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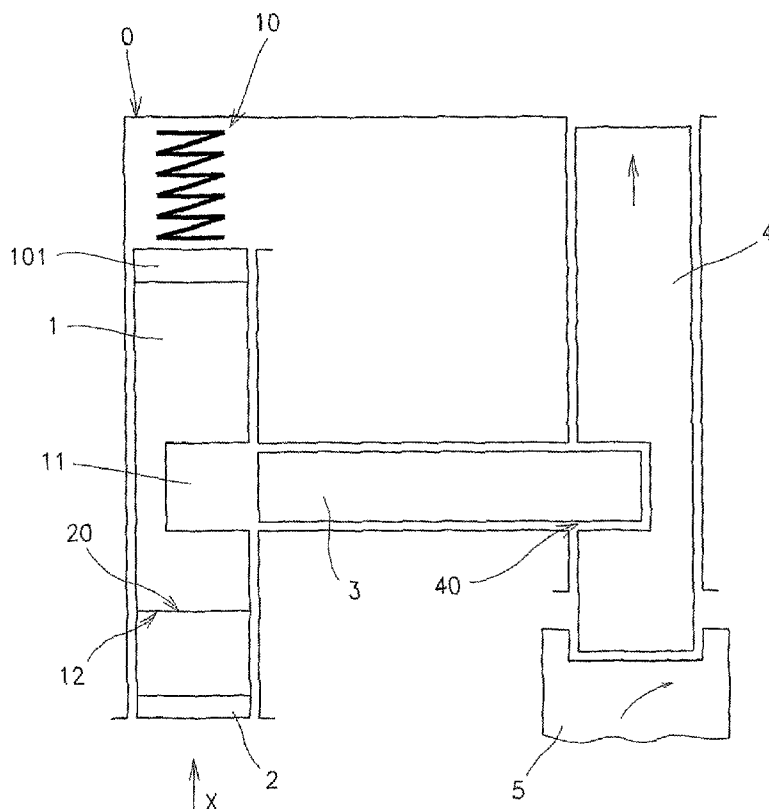


Fig. 1

(57) Abstract: The invention relates to the lock comprising an opening for unlocking means (2) and to this lock assigned catcher system coupled with the latch (4). The catchers (1) are displaceably arranged in a static body (0) parallel with the direction of inserting the unlocking means (2) into the body (0) and they are sprung, while each catcher (1) is in the cross direction provided with recessing (11) for the safety piece (3), which is mounted in the body (0) in a spring manner, displaceably, crosswise to the catchers (1) and is coupled with the latch (4), while the unlocking means (2) contains the face supporting surfaces (20) for the face wall (12) of each catcher (1), and mutual positions of supporting surfaces (20) on the unlocking means (2) correspond to the longitudinal shifting of individual catchers (1) in the static body (0) of the lock necessary to set the recessing (11) for the safety piece (3) on individual catchers (1) towards the safety piece (3).

Lock

Technical field

The invention relates to the lock comprising an opening for unlocking
5 means and to this opening assigned catcher system coupled with the latch.

Background art

The known locks comprise casing in which the catcher system is arranged. The catchers are spring-mounted and they consist of several parts
10 arranged one after another in direction of catcher motion. The casing is further provided with cylindrical rotating part with longitudinal opening for key inserting, to which the springy catchers are assigned by their ends. Usually four up to six catchers are arranged in one row one after another, at the same time there are known the catchers which contain two or three rows of catchers. The key is
15 provided with various protrusions or teeth, which after inserting the key push the catchers into the desired position and so enable turning of cylindrical rotating part of the casing by means of the key which causes unlocking of the latch. When inserting the key into the longitudinal opening there is created friction between the protrusions or teeth on the key and catchers, which causes wear
20 and tear of the key and catchers, which is one of disadvantages of the known solutions. Another disadvantage is the necessary higher tolerance of openings for catchers and of the catchers themselves, so that the functioning of the lock is secured even after a certain period of usage, thus with a certain degree of wear of the key as well as of the lock. Another disadvantage is relatively limited
25 number of combinations in setting the catchers in one row, while the systems having more rows of catchers are much more demanding as to production and price. Lower number of possible combinations of catchers reduces security of the lock, e.g. from the point of view of so called sensing the catchers, though there exist additional technical provisions against this, like for example a mutual
30 overlap of longitudinal protrusions in longitudinal opening for the key, etc. Another disadvantage is the structure of the lock with rotating cylinder, which enables e.g. to drill off the lock or its breaking. Also against this there exist more

or less effective additional technical provisions, e.g. lock cores made of hard metal inserted into the casing to potentially sensitive places of the lock, a combination of outer shape of the lock with a suitable protective (armoured) plate on the door etc., nevertheless such solutions generally increase the complexity, the demand as to material and production, and the last but not least the price of the lock. Another disadvantage are the relatively high production costs, especially at so called safety locks, which are provided with various additional provisions, out of which some have been mentioned above.

To increase safety there also exist various combinations of mechanical and electrical or electronic elements in which in principle the above mentioned disadvantages of mechanical locks with rotating cylinder with disadvantages of electronic locks are combined.

The goal of the present invention is to remedy or at least minimise the disadvantages of the present state of the art.

15

The principle of invention

The goal of the invention has been achieved by the lock whose principle consists in that the catchers are displaceably arranged in a static body parallel with the direction of inserting the unlocking means into the body and they are sprung, while each catcher is in the cross direction provided with recessing for the safety piece, which is mounted in the body in a spring manner, displaceably, crosswise to the catchers and is coupled with the latch, while the unlocking means contains the face supporting surfaces for the face wall of each catcher and the mutual positions of supporting surfaces on the unlocking means correspond to the longitudinal shifting of individual catchers in the static body of the lock necessary to set the recessing for the safety piece on individual catchers towards the safety piece.

The advantage of this arrangement is that each catcher may be produced of one piece, which reduces the production and installation demand. The catchers may also be sprung either jointly or each separately. Another advantage is that the unlocking means does not shift on the catchers, but it is only in a face surface contact with them, no wear and tear occurs here, which

increases the service life of the system. This arrangement enables to create the lock with a high number of catchers, thus with a high resistance against an unauthorised unlocking, e.g. by means of a „sensing“. Further advantage is that this arrangement enables to create the unlocking means of very small dimensions and weight, which is advantageous for the user. Another advantage is the simplicity of design and possibility to produce highly accurate and with all necessary elements equipped catchers e.g. by injecting the suitable plastics into forms, which increases productivity and decreases the costs. Another advantage is that this arrangement enables to produce a whole row of types of locks with various numbers of catchers, through which the variability is improved. This arrangement also enables to create so called system of a general key. Advantageous is also the fact, that through utilising of this arrangement it is not necessary even at the door with handle „to lock“ in the meaning of extending the latch from the lock by turning the key, as the lock after each closing is brought into status, when it is not possible to open it without the unlocking means, that means it locks (automatically or manually, according to the structural design). Further advantage is that the unlocking means may in principle be of any shape and size of diameter, it may be one-sided, both-sided, even more sided, etc., which provides further possibilities not only from the point of view of safety of the lock and combinations of catchers (various numbers of catchers, etc.), but also from the point of view of design, perceived as an appearance of the product.

Advantageous embodiments are apparent from description of examples of embodiments and of the patent claims.

Description of the drawing

The invention is schematically represented on the drawings, where the Fig. 1 shows arrangement of the lock, the Fig. 2 the catcher system in ground plan at the locked lock, the Fig. 3 the catcher system in the ground plan at the unlocked lock, the Fig. 3a, 3b shows exemplary embodiments of catchers and the recessing in them, the Fig. 4 arrangement of a house lock with a split safety piece, the Fig. 5 a longitudinal section through arrangement of a locked

padlock, the Fig. 6 a locked lock with section through A-A plane of the Fig. 5 (size ratio does not correspond towards the Fig. 5), the Fig. 7 shows a section through B-B plane from the Fig. 6, the Fig. 8 unlocked lock – section through the same place as in the Fig. 6, the Fig. 9 section through the C-C plane of the Fig. 8, the Fig. 10 padlock with increased width and reduced thickness – the locked lock, the Fig. 11 padlock with increased width and reduced thickness – unlocked lock, the Fig. 12 shows the stirrup of padlock according to the background art, the Fig. 13 stirrup of padlock according to the invention, the Fig. 14 one-sided flat unlocking means for lock with catchers immediately side by side, the Fig. 15 one-sided flat unlocking means for the lock with catchers separated with partitions, the Fig. 16 two-sided flat unlocking means for the lock with catchers separated with partitions, the Fig. 16A shows cross-section through one embodiment of the profiled unlocking means, the Fig. 16b cross section through another embodiment of the profiled unlocking means, 16c cross section through another embodiment of the profiled unlocking means, the Fig. 16d cross section through another embodiment of the shaped unlocking means, the Fig. 17 to 21 various possibilities of shaping the catchers, the Fig. 22 to 26 various possibilities of shaping the flat unlocking means, the Fig. 27 to 27b various embodiments of the latch, the Fig. 28a and 28b the catcher system with partitions between the catchers and the Fig. 29 lock with multiplier in the catcher system.

Examples of embodiment

The invention will be described on several examples of embodiment.

In exemplary embodiment in the Fig. 1 the lock comprises the body 0, which is provided with longitudinal slot for inserting the unlocking means 2 in the direction X to catchers 1, which are in the body 0 arranged side by side and displaceably in the direction X of inserting of the not represented unlocking means 2. The catchers 1 are sprung by means of the spring system 10. One of the possible embodiments of the spring system 10 is better represented in the Fig. 2 and 3, in which the spring system 10 comprises a pair of coil springs 100 leaning against the rear wall of the stop plate 101, whose front wall is adjusted

for contact with rear wall of the catchers 1. In the not represented example of embodiment the spring system 10 comprises other sprung elements, e.g. one leaf spring etc. In another not represented example of embodiment the spring system is of another suitable structure.

5 The catchers 1 in the represented example of embodiment are arranged immediately side by side. In the not represented example of embodiment the individual catchers 1 are separated by separation partition. In the represented example of embodiment the catchers 1 are formed of one-piece longitudinal bodies of a prismatic shape. In the not represented example of embodiment the
10 catchers 1 are formed of more-pieces bodies of a suitable form, while these variants are more demanding as to production. Especially the variant with split catchers enables further increase in variability of the system from the point of view of composition of necessary length of individual catchers for function of the lock as it will be described in the following text.

