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(54) **Portable, adjustable exercise step/bench**

Tragbare, verstellbare Übungsstufenbank

Banc d'exercice portable et réclable

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**Description****Background of Invention**

[0001] Various devices exist for use in an aerobic exercise program. One type of device which has met with great success is a bench or step for aerobic step climbing. For example, I have developed a form of single step climbing during which the user would repeatedly step up and down from a single step. An important feature for making the device capable for widespread appeal to permit it to be customized to the needs of the particular user in height adjustability. In my U.S. Patent 4,340,218 I disclose one manner of achieving this height adjustability. Other later patents of mine disclose useful variations for accomplishing that result.

**Summary of Invention**

[0002] An object of this invention is to provide an exercise device for simulating climbing which is compact and lightweight and capable of being conveniently stored and transported.

[0003] A further object of this invention is to provide such a device which may offer a wide variety of incremental heights, that are easily and quickly adjustable, to accommodate the needs of the particular user.

[0004] A further object of this invention is to provide an unobstructed platform surface so that the user can safely step on and off in any direction.

[0005] A still further object is to provide such a device which may be mass produced inexpensively in a simple design.

[0006] A yet further object of this invention is to provide such a device which may be used as an elevated platform for warmup exercises.

[0007] In order to achieve the above objects, an exercise device as set forth in claim 1 is provided.

[0008] Preferred embodiments of the invention are claimed in the dependent claims.

[0009] In a preferred practice of this invention, the legs are detachably mounted to guides at the corners of the base member. The guides may be in the form of tracks, grooves, channels, holes or post/holes. During the stored condition the legs may be removed and mounted to the base member itself. In an alternative form of this invention the legs may be hinged to the base member at the corners to be movable to and from an active position where the legs support the base member and a stored condition where the legs are hinged into contact with the lower surface of the platform.

**The Drawings:****[0010]**

Figure 1 is a side elevation view partly broken away of an exercise device in accordance with this inven-

tion;

Figure 2 is a top plan view of the exercise device shown in Figure 1;

Figure 3 is an end elevation view of the exercise device shown in Figures 1-2;

Figure 4 is a bottom plan view of the exercise device shown in Figures 1-3;

Figure 5 is a cross-sectional view taken through Figure 2 along the line 5-5;

Figure 5A is a view similar to Figure 5 of a modified device of this invention;

Figure 6 is an end elevation view of the device shown in Figure 5;

Figure 7 is a bottom plan view of the device shown in Figure 5;

Figure 8 is a side elevation view partly broken away of a portion of the device shown in Figures 1-4 and further illustrating a support post;

Figure 9 is a side elevation view of a detachable leg for a device in accordance with this invention;

Figure 10 is a side elevation view in section of the embodiment shown in Figure 9;

Figure 11 is a top plan view partly broken away showing a pouch for holding sets of legs usable with the device of this invention;

Figure 12 is a side elevation view partly in section of an alternative device in accordance with this invention;

Figure 13 is an end elevation view of the device of Figure 12;

Figure 14 is a side elevation view partly in section of a further alternative device in accordance with this invention;

Figure 15 is an end elevation view of the device of Figure 14; and

Figure 16 is a top plan view of the device of Figures 14-15.

**Detailed Description**

[0011] Figures 1-4 illustrate an exercise device 10 for simulating climbing. Exercise device 10 is particularly constructed to be used for single step climbing and aerobic exercise programs wherein the user would repeatedly step onto and off from a base 12 which functions as a step or bench. Base 12 includes a horizontal platform 14 having a pair of end walls interconnected by a pair of side walls. A downwardly and outwardly extending apron 16 is connected to the edge of the end and side walls at an angle with respect to horizontal platform 14. As illustrated, each corner 18 of apron 16 is of rounded configuration to eliminate sharp edges. A leg 20 is provided at each corner to elevate platform 14. Each leg 20 would be disposed at the same angle that apron 16 is inclined. For example, as shown in Figure 1 leg 20 (and apron 16) is at an angle A with respect to the side wall of platform 14. Figure 3 shows leg 20 to be at an angle B with respect to the end wall of platform 14. An-

gles A and B are greater than 0° and less than 90° so as to be non-horizontal and non-vertical. Preferably both A and B are between 10° and 30° and most preferably about 20°.

**[0012]** The invention may be practiced by having the legs hinged to base 12 so as to be moved from an active supporting position to an inactive stored condition. Alternatively, the legs may be completely detachable to be selectively moved to the two positions. Additionally, in the preferred practice of this invention, the effective length of each leg is adjustable to provide the ability to vary the height of platform 14.

**[0013]** In the embodiment of the invention illustrated in Figures 1-4 legs 20 are in the form of an inner tube 22 telescopically mounted in an outer tube 24. Outer tube 24 includes a series of holes 26. See for example, Figure 5. Inner tube 22 would have a spring loaded pin 28 disposed for engagement in a selective hole. Holes 26 are spaced apart to provide, for example, two inch incremental height adjustment of platform 14. A mounting bracket 30 is provided at each corner 18 of base 12. Pivot shaft 32 is located in corresponding holes in mounting bracket 30 to permit each leg 20 to pivot from its support position shown in solid in Figure 5 to its stored condition shown in phantom in Figure 5 and shown in solid in Figure 7. Snap clips 34 are provided on apron 16 to hold each leg 20 in its support or active position. Similarly, snap clips 36 are provided on the underside of platform 14 to hold the legs 20 in their stored condition. Each leg 20 rotates about its axis a distance greater than 90° and preferably 110° to and from its stored and active positions.

**[0014]** As also illustrated a foot 38 is mounted on each leg 20 by being telescoped over inner tube 22. If desired foot 38 may be molded integrally with leg 20. Foot 38 serves the multiple functions of adding additional height to platform 14 and also by making foot 38 of a non-slip material the device 10 is less likely to slide or slip during the exercise program. Further because foot 38 is wider than leg 20, foot 38 also provides added stability. Similarly, a non-slip material 40 is provided on the upper surface of platform 14 to reduce the possibility of the user slipping when stepping up and down from platform 14. Alternatively, a non-slip surface may be provided by molding a non-slip design on the top surface of platform 14.

