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(54) Sequential multiposter exhibitor

(57) This invention refers to a Sequential Multiposter Exhibitor, similar in appearance to another models, but that improve to these in the following aspects: Lower manufacturing price; reliability; ease of maintenance; and their optimization of proportions, that is, the relationship between the poster shown area and the dimensions of the exhibitor case.

Their principal novelty resides, in that the spools (11) (figs. 1a and 1b) between those flows a flexible support-band (50) in which the posters are fixed, has coupled directly to a tangencial type gearbox-motoreductors (30), as well as in the procedure employed in order to permit that both motoreductors shafts; due their irreversibility characteristic; can turn to the appropiate speed to their respective instantaneous winding diameter, maintaining tense the support-band either during the displacement and the show pauses.

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Description

This invention refers to sequential multiposter exhibitor of posters, similar in appearance to spanish Utility Model that the same author registered in date 12-dec-92 with the number U9203652, but that improve to the first one in the following aspects; lower manufacturing price, reliability, ease of maintenance and their optimization dimensions; that is, the relationship between the poster shown area and the dimensions of the exhibitor case. Their principal novelty resides, in that the spools (11) between those flows a flexible support-band (50) in which the posters are fixed, has coupled directly to a tangential type motoreductors (30), as well as in the procedure employed in order to permit that both motoreductors shafts; due their irreversibility characteristic, can tum to the appropriate speed to their instantaneous winding diameter, maintaining tense the support-band either during the displacemen and the stops.

STATE OF THE ART

There are many multicartel exhibitors in the market, that are similar than the present, the majority has common elements.

The external appearance of these exhibitors is essentially a parallelepiped case, that in one of their faces has a window in which shows the posters in a sequentially way. This case is a chasis for itself, that houses the main mechanims; or houses an independent chasis that carry the mechanism. The main commonly mechanisms that constitute them are:

- Two parallel cylinders that, located in opposed sides of its referred window, that acts as spools in which a flexible material (normally translucid or transparent) support-band roll ups.
- A motorized mechanism that makes turn the mentioned spools so that the support-band is displaced exhibiting the posters.
- A government system, normally electronic system that, detecting some marks in the referred porta-posters band, makes that each poster stops centered in the exhibition window during a predetermined time.
- Optionally, some fluorescent lamps retroilluminates the band in order to get a greater visual impact in drop environmental illumination conditions.

When the band is advancing and effecting the corresponding stop, behind the exhibition window, and the last poster is reached, the govemment system orders to the driving system change the band direction, and when the other end last poster is reached, it stops the band and repeats the cycle.

ACTUAL SYSTEMS INCONVENIENTS

According to the author opinion, the existent multiposter systems in the market has several inconvenients, mainly in the following aspects:

- Its low relationship of exhibited image width versus total case width.
- Its posters fixing systems to the band are quite complicated or expensive.
- Its rigid exhibited posters program that not permit, for example, change the program depending of hours timetables, feast days, etc...
- Its mechanical systems for drive the band is expensive, noisy, complicated or height wastelfuly.

DRAWINGS

- The figs.1a 1b shows, in elevation and sectioned plant respectively, a simplified elements disposition that constitute a single window version exhibitor.

- The fig.2 shows a telescopic assembly realization example, in which the spool's lids spins, in the opposed side to motor.

- The fig.3 shows the drive removable connection system between each spool with its motoreductor.

- The fig.4 squematically shows the elementary electric circuit that controls the tangential motorreductors in order to avoid mechanims jams or blocks, and maintaining tense the porta-posters band.

- The fig.5 shows the porta-posters band, and the stop marks that are different either, in first or last poster.

- The last figure 6a, 6b, 6c 6d shows squematically another execution form in sectioned plant, for more than one exhibition windows. The figure 6a also is employed in order to illustrate the spools and exhibition windows for optimizing the useful exhibition width in relationship to the total case width.