15 As further represented in the exemplary embodiment in the Fig. 1, 2 and 3 the catchers 1 in the direction across the row of catchers 1 are provided by recessing 11 for engagement of one end of the safety piece 3 at a time along the whole width of row of the catchers 1. In the represented example of embodiment the safety piece 3 is formed of one-piece body. In exemplary
20 embodiment represented in the Fig. 1, 2, 3 and 3a the recessing 11 are formed of crosswise grooves in the catchers 1. In exemplary embodiment represented in the Fig. 3b the recessing 11 are formed of crosswise holes in the catchers 1. In the not represented example of embodiment the recessing 11 are formed by other suitable elements, including the negative embodiment, i.e. such, in which
25 the recessing 11 in the catchers 1 are replaced by protrusions on the catchers 1, while the recessing corresponding to the recess is performed on the safety piece 3.

 The recessing 11 on individual catchers 3 is performed in various distances from the face wall 12 of the catcher 1, on which upon lock opening is
30 seating the face wall 20 of shifting element of the respective catcher 1 on the unlocking means 2. Unlocking means 2 is equipped with a system of side by side arranged shifting means of individual catchers 1, while by inserting the

unlocking means 2 into a slot in the body 0 of the lock each of the catchers 1 displaces by means of one of respective shifting means in direction of length of the catcher 1, i.e. in direction of inserting the unlocking means into a slot of the lock, into position in which the safety piece 3, which is displaceably arranged in the body 0 of the lock, engages by one its end into all recessing 11 in catchers 1, through which the second end of the safety piece 3 extends from the recessing 40 in latch 4, through which it releases the latch 4 for inserting the latch 4 into the body 0 and it unlocks the lock, e.g. it enables unlocking of the door 5. The latch 4 inserts into the body 0 automatically or by manual acting of the user. It is obvious that the Fig. 1 represents embodiment of the lock being mounted into the doorframe, where the latch 4 extends from the doorframe into the door 5 and backwards. In the not represented example of embodiment the lock is positioned in the door 5 and the latch 4 extends into the doorframe. In the represented example of embodiment the safety piece 3 is performed as a straight longitudinal body, so that the recessing 11 on individual catchers for engaging the safety piece 3 must be brought into an accurate row side by side, as represented in the Fig. 3. In the not represented example of embodiment the safety piece 3 is performed as a broken longitudinal body, so that individual recessing 11 on the catchers 1 for releasing the latch 4 need not be arranged in one row.

As further represented in the Fig. 1, 2 and 3 the individual co-operating parts are performed without bevelled corners or with only minimum bevelling given more by the selected production procedures, e.g. creating the forms for injection of plastics for production of the catchers etc., than by goal-targeted structure of individual elements of the locks.

In embodiment in the Fig. 4 of the lock for the house door 5, which represents again embodiment in which the lock is positioned in the doorframe 8 of the door 5, the lock by its body 0 is positioned in the doorframe 8 of the door 5. The entry opening, or more precisely the slot for unlocking means 2 is secured by the cover 7, e.g. made of hard metal. The lock is provided with the spring system 10 with springs 100 and the stop plate 101. By contrast to the embodiment according to the Fig. 1 opening of the lock is being solved here, or

more precisely releasing of the latch 4 from both sides of the door 5. From external side of the door 5, i.e. from the side outside the flat, the system is identical as to its principle as at the embodiment according to the Fig. 1 and the latch 4 may be released by inserting the unlocking means 2 into the slot. To

5 improve resistance of the lock against an unauthorised manipulation with the catchers 1 the spring system 10 is added by an auxiliary spring system 102 with auxiliary springs 1021 and the auxiliary stop 1020, which leans against the protrusion 103 on the front section of the catchers 1. From inner side of the door 5, i.e. from a flat the latch 4 may be released without using the unlocking means

10 2. In the represented example of embodiment this is solved so that the safety piece 3 is split into two parts, while the part 3a by one of its end is assigned to the system of catchers 1 and their recessing 11 and on its second end it is provided by guiding for the sprung displaceable mounting of the part 3b, which by its end is assigned to the recessing 40 in the latch 4. The part 3b of the

15 safety piece 3 is further coupled with the not represented mechanical opener whose control element leads to the inner side of the door 5, i.e. in the flat. Mechanical opener may be formed of e.g. a handle or other manually controlled means on the inner side of the door. Opening of the door 5 functions as follows. For opening from outer side of the door 5 into the lock is inserted the

20 unlocking means 2, by means of which the catchers 1 are set into the correct position for inserting the end of the first part 3a of the safety piece 3 into the recessing 11 in the catchers 1. The end of the first part 3a of safety piece 3 manually or by acting of the not represented spring etc. is inserted into the recessing 11 in the catchers 1, at the same time it pulls together with itself the

25 part 3b, which by its end extends from the recessing 40 in the latch 4, by which it releases the latch 4 and the door 5 may be opened. For opening the door 5 from the inner side, i.e. from the side of the flat, a person acts on mechanical opener coupled with the part 3b of the safety piece 3, by which he/she moves it in a guiding in the part 3a of the safety piece 3, by which the end of the part 3b

30 of the safety piece 3 is extended from the recessing 40 in the latch 4, by which the latch is released 4 and the door 5 may be opened.

In example of embodiment represented in the Fig. 4 the lock is further equipped with a sprung shifting locking pin 41 co-operating with auxiliary recess

42 in the latch 4. The locking pin 41 after releasing the latch 4 inserts into the auxiliary recess 42 and thus secures the released latch 4 against spontaneous return into the secured position at opened doors 5. After repeated closing the door 5 the locking pin 41 after then automatically or manually extends from the auxiliary recess 42 and thus releases the latch 4, which is sprung here, so that it shifts again and secures by means of the part 3b of the safety piece 3, through which the doors 5 are locked again.

The Fig. 5 to 11 represents embodiment of invention in the form of a padlock. The lock comprises the body 0, in which there is the cavity 00 for the latch 4 in the form of a bent stirrup. Both ends of the stirrup in the locked status of the lock are inserted into the body 0, where they are secured by the safety piece 3 inserted into the lateral grooves 40 in the ends of the stirrup 4, as it is better seen in the Fig. 13. In the represented example of embodiment one end of the stirrup 4 is sprung by means of the spring 120 and the splice 121, through which taking out of the stirrup from the body 0 is easier, which shows an effect of automated opening of a padlock after pushing the draw bar 30. In the body 0 in a springy manner and displaceably in direction of the length of ends of the stirrup there is positioned the system of parallel catchers 1 provided with recessing 11 in various distance from the face wall 12 of each catcher 1. The catchers 1 by their face walls 12 are assigned to the entry hole or slot for the unlocking means 2. To the entry hole or slot for the unlocking means 2 there is also assigned an auxiliary spring system 102 with auxiliary springs 1021 arranged between the moveable auxiliary stop 1020 and the solid support 1022.

As represented in the Fig. 7, the safety piece 3 into the lateral grooves 40 is depressed by the springs 31 and the catchers 1 in the locked position of the lock prevent extension of the safety piece 3 from the grooves 40. After the lock is opened, it is necessary to insert the unlocking means 2, through which the catchers 1 are moved and they are set with their recessing 11 into the necessary position for engagement of the safety piece 3. Engagement of the safety piece 3 into recessing 11 in the catchers 1 is either controlled automatically by acting of a suitable spring or it is controlled manually, as it is shown in the Fig. 6, 7, 9, 10 and 11 by means of the draw bar 30. Once the

safety piece 3 releases the grooves 40 in the stirrup, the stirrup may be simply pulled out, this according to the design of the lock either by one end only (the second end of the stirrup is longer and against total pulling out it is protected by means of a ring 13 on the stirrup and with recess 130 in the body 0), or the
5 stirrup is removed from the body 0 by both ends.

The Fig. 10 and 11 represents an unloaded embodiment of the padlock according to the invention, in which a lower number of catchers 2 is used arranged only along the middle section of the safety piece 3, whose both ends are angular cranked and in the locked status of the lock (Fig. 10) engage into
10 the grooves 40 in the stirrup.

The Fig. 12 represents stirrup of the padlock of the present common embodiment (background art), and the Fig. 13 represents the stirrup of padlock in embodiment according to the invention. Upon comparing the pictures the difference of both stirrups is apparent and also the fact that the padlock's stirrup
15 according to the invention is secured by means of the safety piece 3 always on both ends, while the stirrup of padlock according to the background art is secured by means of the safety piece 3 only on one end. Only at some special embodiments of padlocks with increased resistance against mechanical damage, which are a part of background art, and at which after unlocking of the
20 lock with a classic key with rotation around longitudinal axis, the whole stirrup is removed, both ends of the stirrup are secured by the safety piece, nevertheless it is the split safety, whose both parts are controlled by rotating the key.

The Fig. 14, 15, 16, 16a to 16d represents various embodiments of an unlocking means 2 according to the invention. It is obvious that the unlocking
25 means 2 may be of various cross-section, at the same time especially advantageous seems to be the shape of a flat card in the Fig. 14 to 16, because it enables to create an entry hole in the body 0 of the lock in the form of a narrow slot, which provides an improved protection to inner parts of the lock, such as the catcher system, safety piece 3 etc., which after then need not be so
30 robust, if the body 0 of the lock is performed sturdy sufficiently or the lock is mounted in sufficiently strong surroundings, e.g. in robust doorframe, or under the safety fitting with only narrow slot for inserting the unlocking means, etc.

The Fig. 16 represents both-sided unlocking means 2. The Fig. 16a to 16d represents embodiment of an unlocking means 2 with various shaped intersection and with pushing means 2 arranged in various manner.

The unlocking means 2 comprises the body 2a, on which in
5 corresponding places are arranged the pushing means 2b of catchers 1 of the lock. Position of individual pushing means 2b and mutual positions of their face walls 20, the same as their total number are defined by arrangement of the catcher system in the lock. It is valid generally, the higher the number of catchers 1, the more resistant the lock is against unauthorised unlocking.
10 Similarly it is also with various shaped arrangements of pushing means and catcher system, e.g. into a triangle, square or other suitable shape, as it is represented in the Fig. 16a to 16d. In embodiment in the Fig. 16d the unlocking means 2 (and similarly all shaped unlocking means) is provided with the shaped cavity 21, which may, but need not, have a cross-section of the same shape
15 (nevertheless of smaller size) as the shape of outer cross-section of the unlocking means 2. The face shaped cavity 21 of unlocking means co-operates at inserting of the unlocking means 2 into the lock with the shaped protrusion in the body 0 of the lock, so that also in this embodiment in the body 0 of the lock is performed only a narrow shaped slot for inserting the unlocking means 2
20 into the lock, which again increases safety of the lock.

At embodiment of the lock for unlocking means from the Fig. 16a to 16d the safety piece is performed as a combined one, e.g. similarly as the mechanical stop at photographic apparatus etc.