**[0015]** Indentations 41 may be molded at some or all of the corners of the upper surface of platform 14. Indentations 41 would function as entitlements to permit advertising bearing inserts to be mounted in indentation 41. The invention may be practiced with indentations 41 being in any exposed surface of base 12, including apron 16. Preferably each advertising insert would be flush with that surface of base 12.

**[0016]** Not only does each leg 20 extend downwardly at an angle of A and B in the elevation view, but also as shown in Figure 4 each leg is at an angle C in the plan view with respect to the respective side and end walls

of platform 14. Angle C is greater than 0° and less than 90° and is preferably 45°.

**[0017]** As also shown, for example, in Figures 1 and 2 a slot 42 is provided in one portion of apron 16 to act as a convenient handle for carrying the device, particularly when legs 20 are mounted in the stored condition within the periphery of apron 16 against the underside of platform 14. Alternatively, a carrying strap or handle may be utilized instead of slot 42.

**[0018]** Figures 1, 4 and particularly Figure 8 illustrate a further feature of this invention wherein an opening 44 is provided in platform 14. A tubular sleeve 46 is secured against opening 44 as best shown in Figure 8. Sleeve 46 functions to hold a steady post 48 mounted therein so that the user would have something to hold while performing the exercise. It is emphasized, however, that device 10 generally presents an unobstructed platform to facilitate the user stepping up and down from platform 14 in any direction from either end or either side of platform 14. Thus, steady post 48 is an optional feature which may be completely omitted. Where steady post 48 is included it is preferred that only a single such member be provided.

**[0019]** If desired a steady post could be mounted to base 12 by means of an external bracket secured generally at the juncture of apron 16 and an end edge of platform 14 rather than having the hole 44 and sleeve 46.

**[0020]** In the preferred practice of this invention apron 16 is a continuous apron or skirt which extends completely around the periphery of platform 14. The invention, however, may be practiced by having open areas in apron 16A such as at the corners where the legs 20 would be located, as shown in Figure 5A. In this embodiment the bracket 30 could abut against the underside of the platform to limit the outward pivoting of legs 20. Since the lower or remote edge of the extensions which form apron 16A would function as the support in the lowest position of the platform, a non-slip gasket could be mounted on the remote edge. Where there is an open area at each corner, the result would be that apron 16A would comprise four spaced extensions acting as fixed legs in the lowest position of the platform. The invention may also be practiced with the extensions or fixed legs at any spaced locations including the corners with the pivoted legs inwardly thereof.

**[0021]** Although the embodiment of Figures 1-7 illustrate legs 20 to be hinged, in a particularly advantageous practice of this invention, legs 50 are provided which are completely detachably secured to base 12 as illustrated in Figures 9-10. In this embodiment, legs 50 are held by guides 52 integrally formed with base 12. For example, guides 52 may be in the form of channels, grooves, brackets, tracks, post/holes or pockets integrally molded during the same operation in which base 12 is molded. A series of spaced holes 54 would be provided in these guides 52 for reception of spring pin 56 on leg 50 so as to vary the amount of extension of leg 50 from

guide 52 which in turn would control the height of platform 14. Holes 54 preferably provide two inch height adjustment.

**[0022]** As shown in Figure 10 mounting devices such as spring clamps 58 are secured to the inner surface of apron 16 so that legs 50 may be mounted to base 12 during the stored condition of the legs. Similarly, such spring clamps 58 may also be used to store legs of one size while legs of another size are mounted in guides 52 during the active or support condition of the legs. The stored legs may be mounted to the underside of platform 14 or the inside of apron 16. If desired clamps or grooves could be molded to apron 16 to store the legs.

**[0023]** Figure 11 illustrates a further feature of this invention wherein a storage pouch 60 is provided of a size and shape to package or hold sets of legs 50. The storage pouch could include for example an openable flap 62 having a hook and loop material, such as sold under the trademark VELCRO, strip 64 for selective opening and closing of the flap to provide or prevent access to the legs stored in pouch 60. Pouch 60 could be placed within the periphery of apron 16 during the transport and storage of device 10.

**[0024]** Legs 50 may be of singular tubular construction or legs 50 may also take the same form as legs 20 to provide added length adjustment. In this respect, legs 50 could be formed as an inner tube telescopically mounted in an outer tube.

**[0025]** A further feature of this invention is the provision of spring members in the legs 20 or 50 to lessen the climbing impact when the user steps onto platform 14. The spring members would also provide energy return to produce a bounce effect.

**[0026]** In the preferred practice of this invention apron 16 would be dimensioned so that when apron 16 is placed directly on the floor platform 14 would be disposed 4 inches above the floor. Apron 14 may be provided with an edge made of a non-slip material such as rubber to facilitate the use of base 12 being placed directly on the floor where the exercise program would have the user step at a height of 4 inches. Apron 16 may, for example, have rubber grommets 66 at the corners as shown in Figure 8. Device 10 is so constructed that the height of platform 14 above the floor could be incrementally increased by two inch increments from four inches to 14 inches. For example, for beginners an exercise program might require a height in the range of 4-10 inches whereas an advanced program might require a height of 10-14 inches. Accordingly, the minimum height of four inches could be achieved by mounting base 12 directly on the floor without the use of any legs or feet. Feet 38 could be dimensioned to add, for example, one inch elevation. In the preferred practice of this invention two sets of legs having differing lengths would be provided. For example, the shorter set of legs could be utilized for the beginner program and the longer set of legs for the advanced program. The 2 inch increments could be achieved by providing extendability of

each set of legs in 2 inch increments and then shifting from one set of legs to another when a greater or lesser height is required. In the preferred practice of this invention, platform 14 would be dimensioned longer and wider than a conventional stool and would, for example, be 28 x 14 inches with a height of 4 inches because of its angled apron 16.

**[0027]** Platform 14 could be given added strength by forming ribs on its underside.

**[0028]** If desired, each foot 38 could be mounted to its leg in the same manner that the leg is mounted to the base by having adjustable telescopic positioning of each foot over its respective leg. This would likewise provide for additional height flexibility.

