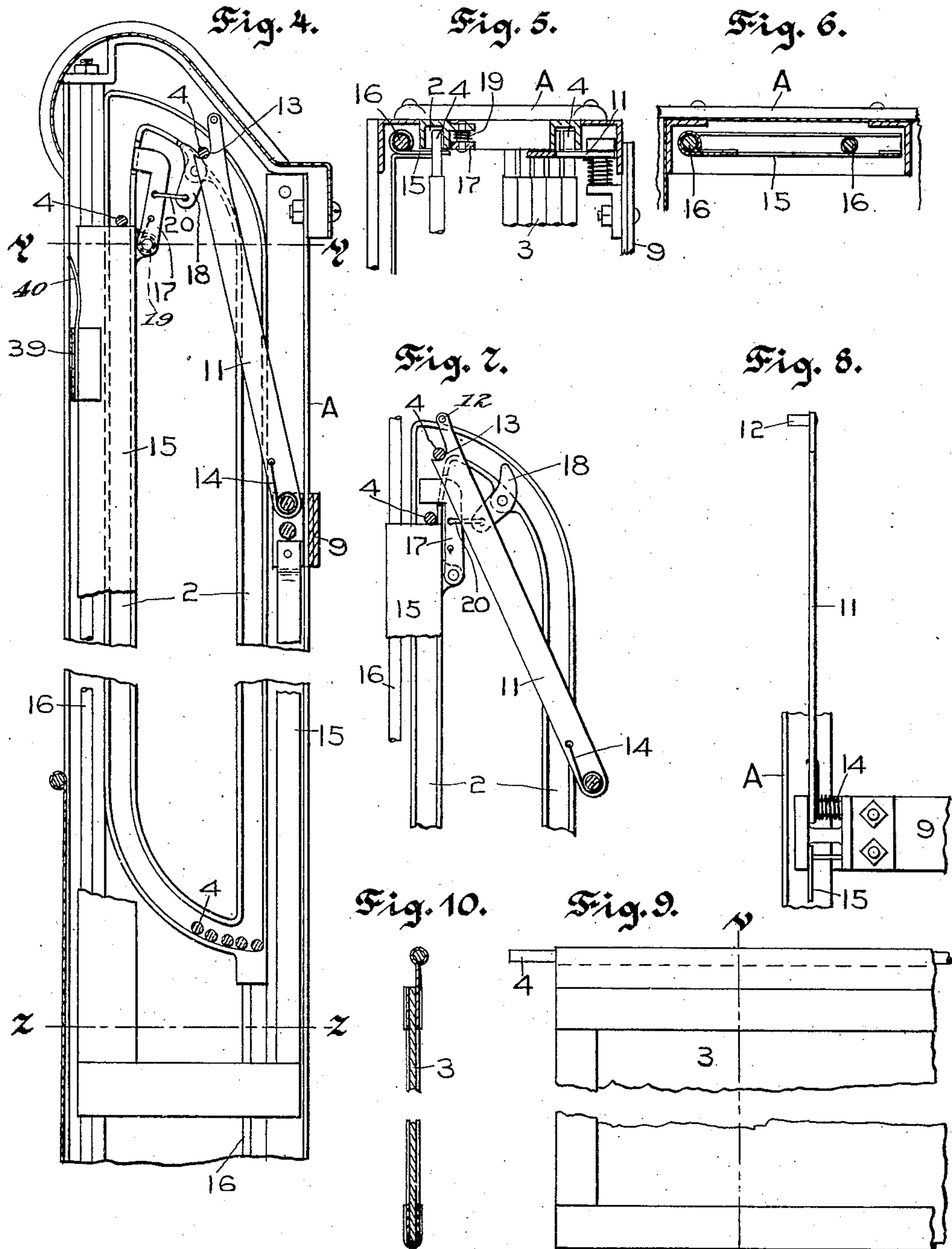
No. 876,570.

PATENTED JAN. 14, 1908.