Claims

1. Secuencial Multiposter Exhibitor, compound essentially by a case (10) that at least one of its face has a window through which posters are exhibited and, in their interior provides two motorized cylinders (11a and 11b), one to each side of said window, in those are fixed and rolled both ends of a flexible and translucid support-band (50) in which the posters to exhibit are fixed in order to be retroiluminated by means fluorescent lamps or similar (15), and the referred band has "detention marks" (S1-Sn) fixed or

printed in one of its longitudinal free margin, in such away that every time the poster is centered in the exhibition window, that marks confronts with a stop-marks sensor (41) that sends their signal to a "electronic controller" (40) that, if proceed produce the support-band detention a predeterminated time preset in a switch-bank, memory or appropriate register, characterized because, both support-band spools (11a, 11b) are coupled firmly by means flexible silent-block type joins, belts, or any other method, that avoids the noises transmission from the tangential type motoreductor shaft; that is to say, by having coupled a tangential motoreductor (30a, 30b) to each band spool.

2. Secuential Multiposter Exhibitor, characterized, according to the previous claim, because, in order to permit a fast and easy spools change; and consequently all posters fixed in the referred support-band; the spools has on one of its external-face lid (13a, 13b) center a not-circular shape cavity; like for example polygonal-shape; that has fit-embedded a rubber or other elestomero piece (33) that avoids the noise transmission, and that repeat in minor size and depth the same or another not-circular shape in order to receive the motoreductor (30a, 30b) driving torque, by means a male or complementary piece (34), that has the same geometric-shape cavity on the tangential motoreductor output shaft (35); and also characterized because; in order to permit the referred spool lid be decoupled from the tangential motorreductor shaft, but maintaining during their normal operation said elements (lid and tangential motoreductor) coupled without looseness; on the opposite spool lid external face, is embedded a ball-bearing (24), which central hole is fitted into a cylindric pusher (22), and in order to facilitate their introduction or extraction with an only hand without breaks posibility, the referred pusher are finished in a semisphere shape (22e); being this pusher a spring-telescopic assembly part (20) that complete a ball-bearing shaft function which permits tum without frictions, still in case of that the apparatus should operate with the spools in horizontal position.

3. Secuenctial Multiposter Exhibitor, characterized according to previous claims, because the electronic controller (40) that govems the two tangential motoreductors has a two differents voltages power suply, or two power suplies with different voltages (+V, +VV); the first one, of minor voltage (+V), is applied to the tangential motoreductor that must give up support-band, and that must be able to give all the current that the tangential motoreductor requires in order to move their corresponding spool to the appropriate speed at its nominal torque; and the second one (+VV), is applied to the tangential motorreductor that must collect the support-band and, that being of greater voltage that the first one, has a current limitator (46) in order that the spool associated to this tangential motoreductor, may be able develop more speed but with less torque, emulating so the cuasi-constant tension virtual spring effect.

4. Secuenctial Multiposter Exhibitor, characterized according to previous claims, because in order to permit to the controller (40) identify in any moment the support-band ends, avoiding desincronizations but using a unique stop-marks sensor (41), the first (S1) or last (Sn) poster marks either in the beggining or end of the support-band, are compound for three near marks, two of them has the same size that those ones that indicate the intermediate stops, and the more extreme ones in each head or line group at support-band has greater longitude; being the central of the three ones in each group which indicates that the poster is exactly centered.

5. Secuenctial Multiposter Exhibitor, characterized according to previous claims, because; due that the unfolds differences between both elements (support-band and the posters fixed on it) when they are in flat position behind the exhibition window, or roled in spools; the posters become unstuck, formed irregularities, or roling eccentricities in the spools; to avoid this, the posters are fixed to the support-band, without band desmounting necessity; by means of the following procedure:

1- Fix the poster to the support-band by one of their transversal or perpendicular sides to the support-band direction, by means of the appropriate single face adhesive tape.
2- Advance the support-band, by means of the controller buttons (42), or manually if the tangential motoreductors has frictions clutchs; the spool is made roll in their winding direction, until the poster free end is cuasi totally rolled.
3- Using single face adhesive tape, fix the referred poster free end.