**[0029]** In use the exercise program could thus be performed by using the base alone or by using the base with short legs or by using the base with short extended legs or by using the base with long legs or by using the base with long extended legs or by additionally providing feet including adjustably mounted feet on the legs.

**[0030]** Device 10 may be formed in any suitable manner. In the preferred practice of the invention device 10 is made from a plastic material which is injected or blow molded. Device 10 may however be stamped from a metal material. An advantage of the tapered apron 16 is that a plurality of such devices may be stacked within each other.

**[0031]** Figures 12-13 show a further embodiment wherein device 10A includes a pair of legs 68,68 at each end of base 12 integrally connected to each other by a single foot 70 having non-slip end caps 72,72. This embodiment illustrates that the legs may but need not be secured at the corners of base 12. As shown in Figure 13 the legs 68,68 are mounted inwardly of corners 18,18. The U-shaped unit comprising legs 68,68 and foot 70 may be mounted in any suitable manner. As shown in Figure 12 each leg 68 is inserted into a channel 74 integral with apron or skirt 16 and is selectively held in position by spring pin 76 engaged in one of a selected number of holes in channel 74.

**[0032]** Figures 14-16 illustrate yet other variations of this invention. As shown therein with device 10B a single wide leg 78 is provided at each end of base 12. An elongated foot 80 is integral with leg 78. End caps made of non-slip material may be mounted on foot 78 or the ends 82 may simply be rounded.

**[0033]** Figure 14 illustrates a particularly advantageous manner of mounting the legs to provide height adjustability. Instead of having a series of holes for adjustability at least two side by side slots or channels 84,86 are integrally formed on apron 16. The channels are made of different lengths. For example, when leg 78 is inserted completely into long channel 84, it will elevate platform another two inches. When, however, leg 78 is completely inserted into short channel 86, platform 14 will be elevated four inches. Leg 78 may be locked into a respective channel in any suitable manner such as by spring pin 88 on leg 78 snapping into a hole 90 in the

channel wall. This manner of height adjustability may, of course, be utilized in the other embodiments.

**[0034]** Other variations illustrated in Figures 14-16 include the provision of indents 92 in the opposite ends of apron 16. Indents 92 may be used to grasp base 12 when carrying the device. As illustrated in Figure 16, platform 14 need not be rectangularly shaped. As shown the side walls of base 12 are inwardly bowed. If desired the ends and/or sides of base 12 may be inwardly or outwardly bowed.

**[0035]** The dimensioning of the platform, particularly with no above surface frame so that it is unobstructed on all four sides is particularly advantageous for aerobic routines. The invention can be practiced by having, for example, a single base with two sets of extensions or if desired by having two bases each with its own extensions for legs.

**[0036]** As can be appreciated, device 10 thus provides an exercise device wherein the height can be readily varied in a number of different manners. Moreover, by being able to store the legs within the periphery of the apron the resultant device is compact, lightweight and space saving.

## Claims

1. An exercise device (10) for use in aerobic step climbing including a base (12) consisting of a horizontal platform (14) having opposite ends and intermediate sides, legs (20;50;68;78) adapted to be mounted to said base (12) for selectively providing a plurality of different elevations to said platform (14), characterised in that said platform has a downwardly extending apron (16;16A) and wherein one of said base (12) and said legs (20;50;68;78) has at least two different means for mounting each of said legs (20;50;68;78) to said base, whereby said legs (20;50; 68;78) selectively elevate said platform (14) to different heights in accordance with which one of said different means is used for mounting said legs (20;50;68;78) to said base (12).
2. The device (10) as set forth in claim 1 wherein said apron extends from each of said ends and sides of said platform, and said base (12) comprising a corner where each of said ends is joined to its adjacent side, said apron (16) being disposed at an elevation and plan view angle from greater than 0° to less than 90° with respect to said platform (14), a leg (20; 50) is mounted to said base (12) at each of said corners, each of said legs (20; 50) being movable from an active position to a stored condition, each of said legs being disposed against said apron (16) at said angle and extending downwardly beyond said apron when said leg is in said active position, and each of said legs (20; 50) being mounted against said base (12) within the periphery of said apron when said leg is in said stored condition.
3. The device (10) of claim 1 or 2 wherein each of said legs comprises an inner tube telescopically mounted within an outer tube, and incremental locking means connecting said inner tube to said outer tube to control the effective length of said leg.
4. The device (10) of any of Claims 1-3 wherein each of said legs (20) is hinged to said base (12) to be movable to and from said active position and said stored condition.
5. The device (10) of any of Claims 1-4 including mounting means on the under surface of said platform (14) for maintaining each of said legs (20) in its stored condition when each of said legs is hinged from its active position in contact with said apron to its stored condition in contact with the under surface of said platform (14).
6. The device (10) of claim 1, wherein said at least two mounting means includes at least two sets of channels in said base (12), each of said sets comprising at least two side by side parallel channels formed in said base (12) at opposite portions of said periphery, each of said channels in each of said sets being of differing depth than each other whereby a leg may be selectively detachably received in each of said channels to provide said platform (14) with at least three levels of height adjustability wherein there is one height level when no leg is in any channel and said apron (16; 16A) is placed directly on a support surface and there are other height levels in accordance with which channel a leg is inserted.
7. The device of Claim 6 including locking elements in each of said channels for detachably locking a leg therein.
8. The device of Claim 6 wherein a set of said channels is provided at each corner of said base (12) where a respective one of said ends and intermediate sides intersect.
9. The device (10) of any of Claims 1-5 wherein said at least two mounting means comprises at least two receiving means one of said receiving means is disposed closer to said platform (14) than the other of said receiving means, said platform having an undersurface, said one receiving means including said undersurface as its top wall whereby its respective leg is disposed against said undersurface when said leg is received by said one receiving means, said receiving means being located at different distances from the ends of said apron (16), two sets of said receiving means being at each end

of said base (12) with one of each of said receiving means being generally located at each of said corners but inwardly of its corner, said legs comprising a set of two legs at each end of said base, a foot being integrally joined to its set of two legs to form a U-shaped unit, a non-slip material being on the lower surfaces of said apron and of said legs, said non-slip material on said lower surface of said apron being located generally at each of the corners of said lower surface, and a non-skid material being on the upper surface of said platform.