As represented in the Fig. 17 to 21 the catchers 1 in the body 0 of the
25 lock and the pushing means 2b on the unlocking means 2 may have as to the shape suitable cross section, while though in the scope of one lock and to it corresponding unlocking means 2 it is possible, that the catchers 1 have mutually different cross section in its shape and/or in the size, while the cross section of the pushing means 2b on the unlocking means 2 corresponds to the
30 cross section of the respective catchers 1.

In the Fig. 22 to 26 there are represented several exemplary embodiments of the unlocking means 2 in the form of a flat card. The cut off in

lateral sides of the unlocking means 2 in the Fig. 22 to 25 represent various embodiments of grooves for attachment of the basic body of unlocking means in the not represented holder for an easy and comfort manipulation with the unlocking means 2 by a user. The Fig. 26 represents embodiment of the
5 unlocking means 2 with a simple stop against excessive insertion of the unlocking means 2 into the body 0 of the lock.

The Fig. 27 to 27b represents several exemplary embodiments of the latch 4.

The Fig. 28a and 28b represents several embodiments of the catcher's
10 system with shaped catchers 1 with separation partitions 9a, which are a part of the body 0 of the lock. This shaped embodiments increase resistance of the lock against opening by means of drilling.

The Fig. 29 represents the lock embodiment according to the invention with the catcher's multiplier Z, which increases the combination possibilities of
15 the catcher's system through setting the shift of individual catchers 1. The catcher's multiplier Z comprises the slotted link 1a of each catcher 1, which is displaceably mounted in body 0 of the lock and it is controlled by means of the unlocking means 2. The slotted link 1a by means of the multiplying lever 1a0 rotating around the axis 1a1 is coupled with the catchers 1 according to the
20 invention, to which there is assigned the safety piece 3 coupled with the not represented latch.

The lock according to the invention from the point of view of external dimensions and shaping of the body 1 may be performed also as the exchangeable lock core, in the same way as the exchangeable cores known
25 from the background art.

The above described or illustrated embodiments of the invention are not limiting for the scope of protection, but they serve to illustrate the invention principles, because various particular structural embodiments based on the key features of this invention mentioned in this description and represented in the
30 drawings fall into the scope of mere expertise, as an average specialist on basis of knowledge of this invention is able without exerting inventive activity or

inventive step to modify the represented and described exemplary embodiments into other particular structural arrangements.

List of referential markings

	0	lock body
	00	cavity in the lock body
5	1	catcher
	10	spring system of catchers
	100	coil spring
	101	stop plate
	102	spring system
10	1020	auxiliary stop
	1021	auxiliary spring
	1022	solid support
	103	protrusion
	11	recessing
15	12	face wall of catcher
	120	spring
	121	splice
	13	ring
	130	recess
20	1a	slotted link of catcher's multiplier
	1a0	multiplying lever of catcher's multiplier
	1a1	rotation axis of catcher's multiplier multiplying lever
	2	unlocking means
	20	face wall of shifting element
25	21	face shaped cavity
	2a	body of unlocking means
	2b	pushing means
	3	safety piece
	3a	part of safety piece
30	3b	part of safety piece
	30	draw bar
	31	spring
	4	latch
	40	recessing
35	41	locking pin
	42	auxiliary recessing
	5	door
	7	cover
	8	doorframe
40	9a	partition
	X	insertion direction of unlocking means
	Z	catcher's multiplier

CLAIMS

1. The lock comprising an opening for unlocking means and to this opening assigned catcher system coupled with the latch, **characterised in that**
5 **the** catchers (1) are displaceably arranged in a static body (0) parallel with the direction of inserting the unlocking means (2) into the body (0) and they are sprung, while each catcher (1) is in the cross direction provided with recessing (11) for the safety piece (3), which is mounted in the body (0) in a spring manner, displaceably, crosswise to the catchers (1) and is coupled with the
10 latch (4), while the unlocking means (2) contains the face supporting surfaces (20) for the face wall (12) of each catcher (1), and mutual positions of supporting surfaces (20) on the unlocking means (2) correspond to the longitudinal shifting of individual catchers (1) in the static body (0) of the lock necessary to set the recessing (11) for the safety piece (3) on individual
15 catchers (1) towards the safety piece (3).

2. The lock according to the claim 1, **characterised in that the** catchers (1) are made of one piece.

3. The lock according to any of the claims 1 or 2, **characterised in that the** catchers (1) are arranged immediately side by side.

20 4. The lock according to any of the claims 1 or 2, **characterised in that the** catchers (2) are mutually separated by the separation partition (9a).

5. The lock according to any of the claims 1 to 4, **characterised in that the** recessing (11) for the safety piece (3) in the catchers (1) is formed of a groove.

25 6. The lock according to the claim 5, **characterised in that the** groove is a crosswise one.

7. The lock according to the claim 5, **characterised in that the** groove is a slant one.

8. The lock according to the claim 4, **characterised in that the** recessing (11) for the safety piece (3) in catchers (1) is formed of an opening.

9. The lock according to any of the claims 1 to 8, **characterised in that the** recessing (11) for the safety piece (3) in catchers (1) are in the position for engagement of the safety piece (3) arranged in one row side by side.

10. The lock according to any of the claims 1 to 8, **characterised in that the** recessing (11) for the safety piece (3) in catchers (1) are in position for engagement of the safety piece (3) arranged except for one row side by side.

11. The lock according to any of the claims 1 to 10, **characterised in that the** recessing (11) for the safety piece (3) in the catchers (1) has sharp edges and the safety piece (3) on a portion for engagement into the recessing (11) in the catchers (1) has sharp edges.

12. The lock according to any of the claims 1 to 11, **characterised in that the** recessing (11) for the safety piece (3) at least on one catcher (1) has a greater dimension in longitudinal direction of the catcher (1), than it has on other catchers (1) and than the co-operating part of the safety piece (3) has.

13. The lock according to any of the claims 1 to 12, **characterised in that the** safety piece (3) is formed of at least two parts, out of which one is coupled with the latch (4) and the second is coupled with manual opener of the lock.

14. The lock according to any of the claims 1 to 13, **characterised in that the** safety piece (3) and/or the latch (4) are formed each of at least two parts and are coupled by means of the multiplying lever (1a0).

15. The lock according to any of the claims 1 to 14, **characterised in that the** latch (4) is formed of at least one part of the stirrup of a padlock.

16. The lock according to the claim 15, **characterised in that the** stirrup of a padlock on each its end portion is provided with one groove (40) for the safety piece (3).

17. The lock according to any of the claims 1 to 16, **characterised in that the** body (1) of the lock is provided with a slot-like entry opening for the unlocking means (2).