L. J. LUNDGREN.
ADVERTISING SIGN.

APPLICATION FILED OCT. 26, 1904.

4 SHEETS—SHEET 3.



Witnesses,
W. H. Palmer
Emily F. Otis

Inventor,
Louis J. Lundgren.
by J. L. Johnson
his Attorneys.

No. 876,570.

PATENTED JAN. 14, 1908.

L. J. LUNDGREN.
ADVERTISING SIGN.

APPLICATION FILED OCT. 26, 1904.

4 SHEETS—SHEET 4

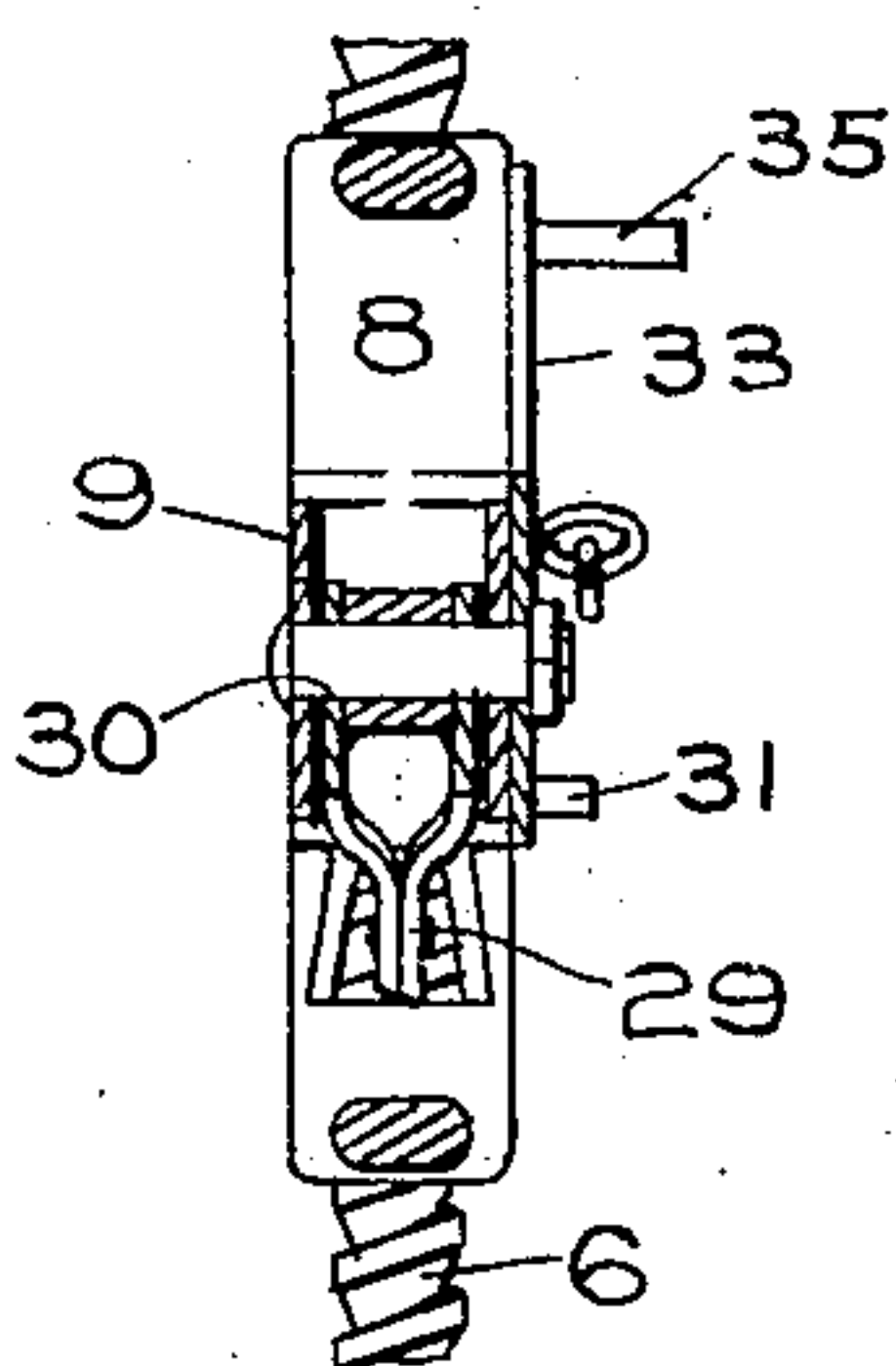
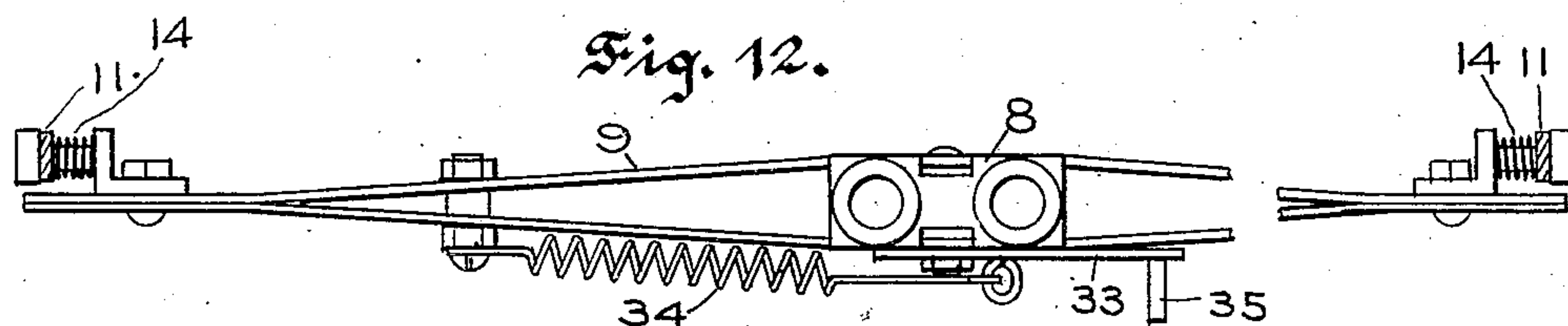
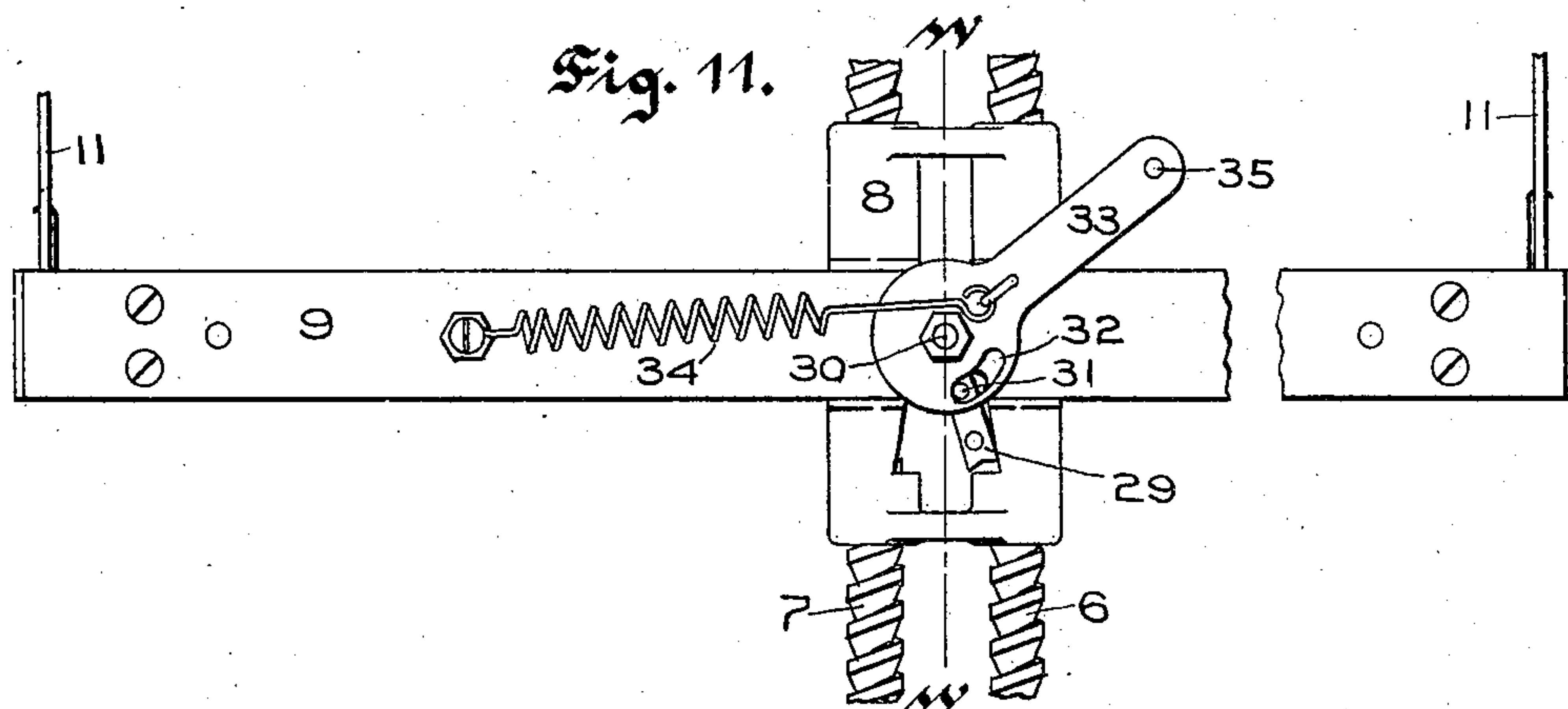