### Patentansprüche

1. Übungsvorrichtung (10) zur Verwendung beim aerobischen "Step" oder Stufensteigen, wobei Folgendes vorgesehen ist: eine Basis (12) bestehend aus einer horizontalen Plattform (14) mit entgegengesetzt liegenden Enden und dazwischen liegenden Seiten und mit Beinen (20; 50; 68; 78) geeignet zur Anbringung auf der Basis (12) zum selektiven Vorsehen einer Vielzahl von unterschiedlichen Höhen oder Höhenlagen für die Plattform (14), dadurch gekennzeichnet, dass die Plattform einen sich nach unten erstreckenden Schürzenteil (16; 16a) aufweist, und wobei die Basis (12) und/oder die Beine (20; 50; 68; 78) mindestens zwei unterschiedliche Mittel zur Anbringung jedes der Beine (20; 50; 68; 78) an der Basis aufweisen, wodurch die Beine (20; 50; 68; 78) selektiv die Plattform (14) auf unterschiedliche Höhen anheben, und zwar entsprechend einem der erwähnten unterschiedlichen Mittel, das zur Anbringung der Beine (20; 50; 68; 78) an der Basis (12) verwendet wird.
2. Vorrichtung (10) nach Anspruch 1, wobei der Schürzenteil sich von jedem der erwähnten Enden und Seiten der Plattform erstreckt, und wobei die Basis (12) eine Ecke aufweist, wo jedes der Enden mit seiner benachbarten Seite verbunden ist, wobei der Schürzenteil (16) auf einer Höhe und einem Draufsichtswinkel von größer als 0 Grad bis weniger als 90 Grad bezüglich der Plattform (14) angeordnet ist, wobei ein Bein (20; 50) an der Basis (12) an jeder der Ecken angebracht ist, wobei eines der Beine (20; 50) aus einer aktiven Position in einen Aufbewahrungszustand bewegbar ist, wobei jedes der Beine an dem Schürzenteil (16) angeordnet ist, und zwar mit dem erwähnten Winkel und sich nach unten über den Schürzenteil dann hinauserstrecken, wenn das Bein sich in der aktiven Position befindet, und wobei ferner jedes der Beine (20; 50) an der erwähnten Basis (12) angebracht ist, und zwar innerhalb des Umfangs des Schürzenteils dann, wenn das Bein sich in dem aufbewahrten Zustand befindet.

3. Vorrichtung (10) nach Anspruch 1 oder 2, wobei jedes der Beine ein Innenrohr aufweist, und zwar teleskopisch angebracht innerhalb eines Außenrohres, und ferner mit inkrementalen Verriegelungsmitteln, die das Innenrohr mit dem Außenrohr verbinden, um die effektive Länge des Beines zu steuern.
4. Vorrichtung (10) nach einem der Ansprüche 1 bis 3, wobei jedes der Beine (20) an der erwähnten Basis (12) angelenkt ist, um in und aus der aktiven Position und dem Aufbewahrungszustand bewegt zu werden.
5. Vorrichtung (10) nach einem der Ansprüche 1 bis 4 einschließlich Befestigungsmitteln an der unteren Oberfläche (Unterseite) der Plattform (14) zum Halten der Beine (20) in ihrem Aufbewahrungszustand dann, wenn jedes der Beine angemäÙig aus seiner aktiven Position in Kontakt mit dem Schürzenteil in den Aufbewahrungs- oder Speicherzustand in Kontakt mit der Unterseite der Plattform (14) bewegt oder verschränkt wird.
6. Vorrichtung (10) nach Anspruch 1, wobei mindestens zwei Befestigungsmittel mindestens zwei Sätze von Kanälen in der Basis (12) aufweisen, wobei jeder der erwähnten Sätze mindestens zwei Seite an Seite parallele Kanäle ausgebildet in der Basis (12) an entgegengesetzten Teilen des Umfangs aufweist, wobei jeder der Kanäle in jedem der Sätze voneinander unterschiedliche Tiefen besitzt, wodurch ein Bein wahlweise abnehmbar in jedem der Kanäle aufnehmbar ist, um die Plattform (14) mit mindestens drei einstellbaren Höhenniveaus zu versehen, wobei ein Höhenniveau vorhanden ist, wenn kein Bein in irgendeinem Kanal ist und der Schürzenteil (16; 16a) direkt auf einer Tragoberfläche plaziert ist, und wobei ferner andere Höhenniveaus entsprechend des Kanals in den ein Bein eingesetzt ist, vorgesehen sind.
7. Vorrichtung nach Anspruch 6, wobei Verriegelungsmittel in jedem der Kanäle vorgesehen sind, um ein Bein lösbar darin zu verriegeln.
8. Vorrichtung nach Anspruch 6, wobei ein Satz der erwähnten Kanäle an jeder Ecke der Basis (12) vorgesehen ist, wo sich ein entsprechendes Ende der Enden und Zwischenseiten schneiden.
9. Vorrichtung (10) nach einem der Ansprüche 1 bis 5, wobei die erwähnten mindestens zwei Befestigungsmittel mindestens zwei Aufnahmemittel aufweisen, wobei eines der Aufnahmemittel dichter zur Plattform (14) hin angeordnet ist als das andere der Aufnahmemittel, wobei die Plattform eine untere Oberfläche (Unterseite) aufweist, und wobei das eine Aufnahmemittel die erwähnte Unterseite als ihre

obere Wand besitzt, wodurch sein entsprechendes Bein an der erwähnten Unterseite angeordnet ist, wenn das Bein durch das erwähnte eine Aufnahmemittel aufgenommen ist, wobei die Aufnahmemittel mit unterschiedlichen Abständen von den Enden des Schürzenteils (16) angeordnet sind, wobei zwei Sätze der erwähnten Aufnahmemittel an jedem Ende der Basis (12) vorgesehen sind, und wobei eines jedes der Aufnahmemittel im Allgemeinen an jeder der Ecken, also nach innen von seiner Ecke angeordnet ist, und wobei ferner die Beine einen Satz von zwei Beinen an jedem Ende der Basis aufweisen, einen Fuß integral verbunden mit seinem Satz von zwei Beinen zur Bildung einer U-förmigen Einheit, ferner mit einem Antirutschmaterial an den Unterseiten des Schürzenteils und der Beine, wobei das Antirutschmaterial an der Unterseite des Schürzenteils im Allgemeinen an jeder der Ecken der Unterseite vorgesehen ist und ein Nichtgleitmaterial an der Oberseite der Plattform.