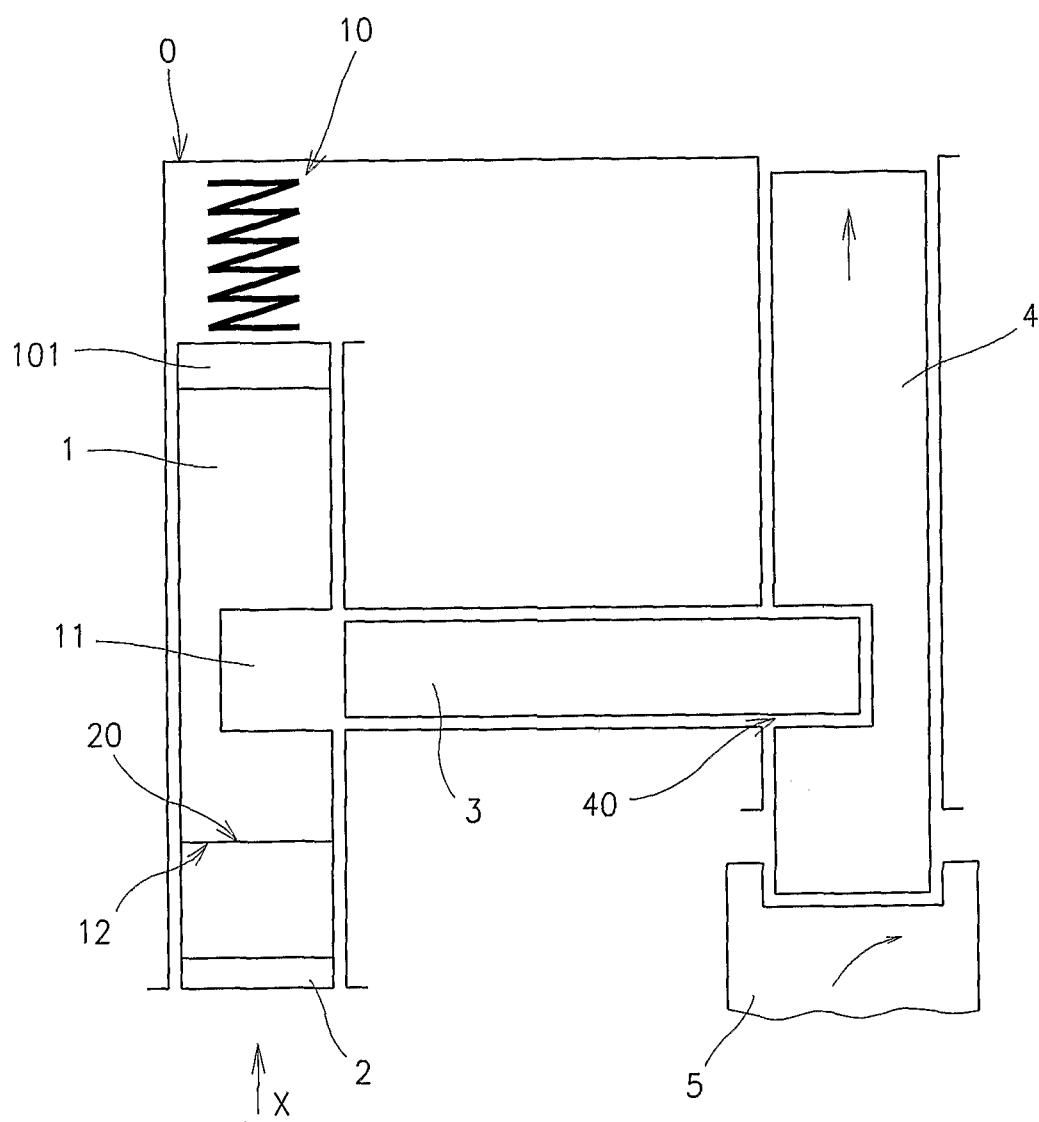


Fig. 1

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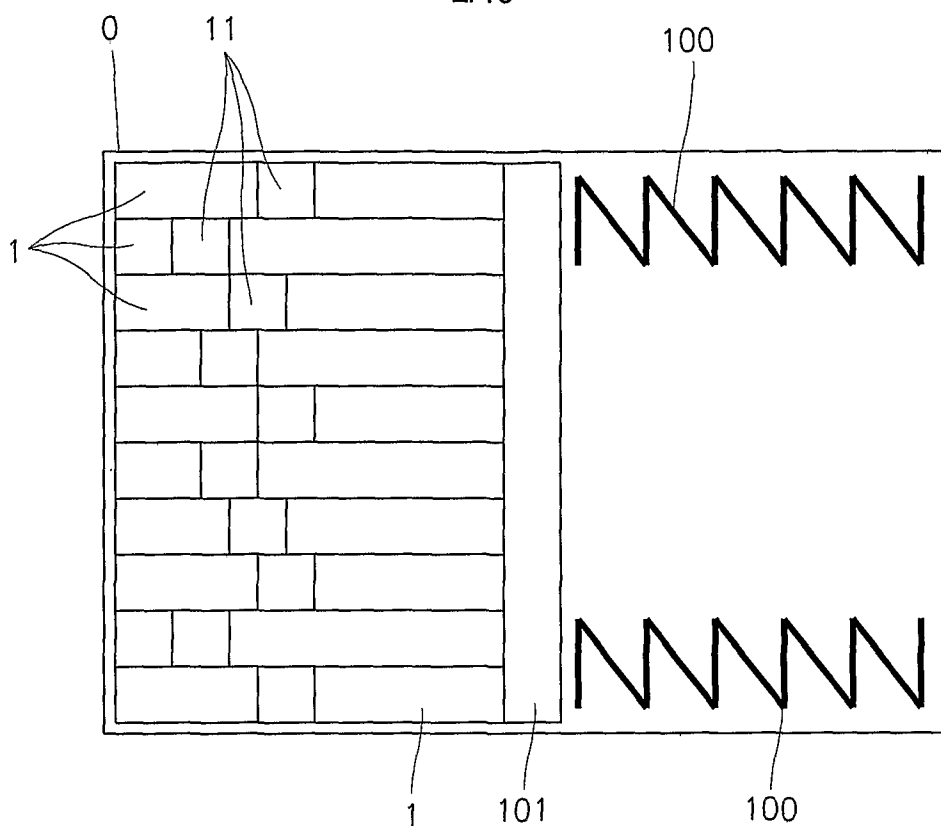


Fig. 2

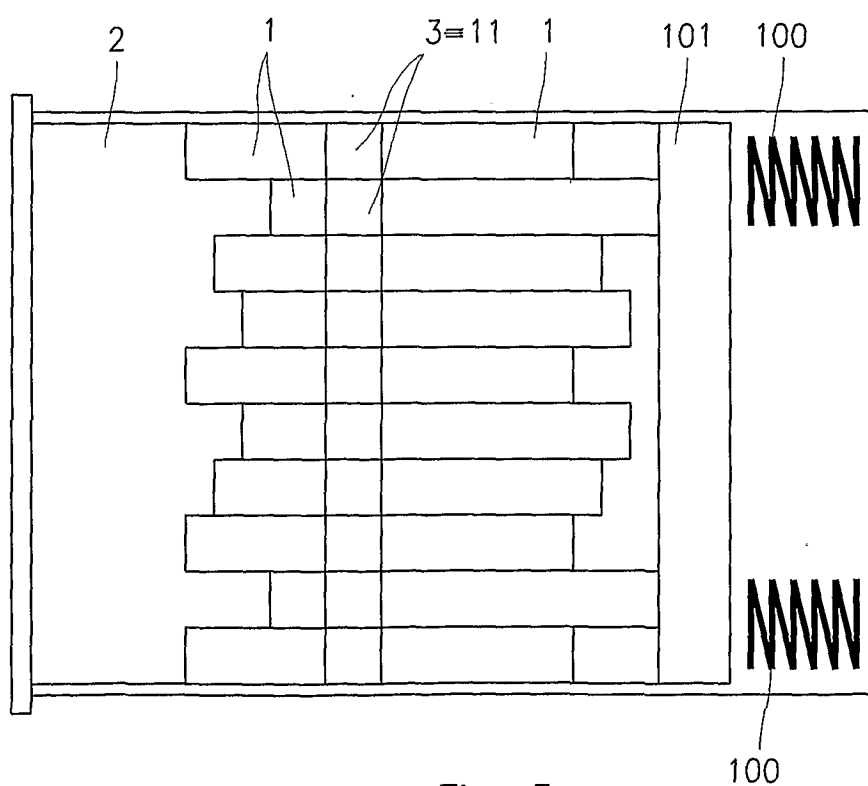


Fig. 3

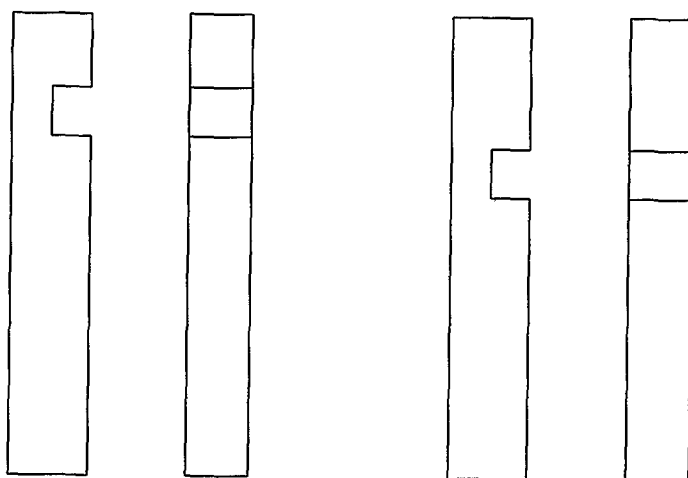


Fig. 3a

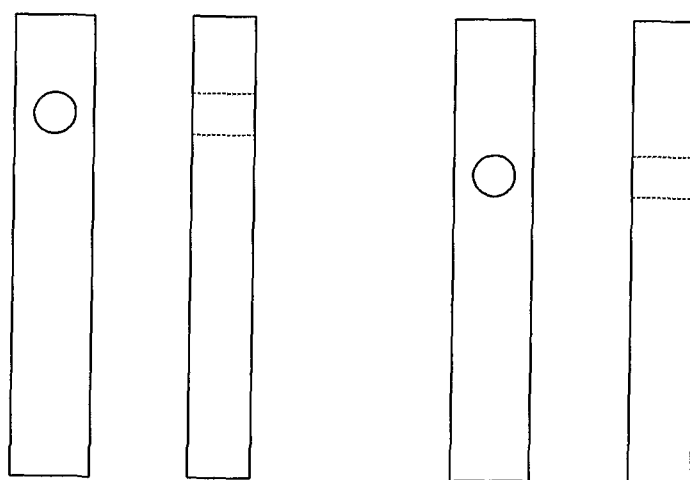


Fig. 3b

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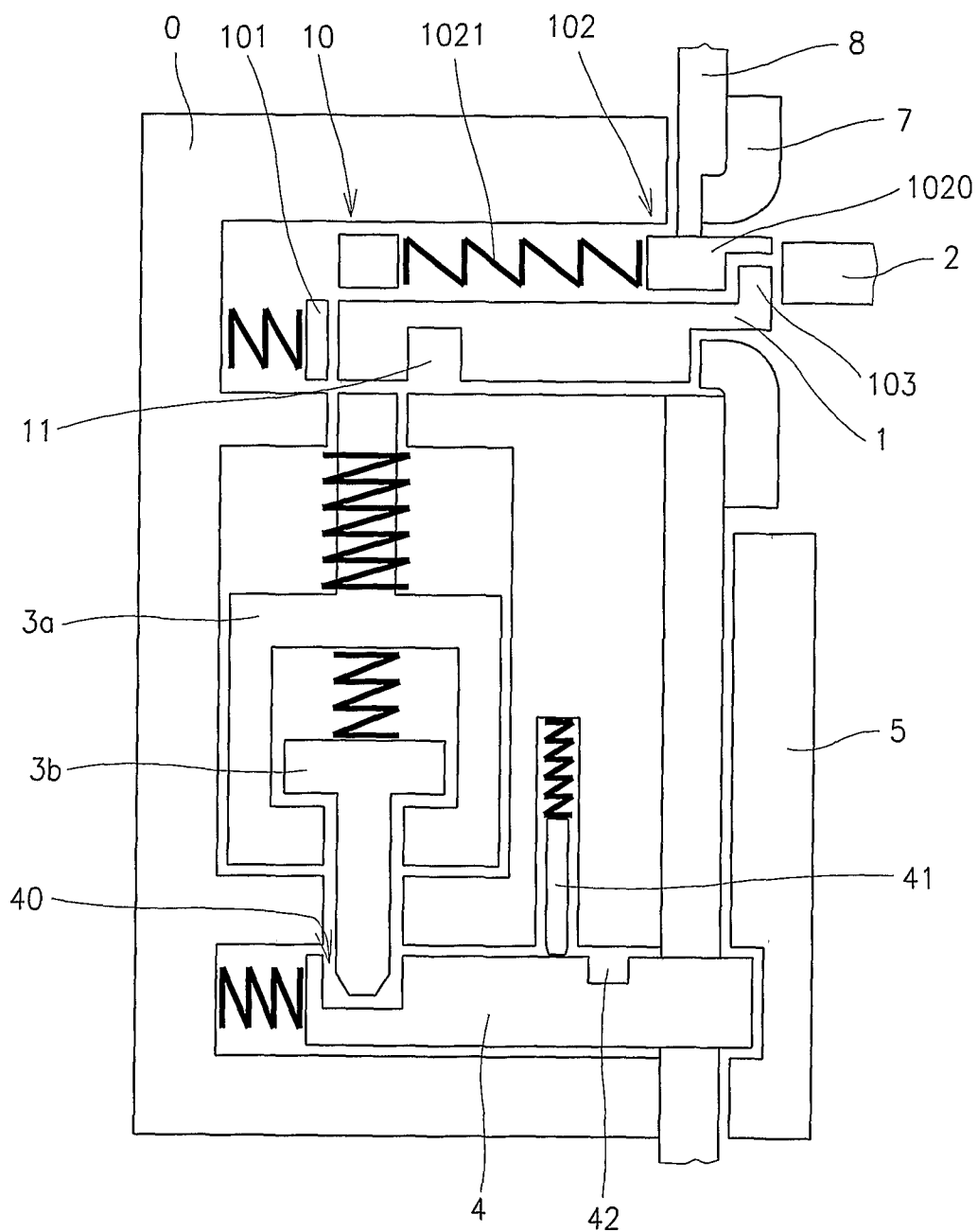