6. Secuenctial Multiposter Exhibitor, characterized according to previous claims, because the case could have a posterior window that shows a static poster fixed behind that posterior window (14b), taking advantage for its illumination the same fluorescent lamps (15) used for the main front window, or characterized by could have two or more windows (14a, 14b, 14c) for showing simultaneously changing posters from the same support-band; these windows are dispose one beside to other, or at other possible exhibitior case faces for which, the support-band (50), instead of direct from one to another motorized spool (11a, 11b), is obliged to go behind the referred windows thanks to the adequate dispo-

sition of one or more not-motorized rollers (61) that mades the support-band guide functions.

7. Secuenctial Multiposter Exhibitor, characterized according to previous claims, because in order to avoid the use of support-band aproximation guides to the frontal window, and to obtain the maximal useful of retroilluminated exhibition window width (6a) in relationship with the total case width; the window projection (especially in the annexed sides to the motorized spool) invade approximately until 1/3 of spool diameter; to make this possible the spools are located very close to the front exhibition window, and its diameter is such a large that is hardly appreciate parallelness difference between the support-band in relationship with the front window.

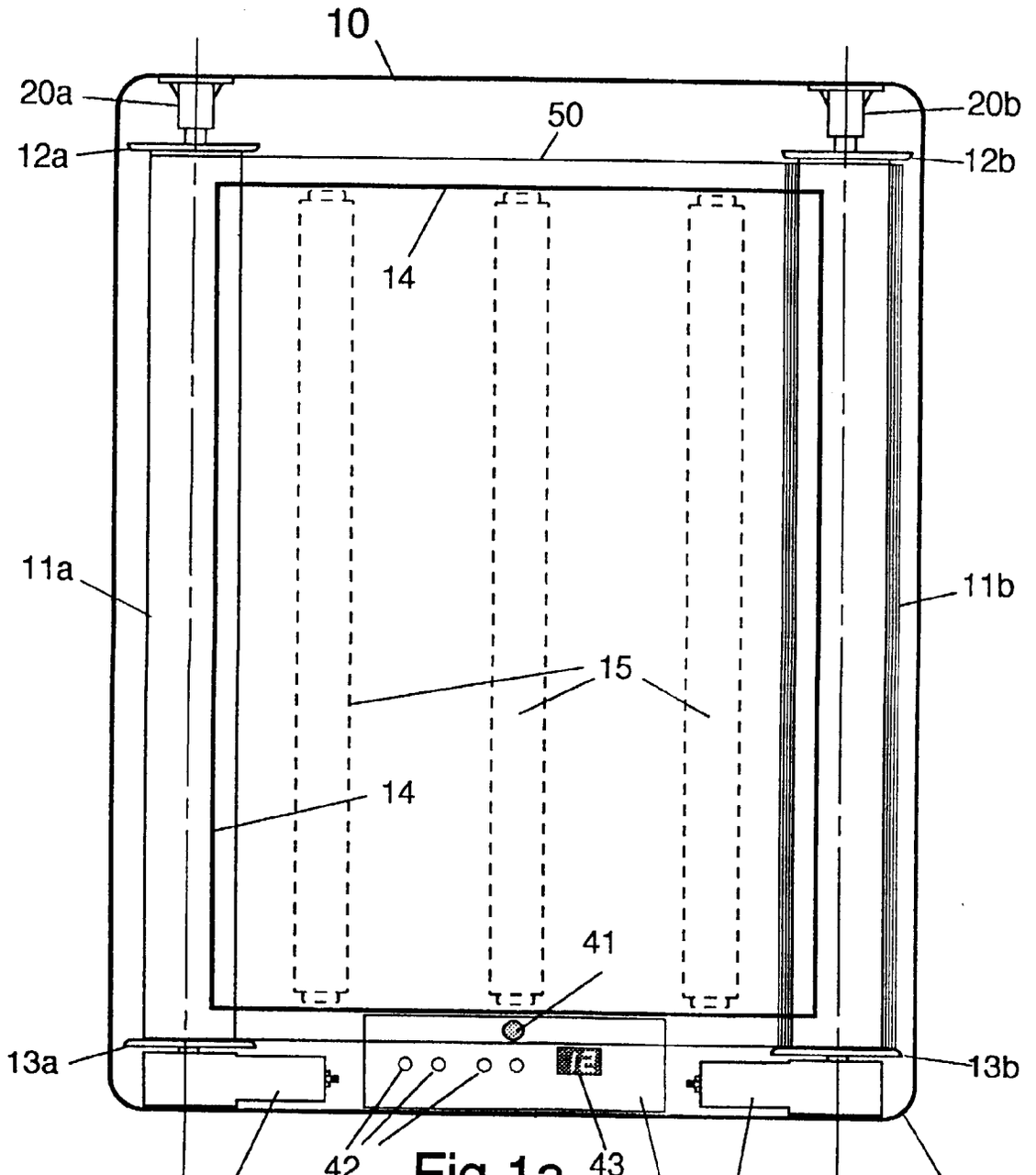

10
20a
20b
50
12a
12b
14
11a
11b
15
14
41
13a
13b
42
43

Fig.1a

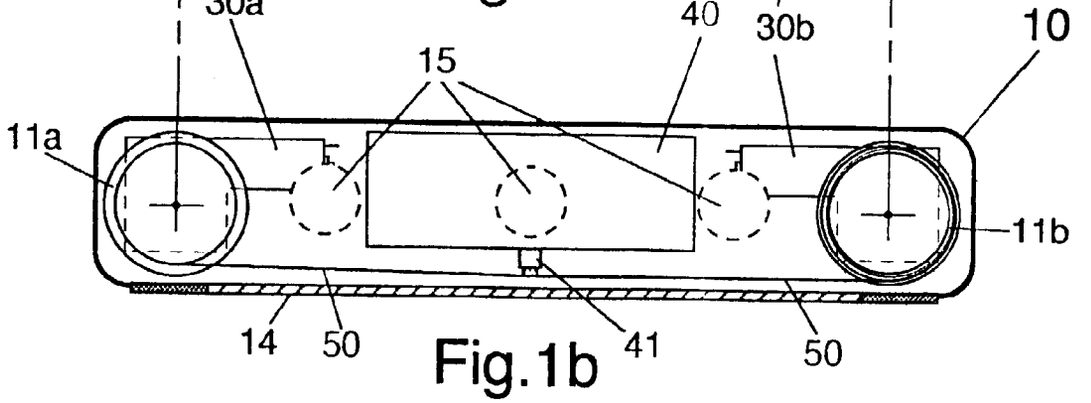

30a
40
30b
10
15
11a
11b
14
50
41
50

Fig.1b

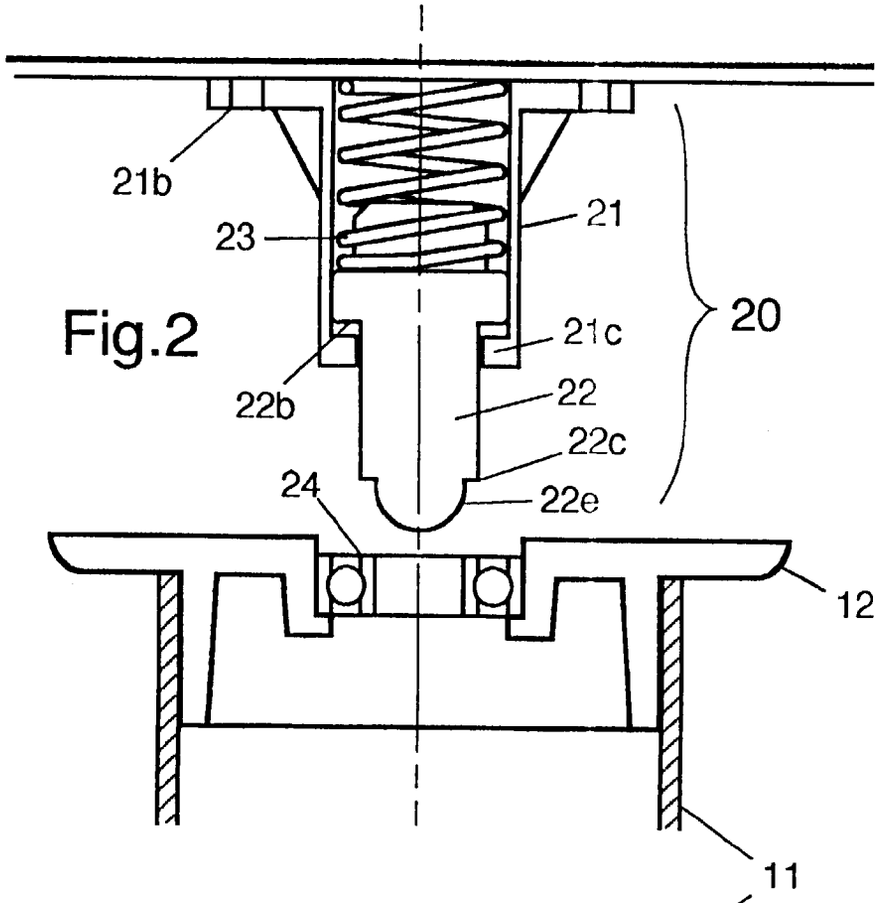


Fig.2

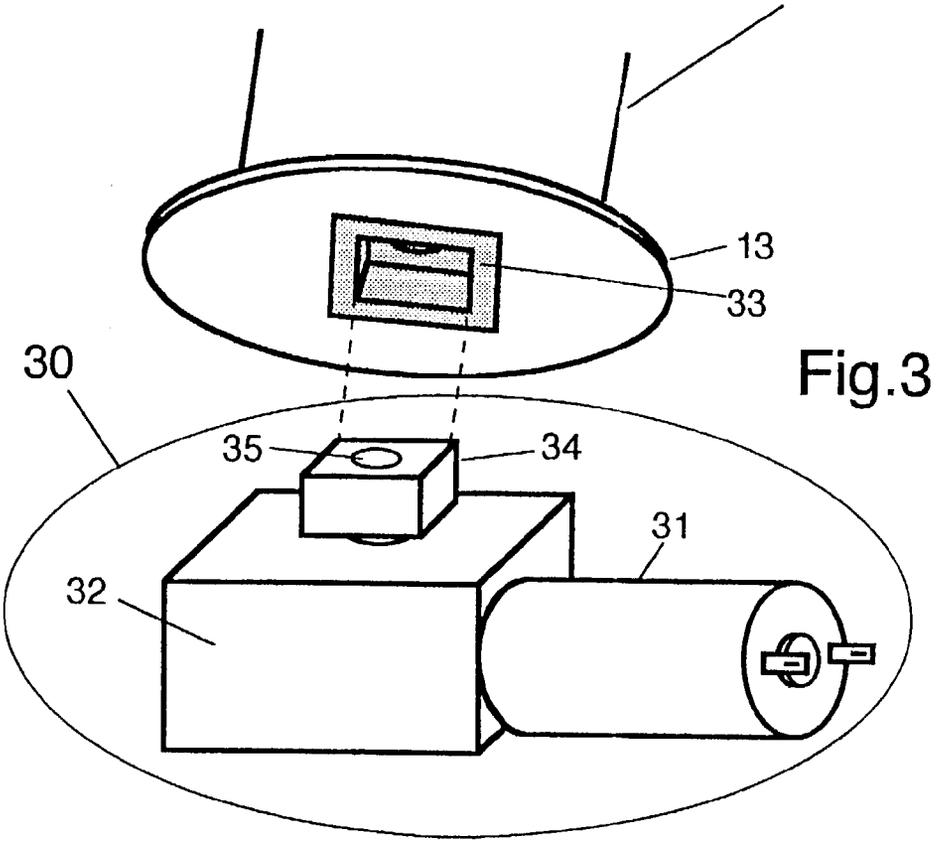


Fig.3

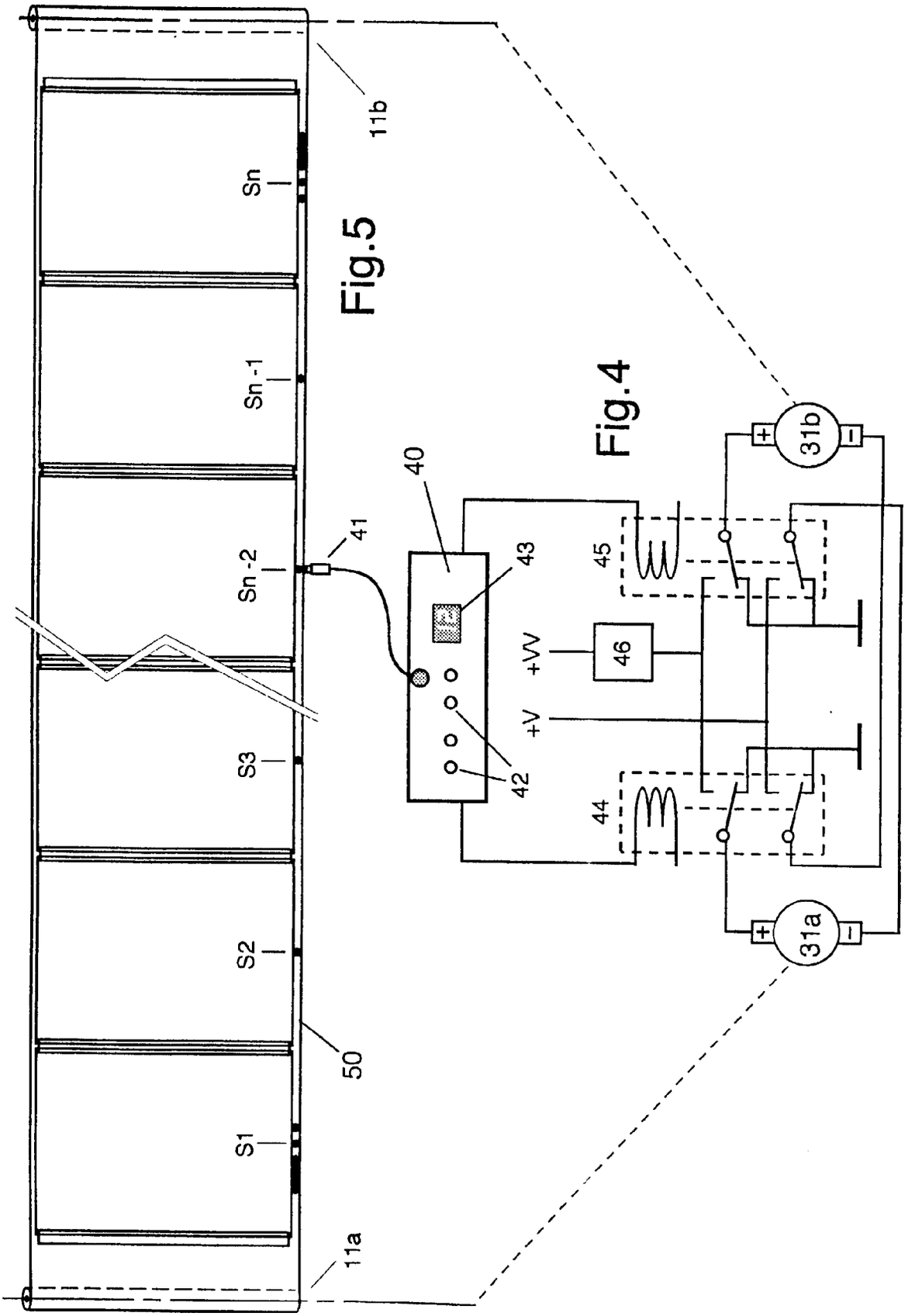
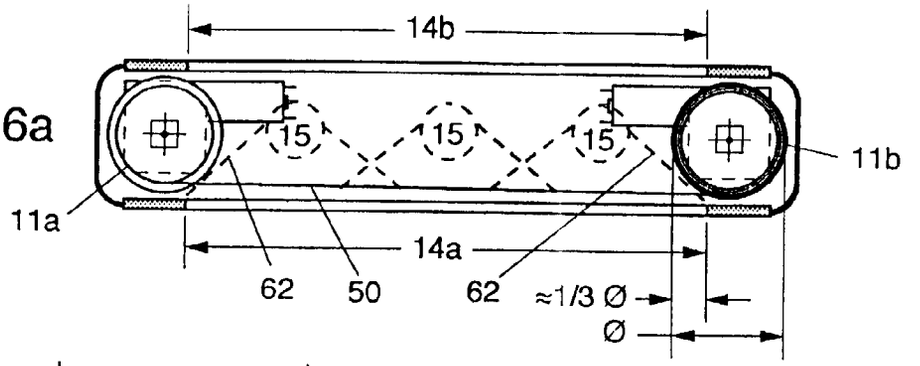