Fig. 13.

Witnesses.
W. H. Palmer.
Emily F. Otis

Inventor,
Louis J. Lundgren.
by *Lothrop Johnson*
his Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS J. LUNDGREN, OF ST. PAUL, MINNESOTA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
MECHANICAL ADVERTISING SIGN COMPANY, OF ST. PAUL, MINNESOTA, A CORPORATION
OF MINNESOTA.

ADVERTISING-SIGN.

No. 876,570.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Application filed October 26, 1904. Serial No. 230,008.

To all whom it may concern:

Be it known that I, LOUIS J. LUNDGREN, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in Advertising-Signs, of which the following is a specification.

My invention relates to improvements in advertising signs, its object being to provide new and improved means for carrying a series of signs successively into, and out of, view.

To this end my invention consists in the features of construction and combination herein-
after particularly described and claimed.

In the accompanying drawings forming part of this specification, Figure 1 is a front elevation of my invention; Fig. 2 is a rear elevation of the same; Fig. 3 is a section on line $x-x$ of Fig. 2 looking toward the left; Fig. 4 is a partial section on line $x-x$ of Fig. 2 looking toward the right and showing the moving parts in different positions; Fig. 5 is a section on line $y-y$ of Fig. 4; Fig. 6 is a section on line $z-z$ of Fig. 4; Fig. 7 is a detail of a portion of the construction shown in Fig. 4 showing the moving parts in higher positions; Fig. 8 is a detail of part of the operating mechanism; Fig. 9 is a detail of the sign-frame; Fig. 10 is a section on line $v-v$ of Fig. 9; Fig. 11 is a rear view of part of the actuating mechanism; Fig. 12 is a plan view of the same, and Fig. 13 is a section on line $w-w$ of Fig. 11.

