ABSTRACT

An instrument and a system: a local training instrument which is concerning the scientific training on fundamental theories of 'the fighting science' about instantaneously dynamic balance and reacting of a professional contestant at standing posture. It comprises three primary components: a mechanical energy transferring subunit 1, a three-dimensional driven subunit 2, and a body holding subunit 3 or extra insert with the secondary component as a peripheral supporting subunit 4. Additionally, a global distributional each local training instrument through the internet 1300 connecting with a far end central data processing center 1301 composes an appraisal system which is with the purpose of objectively estimating the index of real fighting ability for each trainee. This invention, it transforms the martial arts (fighting techniques) training and fighting ability appraisal from the visual mode to the more efficiently touching and dynamic balance mode, and it is scientifically completing the comprehensive innovative improvement on concepts, methods and instruments, etc.
WORLD'S 1ST MARTIAL ARTS (FIGHTING SPORTS) TRAINING INSTRUMENT AND FIGHTING ABILITY INDEX APPRAISAL SYSTEM

DESIGNATED REPRESENTING DRAWING

1. This application designated representing drawing is FIG. 09
2. The briefing on component’s symbol of the designated representing drawing:

   From FIG. 09, the component’s symbol drawing, it shows a dynamic balance training instrument only needs three primary components (to be shown by blank blocks surrounding by thin dash line). It comprises a mechanical energy transferring subunit 1, a three-dimensional driven subunit 2, and a body holding subunit 3; thus, it will be completely enough to achieve the goal on dynamic balance training for trainee. Additionally, it may be adding with a peripheral supporting subunit 4 (to be shown by shaded blocks), for increasing more extra function.

TECHNICAL FIELD OF THIS INVENTION

A system and an apparatus to be the world’s 1st on the field of martial arts training and appraisal the fighting ability of a trainee; it is using on the purpose of the fundamental training and evaluating on the field of fighting techniques or the conflicting sports on bodily contact at standing posture. It can promote correct and rapid response, and the dynamic balance ability of the trainee, or further to estimate the index of true fighting ability of the contestant. Additionally, by the nature of passive sports in use at standing posture, as this invention operating on the slow and easy situation, it also provides with the function on vertebra therapies.

PRIOR ARTS

From the internet search through the patent databases of USA, European, WIPO, etc., without any of each as the same or the similar patent found; thus there are no prior arts could be quoted and referenced.

CONTENTS OF THIS INVENTION

(I) The Background of Generating on the Novel Thought & Finding the Questions:

The inventor based on studies TaiChiQuan, push-hand and boxing accumulated nearly three decades experience. Early at the end of 1983, the inventor got the nationwide champion with honor on 60 kg push-hand competition in Taiwan, ROC, only by one and half a year push-hand practice without accepting any other martial art training experience prior, see Photo 01, the photo of honorable accepting to be granting the gold medal and Photo 02, the certification of champion. With the professional psychology therapeutic experience of the inventor in early days, and through martial arts practising experience of the inventor who he concludes that why the mass majority, they could not get effective promoting on his fighting ability. It is based on the learner’s worse mindset of the resistance that generate naturally by ‘human-human’ practice mode, then the inventor tries to solve this problem of almost each martial art learner certainly occurred within real practice.

(II) Driving Out the Fundamental Theories and the Academic Paper to be Post:

With a lifetime studying, the inventor thoroughly understands the essence of ‘the science of fighting techniques’, then he makes the scientific re-definition of the ‘in-fight’ and ‘out-fight’. Thus, from the above wholly new definitions drive out the fundamental theories; then the inventor based on these fundamental theories, through researching and developing, invented the elementary and professional training equipment of ‘the science of fighting techniques’ or ‘the fighting science’. It is the ‘the dynamic balance training instrument and the global fighting ability index appraisal system’; according to the inventor’s privilege, it is named as ‘the world’s 1st martial arts (fighting sports) training instrument’ W-1st and ‘the world’s 1st fighting ability index appraisal system’ hereinafter this instrument and system, to be abbreviated and referred to as ‘the world’s 1st instrument’ W-1st and ‘the world’s 1st system’ correspondingly.