Fig. 4

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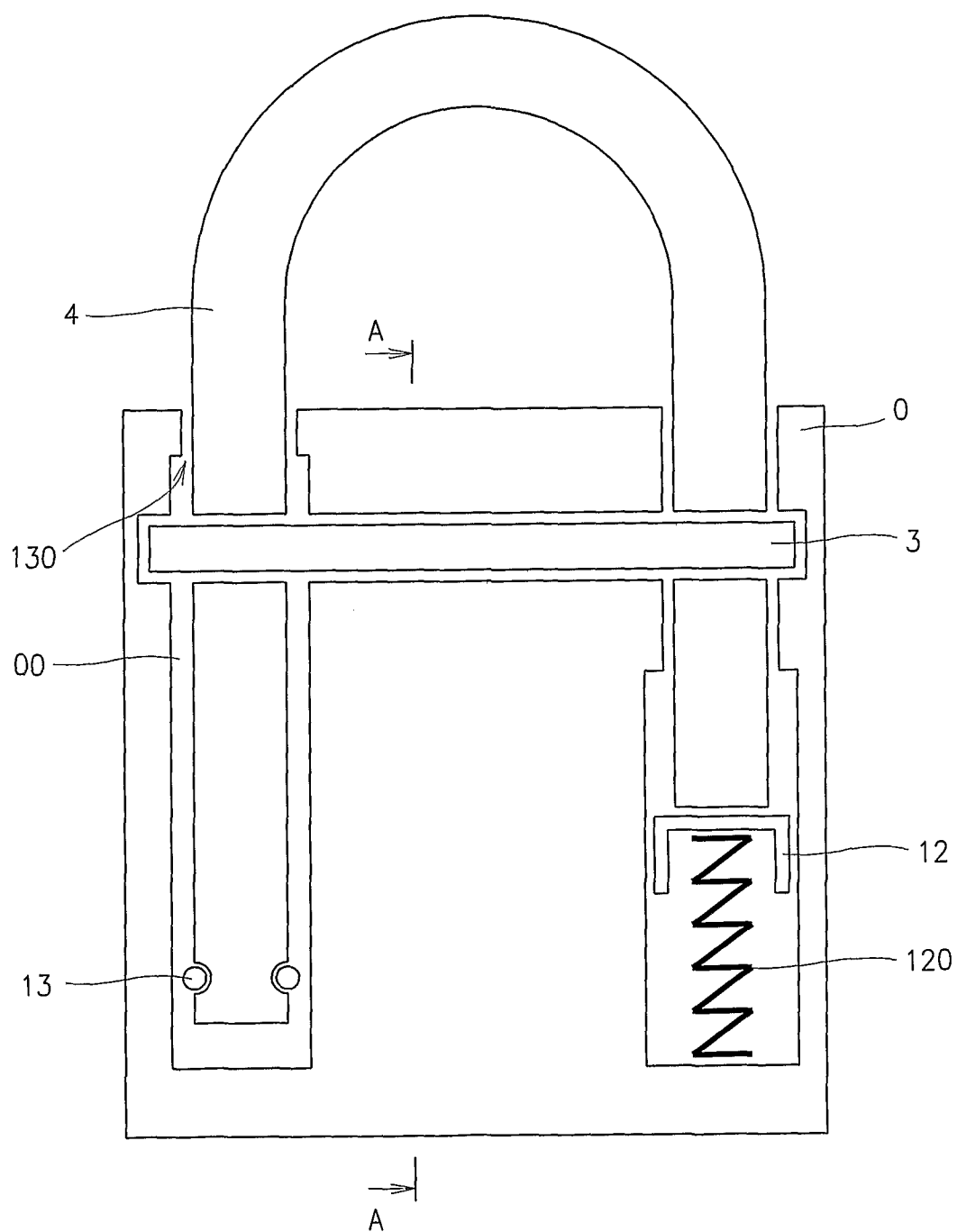


Fig. 5

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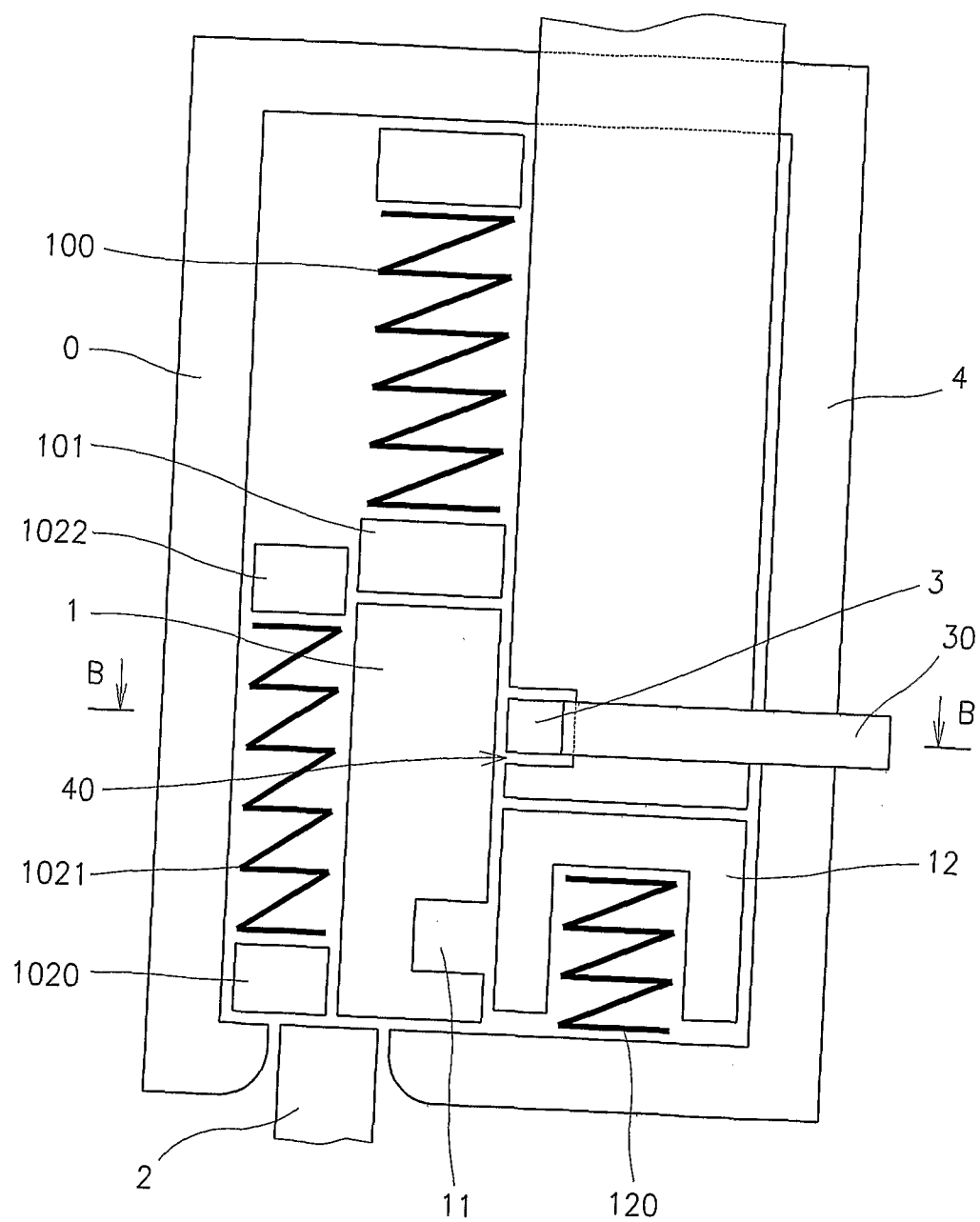


Fig. 6

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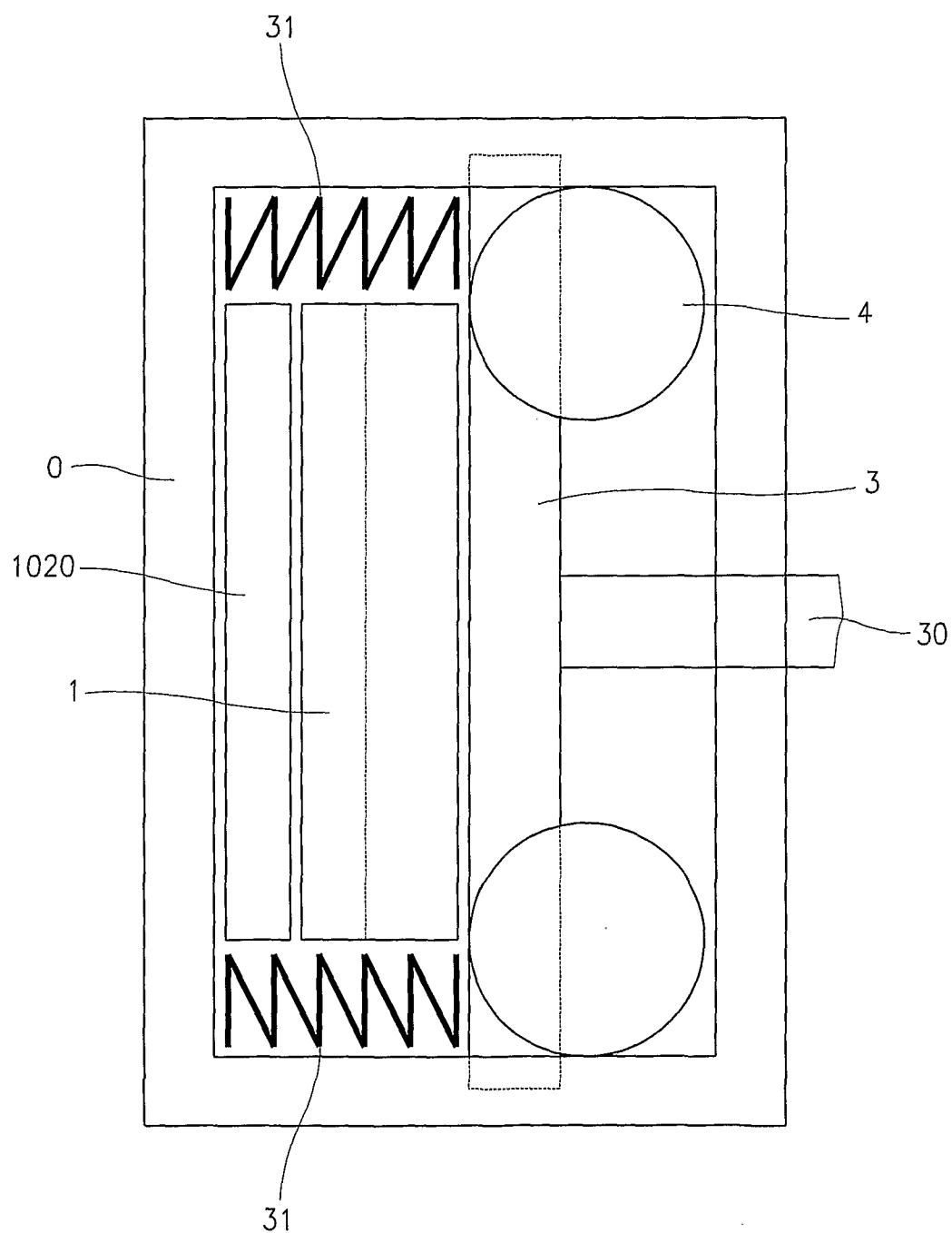