In the drawings A represents the inclosing casing of the apparatus. In the side walls of the upper portion of the casing are arranged endless runways 2 within which runways are loosely hinged a series of display signs 3, the signs being supported in the runways by means of rods 4 extending therein. The signs are successively raised in the rear sides of the runways and lowered in the forward sides to bring them past the display opening 5 by the following described mechanism:

Slidable upon threaded rods 6 and 7 journaled in the rear of the machine, is a head 8 carrying a cross-bar 9. The ends of the cross-bar have sliding engagement with the side walls of the casing. Pivotally supported upon each end of the cross bar 9 is an upwardly extending arm 11, said arms carrying at their upper ends laterally extending rollers 12 adapted to engage the outer walls of

the runways so that the notches 13, formed in the upward ends of said arms, will aline with the runways to engage the supporting rods of the signs as hereinafter set forth. Each of said arms is normally held turned forward in coöperation with the adjacent runway by a spring 14 at its fulcrum end.

In order to support the signs and allow them to slowly descend in the forward sides of the runways, I provide a bracket 15 extending downwardly upon the ends of the cross-bar 9 and slidable upon vertical rods 16, supported upon the side walls of the casing. The forward sides of the brackets stand alongside the forward sides of the runways, as illustrated in Fig. 4, to support the supporting rod of the descending sign.

In order to hold one sign at the tops of the runways while other signs are being carried into, and out of, view, I provide in connection with the upper end of each runway dogs 17 and 18. Each dog 17 is pivotally supported so that its free end will extend into the forward side of the runway, the adjacent dog 18 being so pivotally supported that its free end will extend into the rear side of the runway, as shown in Fig. 7. The dog 17 is provided with a controlling spring 19 and is connected with the lower end of the dog 18 by a link 20 so that the turning of the free end of the dog 18 out of the runway will similarly turn the dog 17 through the medium of the link 20. In order to raise and lower the carriage-head 8 with its connected parts upon the threaded rods 6 and 7, said rods are oppositely actuated by means of the intermeshing pinions 21 and 22 mounted upon the lower unthreaded end-portions of the rods 6 and 7 respectively. The rod 6 extends into the lower portion of the casing and carries upon its lower end a skew-wheel 23 intermeshing with a similar pinion 24 upon a transverse shaft 25. The shaft 25 carries a pulley 26 having belt connection 27 with a motor 28 adapted to be connected with a suitable source of power. In order to throw the carriage-head 8 into engagement alternately with the rods 6 and 7 to raise and lower the carriage, I provide a pawl 29 having pivotal support 30 in the head. A stud 31 carried by the pawl extends outwardly through a slotted opening 32 in the pivotally supported arm 33, the arm 33 being adapted to be held in up-turned, or down-turned, position by a

restraining spring 34. The arm 33 carries in its outer end a stud 35 adapted to engage, in the operation of the apparatus, with trips 36 and 37, supported upon vertical rods 38 arranged parallel to the threaded rods 6 and 7. Thus when the carriage reaches the lower end of the threaded rods the arm will engage with the trip 37 throwing the pawl 29 into engagement with the threaded rod 6 and when the carriage reaches the upper ends of the threaded rods the engagement of the arm with the trip 36 will turn the pawl 29 into engagement with the threaded rod 7. Thus the carriage is alternately raised and lowered upon the rods 6 and 7.

In operation, the motor being started and connected with the operating parts it will actuate the rods 6 and 7. Assuming that the parts are in the position shown in Fig. 2 this will cause the carriage, consisting of the head 8 with its connected parts, to travel upward upon the rod 6, the arms 11 engaging with the supporting rod of the rear sign and carrying the same upward in the runways. As the sign reaches the upper ends of the runways it will, by engagement with the dogs 18, turn said dogs out of the runways, as illustrated in Fig. 4, and allow the sign to be carried above the same when the dogs 17 and 18 will return into position crossing the runways so that the dogs 17 will form supports for the lifted sign. By the time this has taken place, the arm 33 will engage the trip 36 throwing the pawl 29 into engagement with the threaded rod 7 allowing the carriage to descend. When the carriage has descended it will, by engagement of the arm 33 with the trip 37, again turn the pawl 29 into engagement with the threaded rod 6 raising the carriage to lift the next sign upward in the runways. When the sign now being lifted is raised high enough in the runways to turn the dogs 17 and 18 out of said runways, the sign which has been supported upon the dogs 17 will, upon its being released from said dogs, drop upon the bracket 15, as shown in Fig. 4, so that when the sign actuating mechanism again lowers, it will allow said released sign to descend upon the brackets 15 to the bottom of the runways. It thus will be evident that as long as the parts are kept in operation, the signs will be successively raised and lowered in the runways and one sign will be supported in the top of the runways by the dogs 17, while the other signs are being carried into, and out of, display position. The brackets 15 preferably carry fingers 39 to call attention to the wording on the signs.