In important international conference and journal, the inventor sequentially exploded academic papers, which are the world’s first, it is concerning on the concepts, theories and methods in the fields of the fighting science and about the fundamental theories of dynamic balance training. 1. ‘International Workshop on Sports Engineering and Sports Equipment (SSESE2008)’ of ‘2008 Pre-Olympic Congress on Computer Science in Sport (IJACSS2008)’ which is convened in Nanjing China at 5~7 Aug. 2008.

(To see the web Site: http://www.olympiccongress.org/)

In title of: In future, how could you be a winner on fighting competition? There is no way, if without the aid through the innovative training concepts, methods, and by using this epoch-making invention: ‘the dynamic balance training instrument’ (The English reduction version is published in the proceeding of the conference)


(To see the web Site: http://www.worldacademic.com/journal/SSCI/)

In title of: The Dynamic Balance Training Instruments (The English full version, it is accepted and published in Vol. 2 No. 4, Dec., 2008)

(III) Theoretical Foundation:

1. The inventor defined on barchanded fighting techniques (martial arts)

‘The science of fighting techniques’ or ‘The fighting science’ is named and announced the first time in the world by the inventor; about In-Fight and Out-Fight never saw anyone defined as below as the inventor defined it previously, then the inventor tries to define it under below.

Barchanded fighting techniques can be divided into the In-Fight, and Out-Fight; in fact, it is not only to classify in China, for example, the barchanded martial art (Boxing) in the western world is also having: In-Fight, and Out-Fight discrimination.

a) The definition on Out-Fight:

So-called the Out-Fight is as two opponents engaged mutually with the conditions of that their bodies
without keep any contact to his opponent at any portion. It does not destroy the balance regard to his opponent as primarly, only by hands or feet, mutually launch attacks, in order to cause his opponent suffer the damage at his attacking point, with the result that his opponent loses the ability to offend and defend.

b) The definition on In-Fight:

[0014] So-called the In-Fight is as two opponents engaged mutually with the conditions of that their bodies kept in contact to his opponent at any point during fighting. He who destroys the balance regard to his opponent, and causes his opponent falls down as primarly. With arrest his opponent’s joint for next, then by hands or feet, mutually launch attacks for assistance, in order to make his opponent fall down, joints been counter-locked, acupuncture points been controlled or suffer the damage at the attacking point, with the result that his opponent loses the ability to offend and defend.

[0015] Above discussion about the definitions on fighting primarily is purely about the mutual attack at standing posture. In addition, if after them fall down to the ground at the lying down posture mutually attacks, that is groundwork, also has related development, then to be not discussed here.

2. The analysis on the time difference about the visual sense and touching sense

[0016] According to the definitions described on above, because the Out-Fight boxer whom engaged mutually with each other, without any contact to his opponent, so his attack and evade movements against his opponent, depends entirely on the visual sense as the only consciousness way. Because the light speed is extremely fast; therefore, people recognized with a mistake, cognizing the action of his opponent with the visual sense by eyes is the fastest mode; this actually is completely wrong cognition. Why is it wrong? There is no doubt the light speed is the fastest, because the biological development of the living creature evolution, the development of the visual sense is at the period later in comparison to the touching sense. Although the eyes already sensing the changes of light, but the visual region in the cerebrum occupied portion broadly to other senses of feeling; to form the significant cognizing, the received information processing time must pass through cerebrum processing, then to generate the correct reaction to respond, needing to take much longer time.

[0017] However, the In-Fight is quite different, two opponents mutually fighting together, because they maintain the bodily contact conditions against each other, the touching sense then becomes another major mode to conscious the action of his opponent. During the creature’s development, for comparison, the touching sense, which is earlier, and in lower level, in comparison to the visual sense, therefore as the skin with such vast area, it takes the processing region of the cerebrum, is unexpectedly far smaller than the vision. In addition, through the expert by a long-term training, the information from his touching sense even needs not through his cerebrum processing then it directly can get the correct reaction by way of his spinal cord. It corresponds to the action of his opponent, his responding speed is far rapid from the visual primarily as the Out-Fight boxer comparatively.