### Revendications

1. Dispositif d'entraînement (10) destiné à être utilisé pour grimper sur un marchepied d'aérobic comprenant un plateau (12) consistant en une plate-forme horizontale (14) ayant des extrémités opposées et des côtés intermédiaires, des pieds (20 ; 50 ; 68 ; 78) adaptés à être montés sur le plateau (12) pour conférer sélectivement une pluralité de hauteurs différentes à la plate-forme (14),

caractérisé en ce que la plate-forme comprend un bandeau s'étendant vers le bas (16 ; 16A), et en ce que le plateau (12) et/ou les pieds (20 ; 50 ; 68 ; 78) comportent au moins deux moyens différents pour monter chacun des pieds (20 ; 50 ; 68 ; 78) sur le plateau, d'où il résulte que les pieds (20 ; 50 ; 68 ; 78) surélèvent sélectivement la plate-forme (14) à diverses hauteurs selon celui des différents moyens utilisés pour monter les pieds (20 ; 50 ; 68 ; 78) sur le plateau (12).

2. Dispositif (10) selon la revendication 1, dans lequel le bandeau s'étend à partir de chacune des extrémités et des bords de la plate-forme et le plateau (12) comprend un coin au niveau duquel chacune des extrémités est reliée à son bord adjacent, le bandeau (16) étant disposé à une hauteur et selon un angle allant de plus de 0° à moins de 90° par rapport à la plate-forme (14), un pied (20 ; 50) est monté sur le plateau (12) au niveau de chacun des coins, chacun des pieds (20 ; 50) étant mobile entre une position active et un état de rangement, chacun des pieds étant disposé contre le bandeau (16) audit angle et s'étendant vers le bas au-delà du bandeau quand le pied est dans sa position active, et chacun des pieds (20 ; 50) étant monté contre le

plateau (12) à l'intérieur du périmètre du bandeau quand le pied est dans son état de rangement.

3. Dispositif (10) selon la revendication 1 ou 2, dans lequel chacun des pieds comprend un tube interne monté de façon télescopique dans un tube externe, et un moyen de verrouillage par incréments reliant le tube interne au tube externe pour fixer la longueur effective du pied.

4. Dispositif (10) selon l'une quelconque des revendications 1 à 3, dans lequel chacun des pieds (20) est articulé sur le plateau (12) pour être mobile de sa position active à sa position de rangement et inversement.

5. Dispositif (10) selon l'une quelconque des revendications 1 à 4, comprenant des moyens de montage sur la surface inférieure de la plate-forme (14) pour maintenir chacun des pieds (20) dans son état de rangement quand chacun des pieds est articulé de sa position active en contact avec le bandeau à son état de rangement en contact avec la surface inférieure de la plate-forme (14).

6. Dispositif (10) selon la revendication 1, dans lequel au moins deux moyens de montage comprennent au moins deux ensembles de canaux dans le plateau (12), chacun des ensembles comprenant au moins deux canaux parallèles côte à côte formés dans le plateau (12) à des positions opposées de la périphérie, chacun des canaux dans chacun des ensembles ayant une profondeur différente de l'autre, d'où il résulte qu'un pied peut être reçu sélectivement de façon amovible dans chacun des canaux pour conférer à la plate-forme (14) au moins trois niveaux de réglage de hauteur, parmi lesquels il existe un niveau de hauteur dans lequel aucun pied ne se trouve dans un canal et le bandeau (16, 16A) est placé directement sur une surface support et deux autres niveaux de hauteur en fonction du canal dans lequel un pied est inséré.

7. Dispositif selon la revendication 6, comprenant des éléments de verrouillage dans chacun des canaux pour bloquer de façon détachable un pied dans un canal.

8. Dispositif selon la revendication 6, dans lequel un ensemble de canaux est prévu à chaque coin du plateau (12), là où l'une respective des extrémités et l'un des côtés intermédiaires se coupent.

9. Dispositif (10) selon l'une quelconque des revendications 1 à 5, dans lequel lesdits au moins deux moyens de montage comprennent au moins deux moyens de réception, l'un des moyens de réception étant disposé plus près de la plate-forme (14) de

l'autre moyen de réception, la plate-forme ayant une face inférieure, le premier moyen de réception comprenant la surface inférieure comme paroi supérieure, d'où il résulte que son pied respectif est disposé contre la surface inférieure quand le pied est reçu par ledit premier moyen de réception, le moyen de réception étant disposé à des distances distinctes des extrémités du bandeau (16), deux ensembles de moyens de réception se trouvant à chaque extrémité du plateau (12), l'un de chacun des moyens de réception étant de façon générale disposé à chacun des coins mais à l'intérieur de ce coin, les pieds comprenant un ensemble de deux pieds à chaque extrémité du plateau, une semelle étant intégralement liée à son ensemble de deux pieds pour former un ensemble en U, un matériau anti-dérapant se trouvant sur les surfaces inférieures du bandeau et des pieds, le matériau anti-dérapant sur la surface intérieure du bandeau étant de façon générale disposé à chacun des coins de la surface inférieure, et un matériau anti-dérapant se trouvant sur la surface supérieure de la plate-forme.