Strips 40 extend upwardly from the fingers 39 to assist in guiding the signs.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. The combination with a casing, of vertical runways arranged in the sides thereof,

a series of signs loosely supported in said runways, means for raising and lowering said signs consisting of a slidably supported carriage, means for alternately raising and lowering said carriage, and means carried by said carriage for engaging with said signs to raise and lower the same in said runways.

2. The combination with a casing, of a series of signs loosely supported therein, means for successively raising and lowering said signs in said casing consisting of a vertically slidable carriage, means for alternately raising and lowering said carriage, means carried by said carriage for successively engaging with said signs to raise the same in said casing, means for supporting one sign at a time in the top of said casing, and means carried by said carriage for lowering said supported sign to normal position upon the raising of a succeeding sign.

3. The combination with a casing, of a series of signs loosely supported therein, means for successively raising and lowering said signs consisting of a vertically slidable carriage, vertical threaded rods arranged in connection with said carriage, means for oppositely rotating said rods, a pawl carried by said carriage, tripping mechanism for throwing said pawl into engagement alternately with said rods when in raised or lowered position, arms carried by said carriage to engage with said signs and raise the same in the upward movement of the carriage, means for supporting each sign in raised position, means for releasing said supported sign and means carried by said carriage for lowering the same when the next sign is carried to raised position.

4. The combination with a casing, of vertical runways in the sides thereof, a series of signs loosely supported in said runways, means for raising and lowering said signs consisting of a pair of threaded vertical rods, means for oppositely rotating said rods, a carriage slidable upon said rods, a pawl carried by said carriage, tripping mechanism for turning said pawl alternately into engagement with said rods when said carriage is in raised or lowered position, arms carried by said carriage for engaging with said signs to raise the same, means for supporting each sign in raised position, and means carried by said carriage for receiving said raised sign and lowering the same when the next sign is raised.

5. The combination with a casing, and endless runways in the sides thereof, of a series of signs provided with projections extending into said runways, means for raising and lowering said signs consisting of a pair of threaded vertical rods, means for oppositely rotating said rods, a carriage slidable upon said rods, a pawl carried by said carriage, tripping mechanism for throwing said pawl into engagement alternately with said

rods when the carriage is in raised or lowered position, arms carried by said carriage to engage with the projections of said signs successively to raise the same, dogs arranged to engage with and hold each raised sign in supported position until the next sign is raised, and means carried by said carriage for gradually lowering said supported sign when released.

10 6. The combination with a casing, of endless side runways therein, a series of unconnected signs provided with projections extending into said runways, means for raising and lowering said signs consisting of a pair

15 of threaded vertical rods, means for oppositely rotating said rods, a carriage slidable upon said rods, a pawl carried by said carriage, a spring controlled tripping lever engaging with said pawl, trips arranged to en-

gage with said lever when in raised or lowered position to turn said pawl into engagement alternately with said rods, pivotally supported arms carried by said carriage in position to engage with the projections of said signs successively to raise the same in said runways, dogs arranged in connection with the upper ends of said runways in position to support each of said signs in raised position until a succeeding sign is raised, and means carried by said carriage for receiving the supported sign when released to lower the same in said runways.

In testimony whereof I affix my signature in presence of two witnesses.

LOUIS J. LUNDGREN.

Witnesses:

H. S. JOHNSON,
EMILY F. OTIS.