[0018] The physiology generally in university, teaching us each sense of the central nervous system occupied a portion in the brain, such as: speech 00-03, taste 00-04, smell 00-05, vision 00-06, hearing 00-07, face recognition 00-08, and the central sulcus 00-10 with the functions of the motor control 00-12 and the touch & pressure 00-11, to be shown in FIG. 01.

In FIG. 01, it shows the Central sulcus 00-10, can be divided into two portions of motor control 00-12 (front area), touch and pressure 00-12 (rear area).

[0019] In FIG. 01, The Central sulcus 00-10 is composed by two portions, the motor control 00-12 portion and the touch and pressure 00-11 portion. In FIG. 02, it pointed out the central sulcus 00-10 corresponds to be bodily for each region, the region has the size difference, respond to the functions of motor control 00-12 and touch and pressure 00-11; the wide range points out to process a large amount of information, it’s function is more complex. Therefore, it also takes more time. By FIG. 02 may obviously confirm that the entire body trunk occupies the relatively unusual small region. This is one of the rationales, the inventor presents the argument it rests on.

3. The information and difference from the thought of cerebrum activity and the spinal cord reaction

[0020] Particularly, a certain person, who is completely understood the In-Fight theories. Through long-term unceasing practice, causes his skin sense promoted significantly, if his opponent by the cerebrum activity, this is so-called mind or thought activity, directing his body makes to offend, defend or dodge hide action; before his offends, defend or dodge hide action not yet launched, his body already transmitted out the information. This information, the Chinese or novelist commonly named it and pronounced it as ‘Chi’.

[0021] In-Fight expert has been long-term actual fighting experience, can clear read out this information, from it to understand the follow-up action mode of his opponent, then took the corresponding action of offend, defend or dodges hides and so on; this kind of information reading ability in TaijiQuan is called as ‘Listen-Ability’ (TingJing). Certain In-Fight expert with a subtle sense, can sense it through on his skin hair. Therefore, the Out-Fight boxer is obviously and usually full of bellicosity, but the In-Fight fighting expert instead is good at going into hiding his thought and makes it invisible.

[0022] However, if the generated action of his opponent is belonging to the spinal cord reaction by himself, the body of his opponent without any information comes out. Therefore, without any fighting expert is able to sense and to read it. So whichever a boxer, if he accepted exactitude and long-term training, until the action of his spinal cord reaction can be generated, and becomes to his nature response, then his action of offend, defend at this moment, all is by the action to respond to his opponent and is turning into the natural respond.

[0023] Particularly, if his action is belonging to the nature response. In addition, it is generating due to responding to his opponent with big or strong action. Thus his opponent with this big or strong action, cause to slant and his center of gravity to be out of the supporting area under his feet standing. Therefore, this kind of natural response which occurs this action, is completely unable to read out and sense, so his opponent completely is not able to crack it, certainly his opponent is placed in the balance destruction situation immediately by his opponent own action, and it causes his opponent himself to fall down or under the defeat situation.

[0024] Comprehend to this extent, if anyone can understand the time difference of the visual sense and the touching sense, and the difference of the activity by brain consideration and the spinal cord reaction, then when two boxers engaged mutually, which one is faster or slower than the other is. Is it obviously to be determined?
4. The difference between Static balance and Dynamic balance

Through above analysis, therefore the Out-Fight boxer, often practices to strike hits, in spite of alone or mutually, repeatedly practice the striking style, expected to can speed up his striking rate, take achieves the intution response as a goal. However, usually does not consider the balance problem. If he calculates the balance problem into consideration, it only just under the situation that is without the interference by his opponent, to all of his actions by himself and by the only existence of gravitational force, he considers only the static balance. Moreover, due to above comparison about the senses of vision and touching, his reaction time definitely far slower than the In-Fight fighting expert does.

In-Fight, then under the condition in keeping contact with the body of his opponent at any portion, mutually practice: pushing, wrestling, capturing, holding and so on, with the expectation can destroy the center of gravity and the balance of his opponent. When severely, it will cause his opponent to fall down, when slightly it will cause his opponent unable to apply a force out as his own will or properly to offend and defend. And further, because when his opponent applying a force out, the applying point, the applying direction, the force magnitude, the applying time and so on, all is moreover, as random and time variant as the will by his opponent. Therefore, the training goal then emphatically to, besides the fixed invariable gravity, also caused by his opponent applying force to cause to his body as the balance influence with the least change into the principle to carry on. Thus, the training goal is toward on the dynamic balance into the principle to carry on.