Fig. 7

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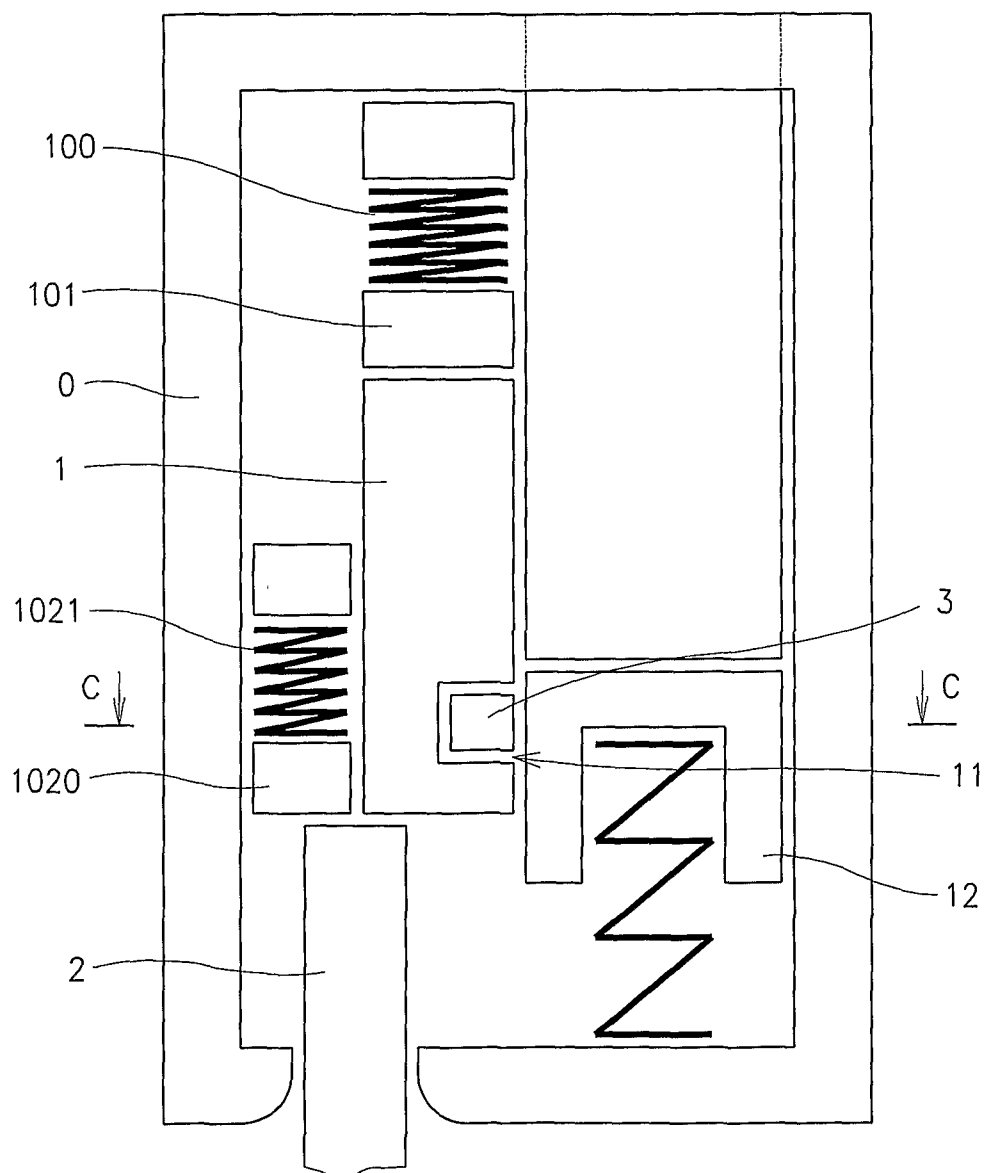


Fig. 8

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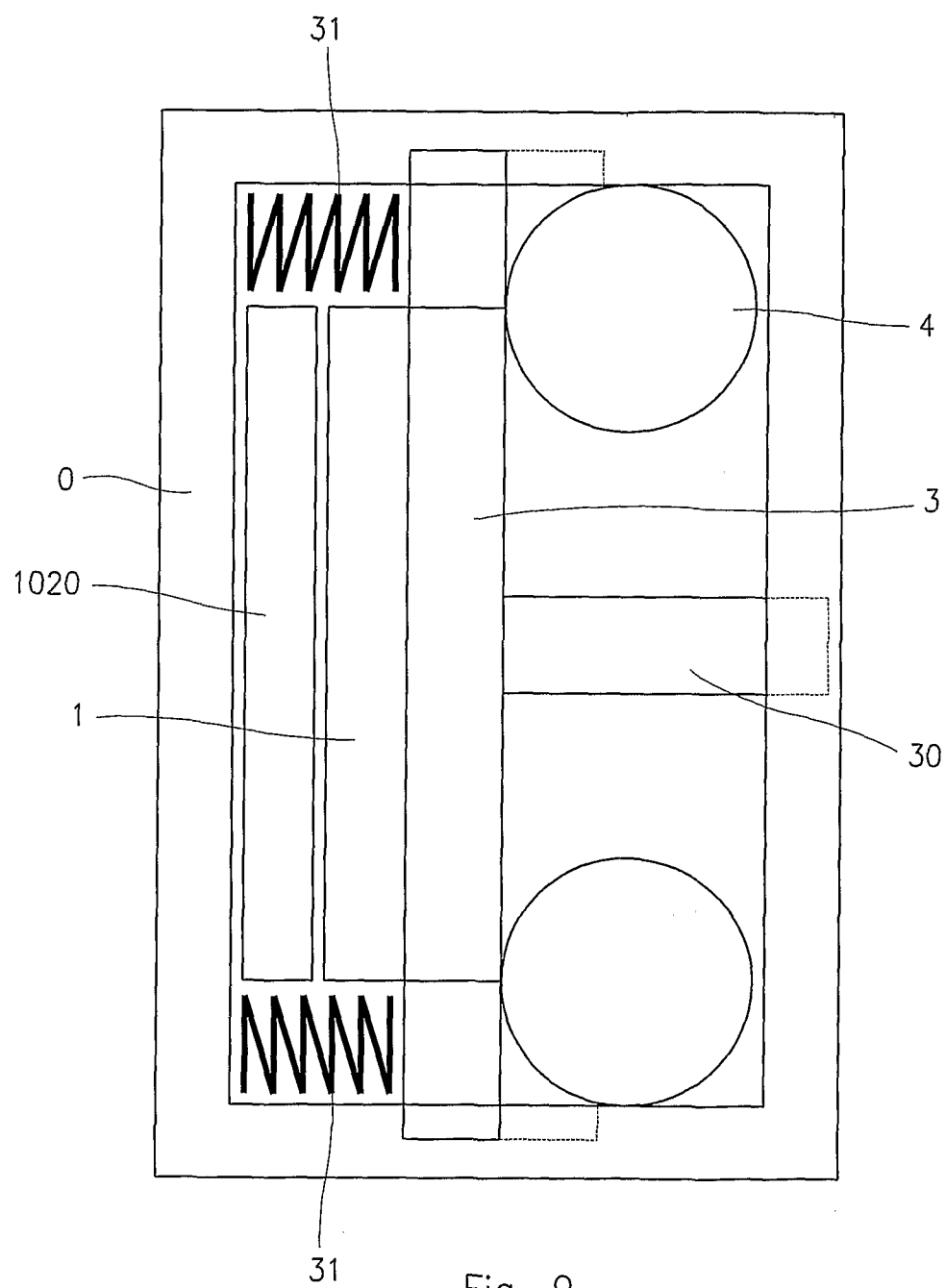


Fig. 9

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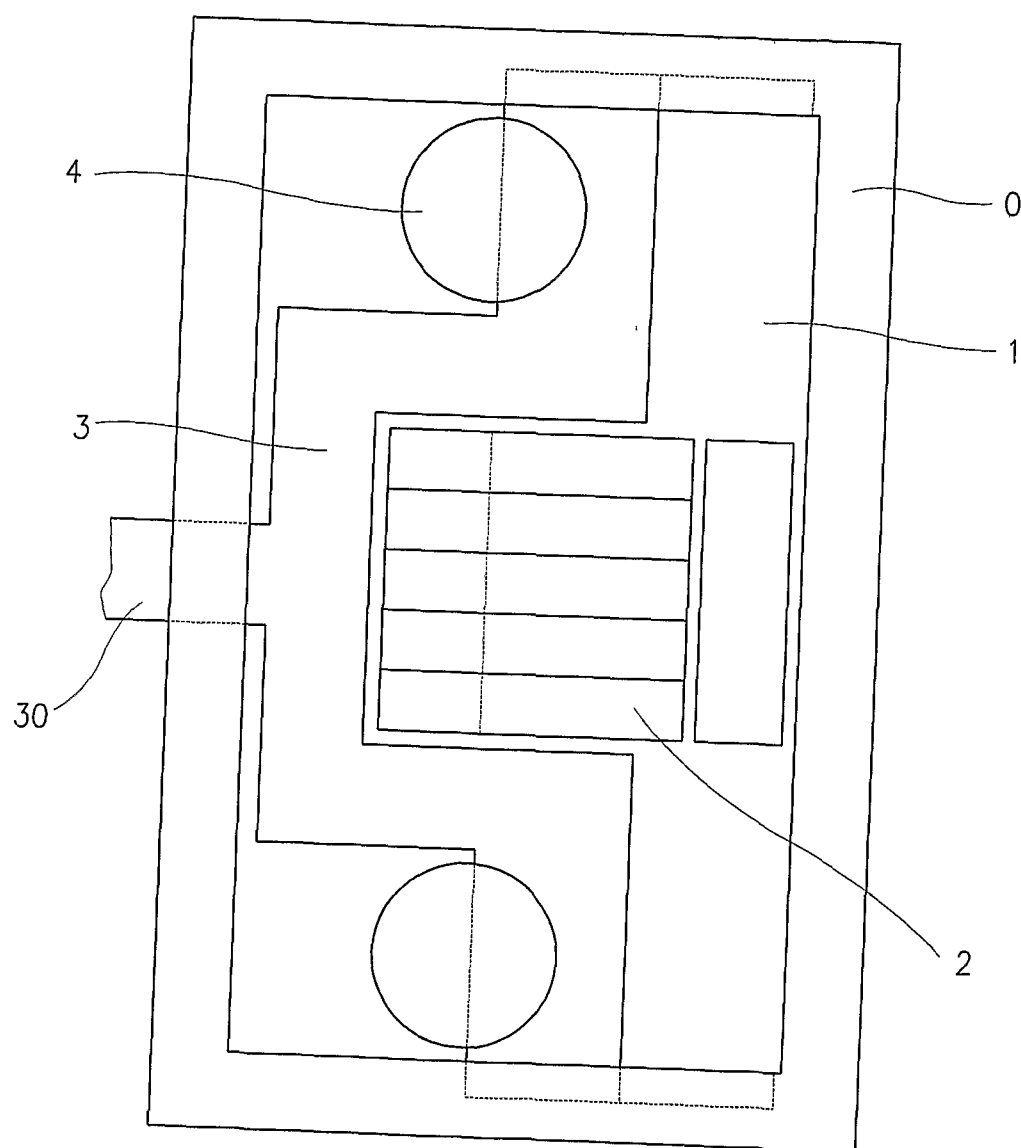