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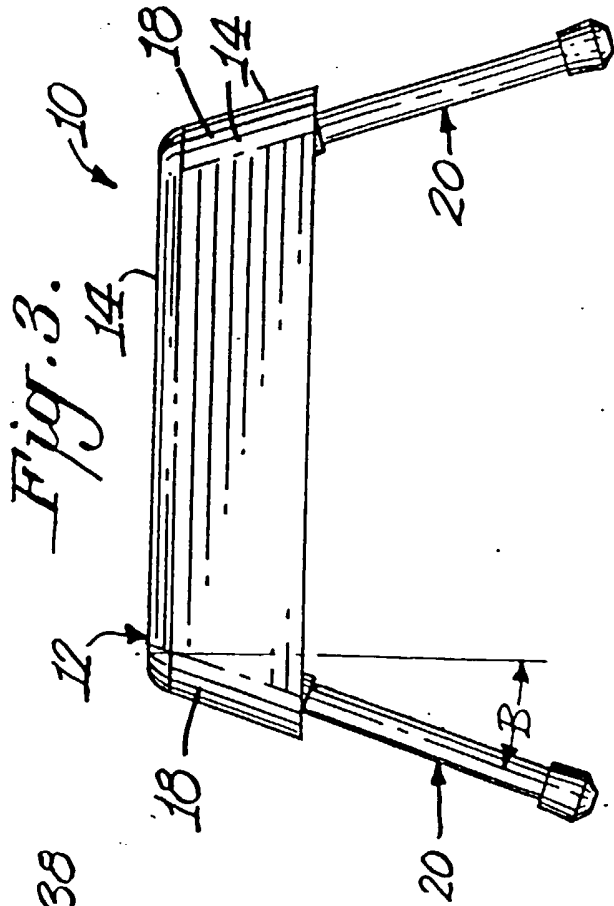
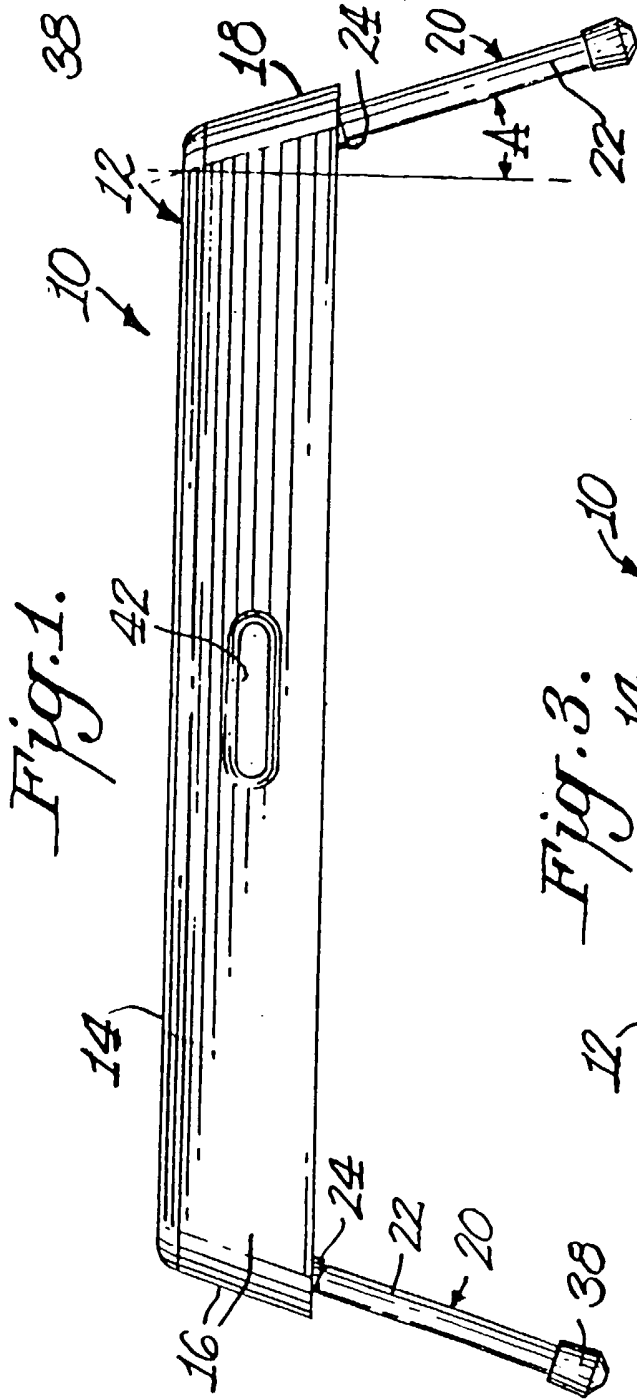
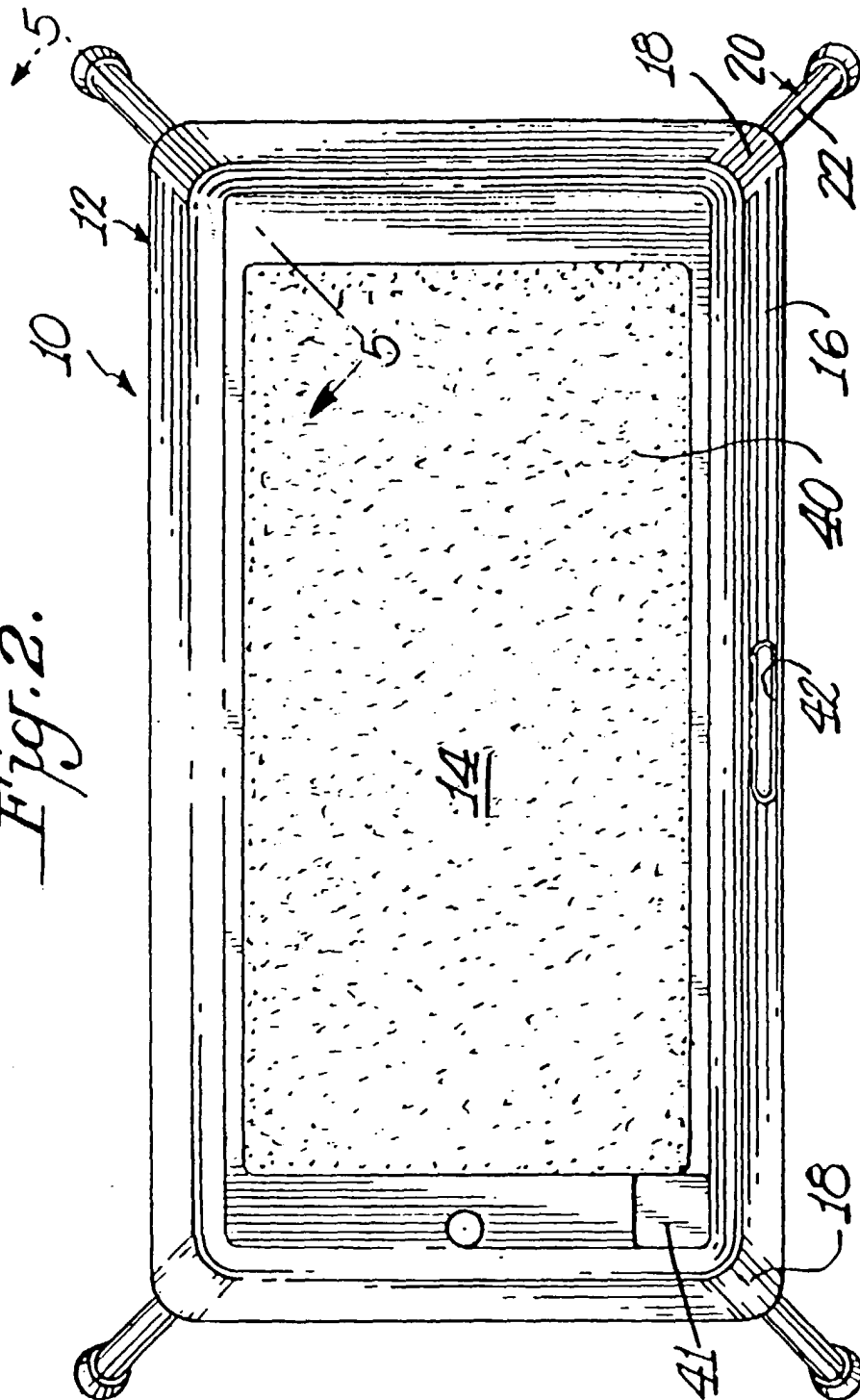