Fig.5

Fig.4

Fig.6a



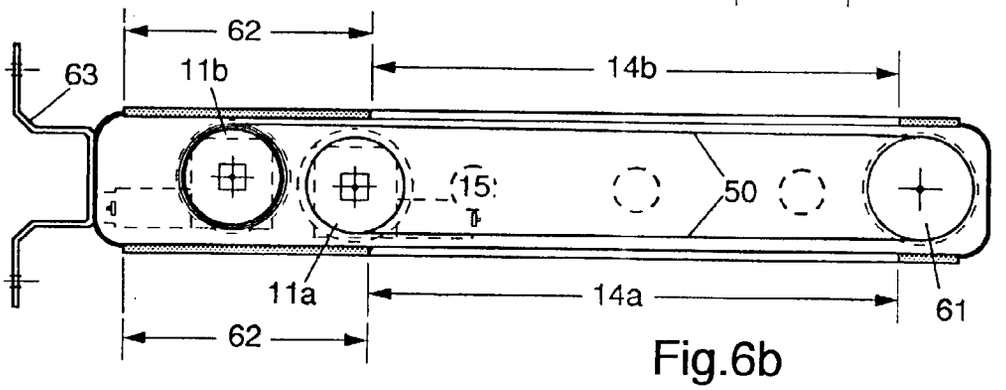


Fig.6b

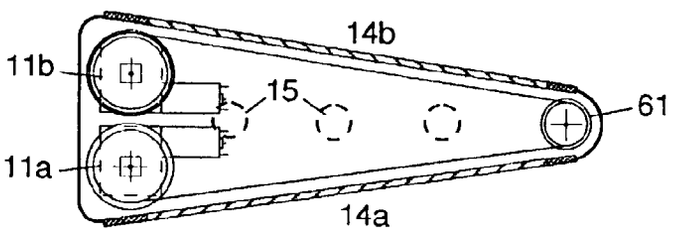


Fig.6c

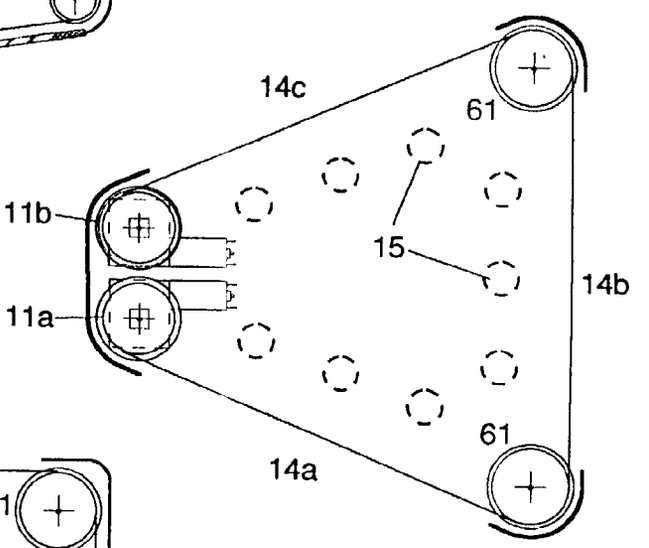


Fig.6d

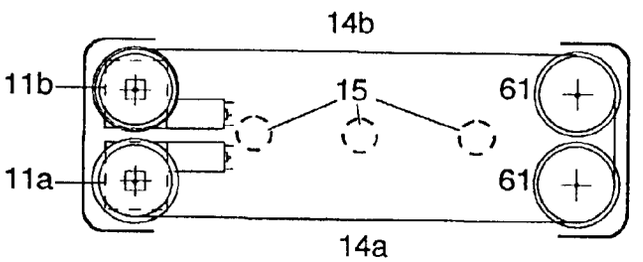


Fig.6e