Fig. 10

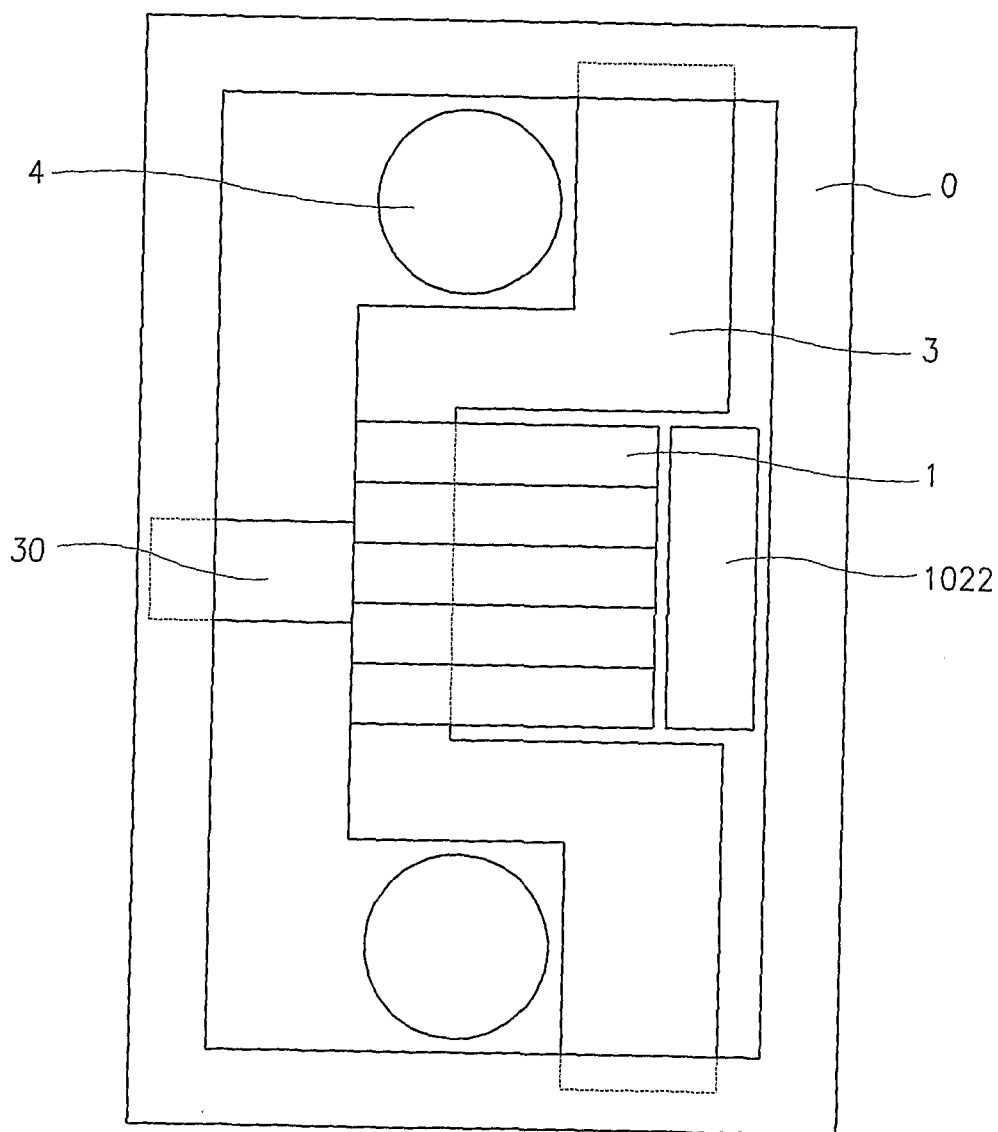


Fig. 11

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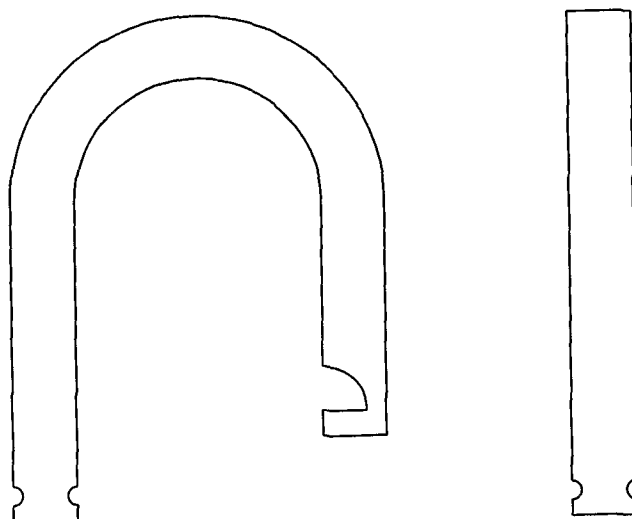


Fig. 12

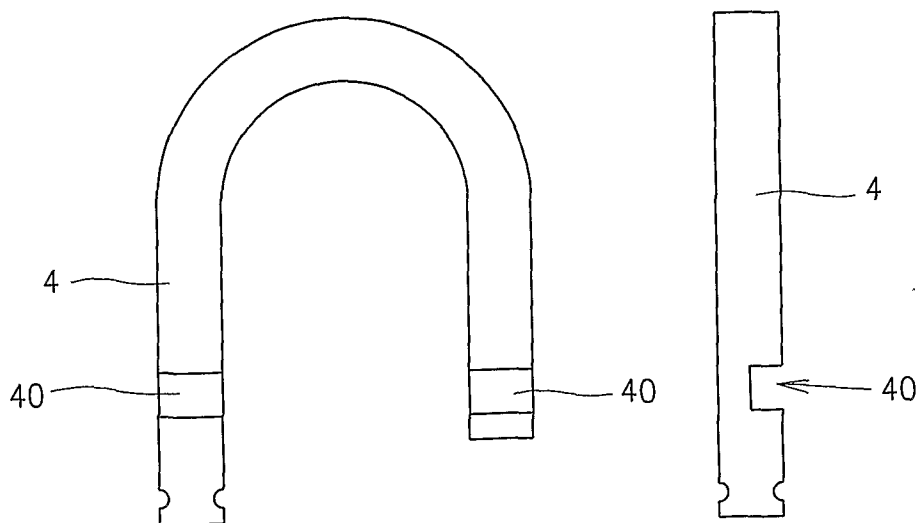


Fig. 13

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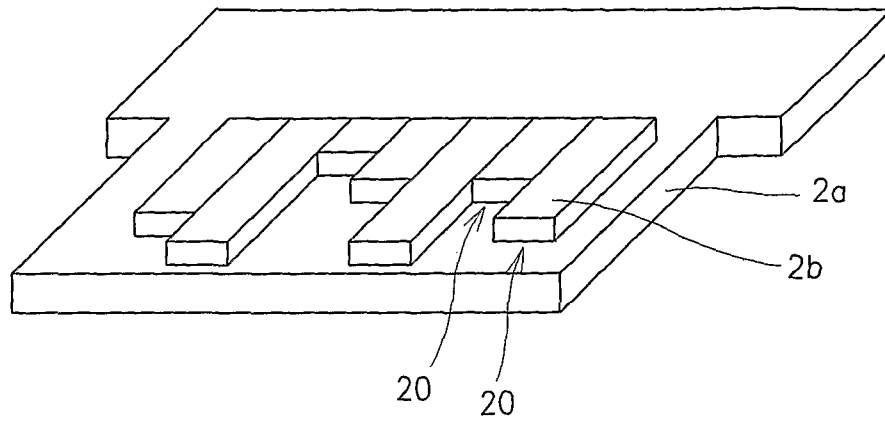


Fig. 14

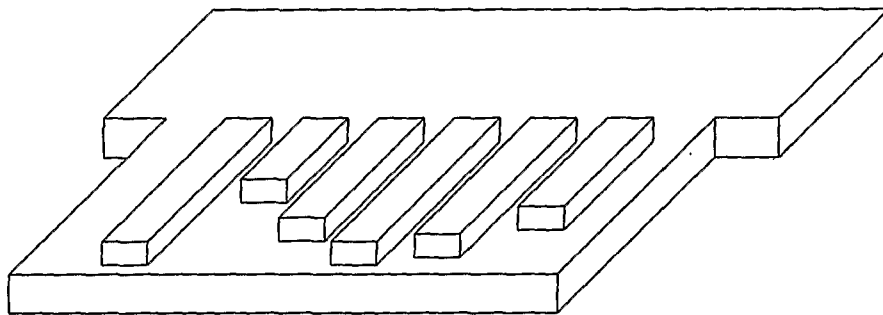


Fig. 15

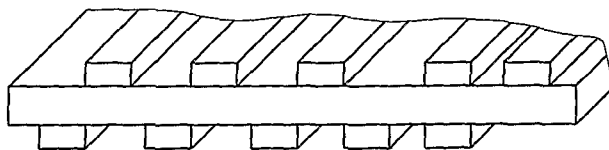


Fig. 16

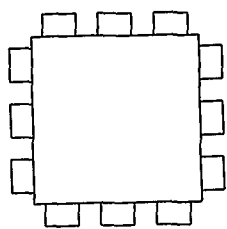


Fig. 16a

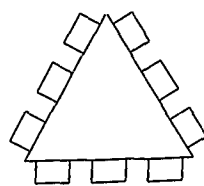


Fig. 16b

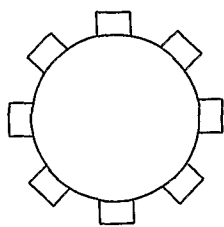


Fig. 16c

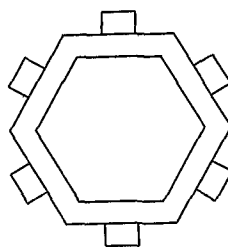


Fig. 16d

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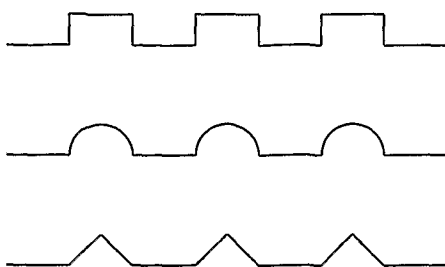