Fig. 2.



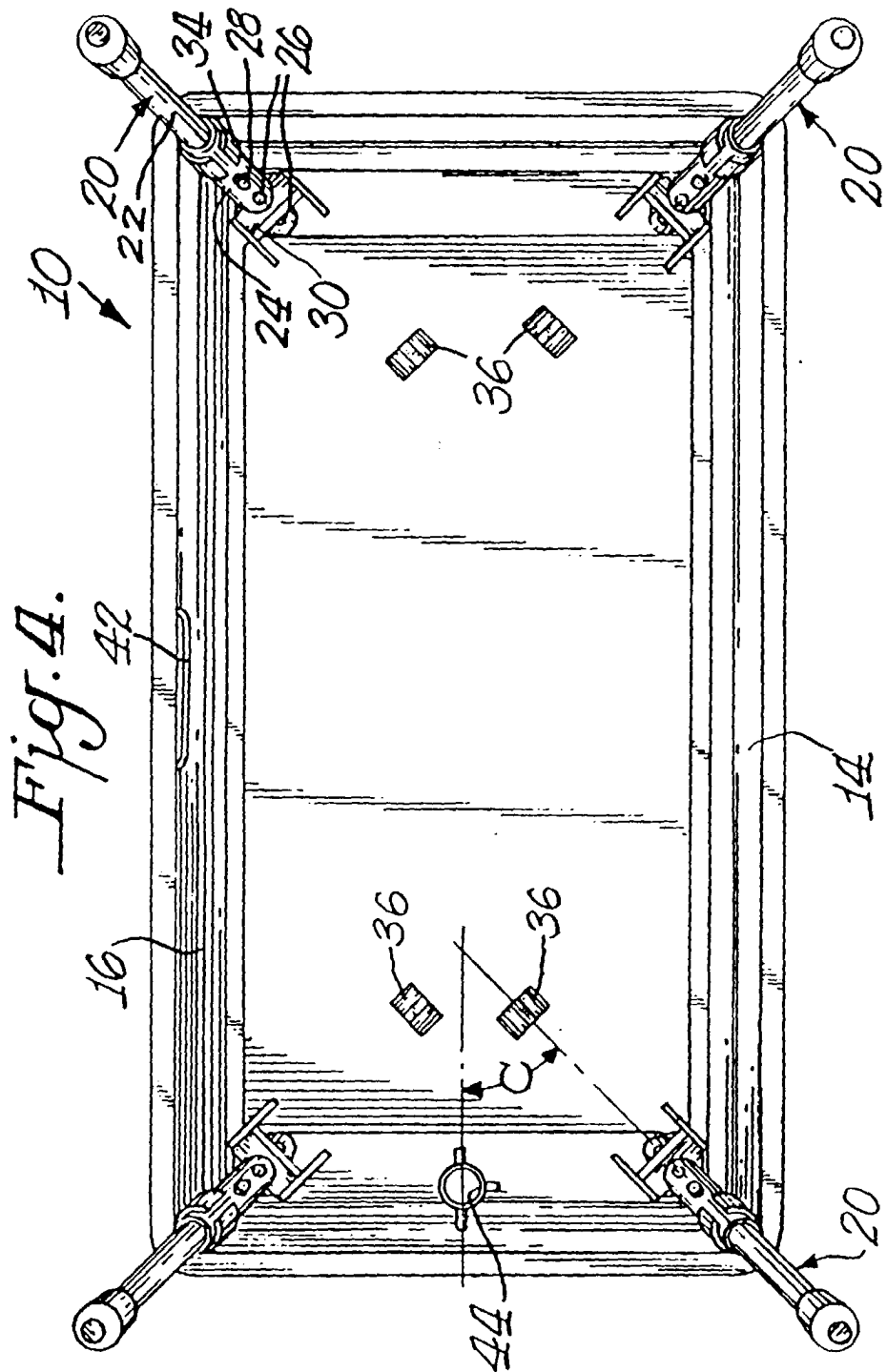


Fig. 4.

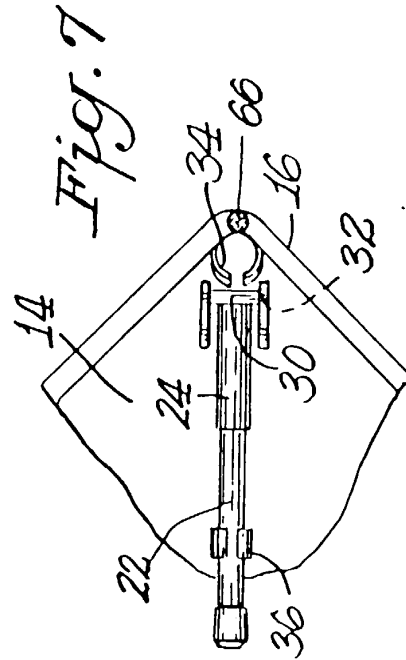
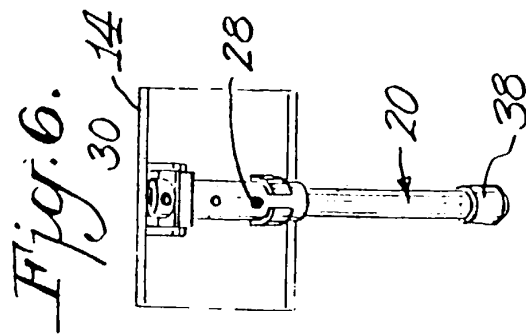
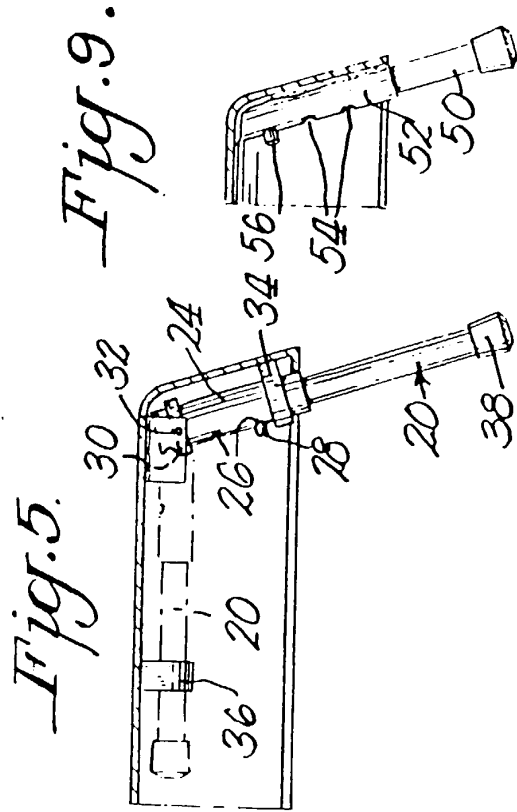
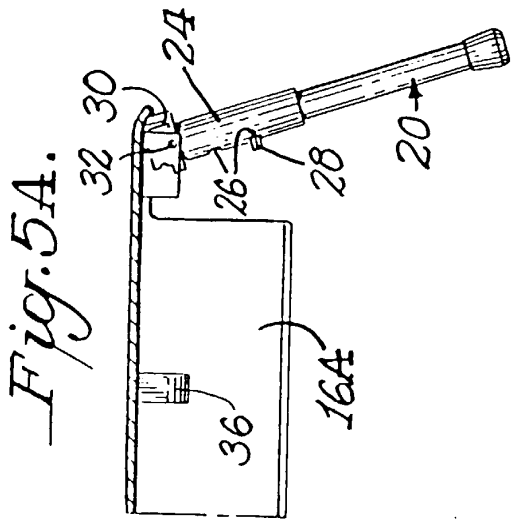


Fig. 8.

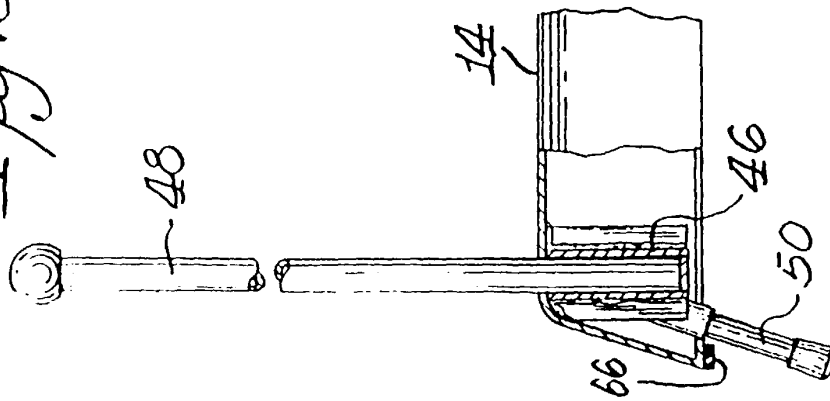


Fig. 10.

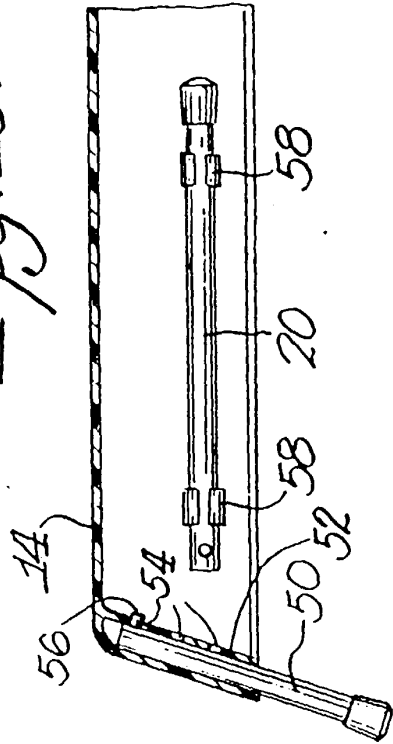


Fig. 11.