Fig. 17



Fig. 18



Fig. 19



Fig. 20

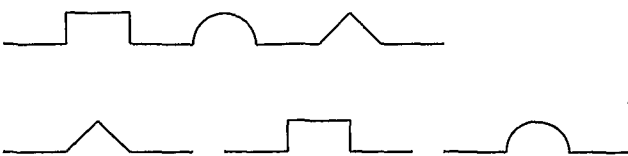


Fig. 21

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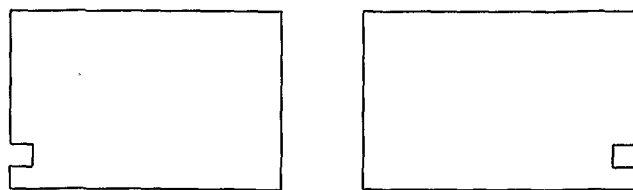


Fig. 22

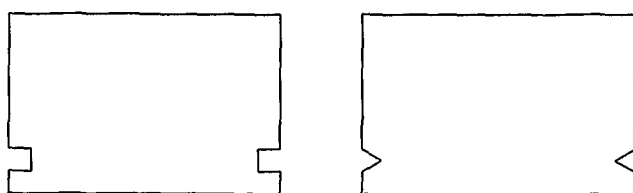


Fig. 23

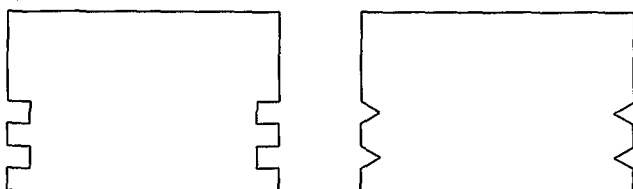


Fig. 24

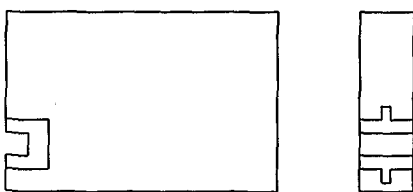


Fig. 25



Fig. 26

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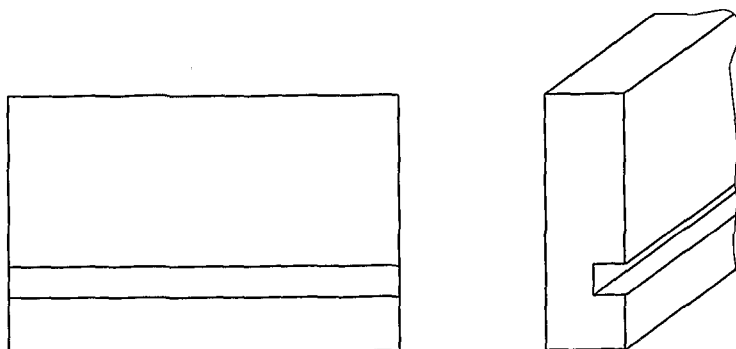


Fig. 27

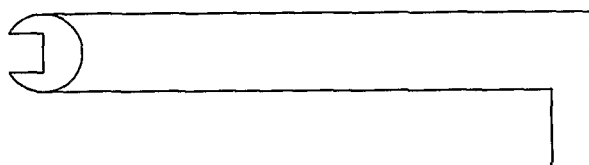


Fig. 27a

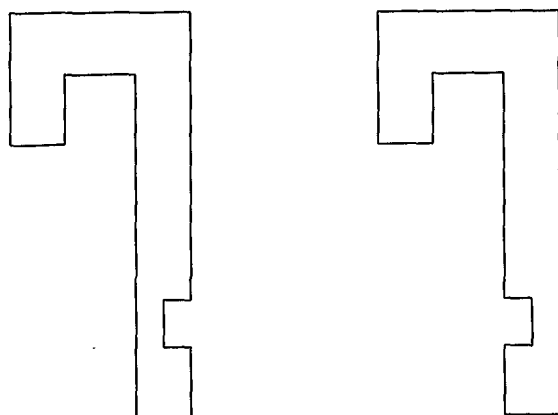


Fig. 27b

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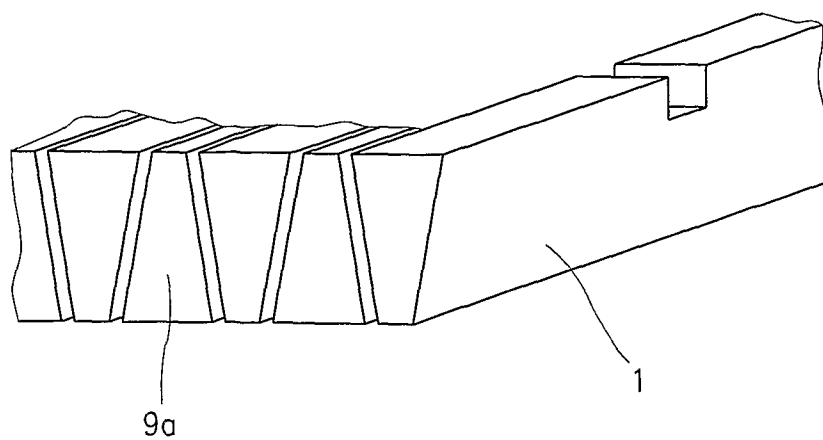


Fig. 28a

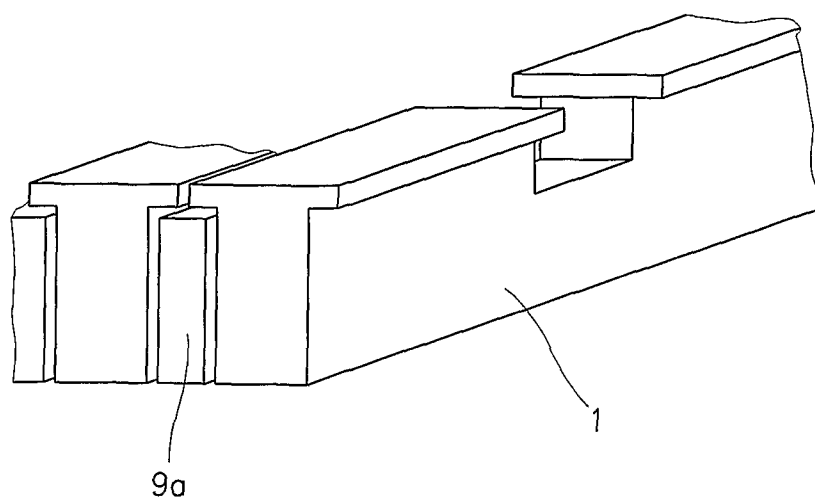


Fig. 28b

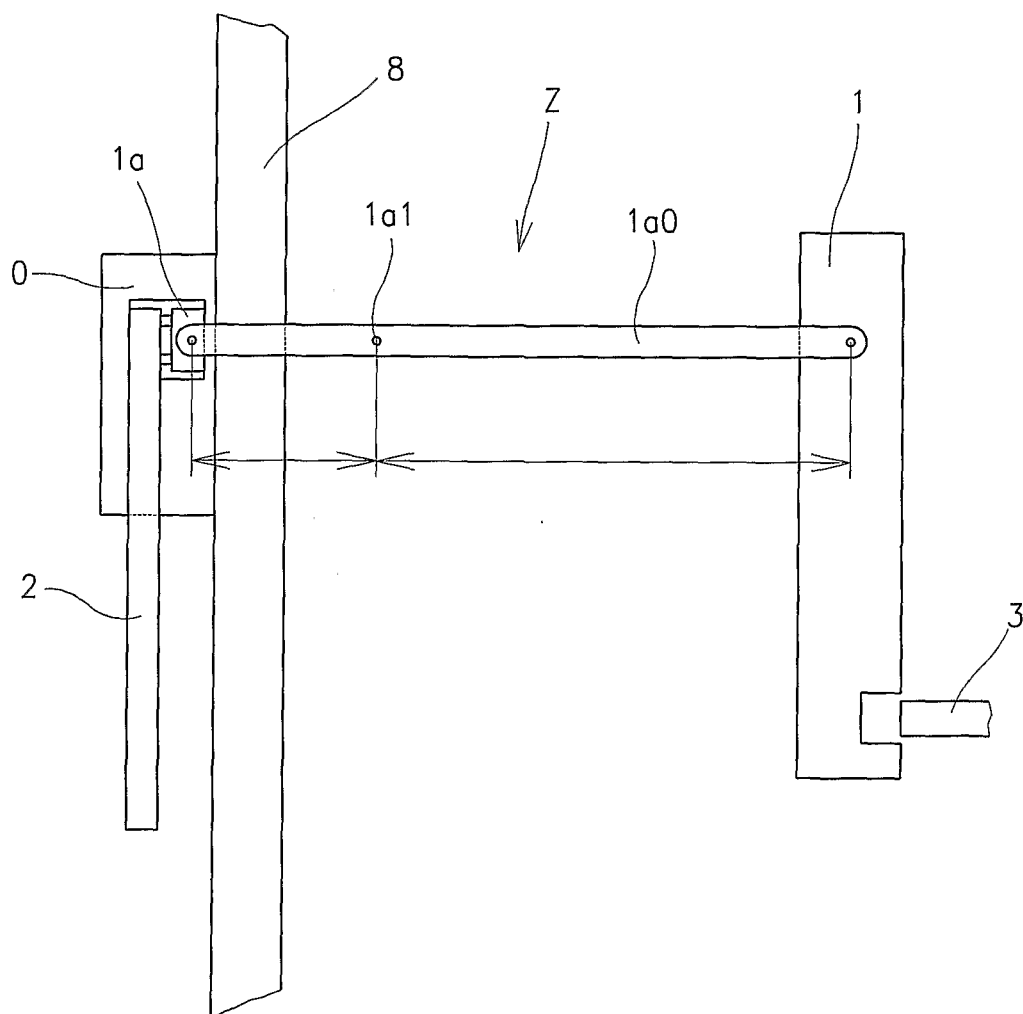


Fig. 29