5. The cultivating time of spinal cord reaction

For any kind of reaction training, all needs sufficient time to cultivate right and natural response, to take English typing as an example, people almost are not from childhood to get English typing training. However, if gives sufficient training time, slowly practice from the start, gradually speeds up, most importantly, for each punch all must be correct, after three months later, bad habit will be removed, after six months, can cultivate a good habit, after a year, will completely produce the natural response.

Martial art training is not exceptional. Regarding these trainees accepting martial art training, if gives several hours per day with sufficient dynamic balance training, after three months, bad habit will be removed, after six months, can cultivate the correct habit, after a year later, will completely produce the natural response either. This training time, in regard to martial art training, may say that it is quite rapid and effective.

6. Why In-Fight is better than Out-Fight?

According to above discussions, if a martial art trainee accepted sufficient dynamic balance training, namely the In-Fight fighting expert, also if the other martial arts trainee without accepting any dynamic balance training, namely the Out-Fight fighting expert, they engage and fight mutually. In addition, if this In-Fight fighting expert can sufficiently and completely to understand martial art theories and can keep contact with his opponent as necessary, then this Out-Fight fighting expert, because his sense is slower also is unable to obtain immediate dynamic balance, therefore, is unable applying suitable force out to offend and defend. However, for the In-Fight fighting expert, because his sensitive sense, precognition and the accuracy of his instantaneously judgment, dynamic balance and reaction rapidity, etc., all is distinctly outstanding in comparison to his opponent. Therefore, he is quite easy to launch effective attack, obtains certainly superior on integrity.

Therefore, in the ‘fighting techniques’ domain so-called is about the rapid and slow, which is relative, and by the physiological sensation. Although by the present science and technology, may use the high-speed camera, then to make the low-speed playing, for the analysis after the event past. But, at the actual fighting, one by his opponent attacking with fists on his body, or he is attacking with his fists on the body of his opponent, that kind of feeling is true, is the real time and immediately, is also the present technology disability and unable to measure.

Generally, pure Out-Fight fighting expert, cannot consider to the integrity attacking impact of his hits. Therefore, he launches an attack is good at with the extremity (limb) strength. Expected with the speed of his attacking point, causes the damage by the attacked point of his opponent. However, the TaiJiQuan is then otherwise. One with the arms level extended, only a little rotating hips, and then the speed of the endmost hand is moving fast. In addition, TaiJiQuan always destroys the balance of his opponent as primarily. It affects his opponent use his limb strength cannot as will. Moreover, if the opponent has not practiced TaiJiQuan, then his entire physical strength in the situation under balance destruction, also cannot be using, by now to attack the opponent, was similar as to hit the fixed target, must strike the center in any time, knocks out only need and by one single shot. TaiJiQuan in Chinese traditional martial art was a remarkable easy case of In-Fight.

7. The right mindset on push-hand practice of TaiJiQuan and the relations of dynamic balance with Listen-Ability

In the Taijiquan training, a center guiding ideology that is ‘Abandon the subjective of one’s ego instead as a follower.’ So-called ‘Abandon the subjective of one’s ego instead as a follower.’ It is when refers to the martial art’s training, specially refers to a mindset when push-hand practice of TaiJiQuan. Why has to maintain this kind of mindset? Because it only maintains this kind of mindset in the time during push-hand (TweiSow) practice, can achieve ‘contact (Tsars), stickiness (Nian), continuous (Liars), follow (Swei), without separation and conflict (BuDoDing)’. In addition, all of these about ‘contact, stickiness, continuous, follow, without separation and conflict’ is the precisely index to measure the quality or ability of the Listen-Ability in TaiJiQuan.

However, what is the Listen-Ability? The Listen-Ability is a kind of ability by way of the skin contact on bodily surfaces, and then infers the idea and attempt of the innermost thought of his opponent. In here, the inventor must introduce some knowledge and concept within modern physics to explain it.

First, is the concept of vibration and resonant. In the mechanics, the electricity and the optics, all has the vibration concept. For example, a tighten string, we plucked it by finger, it can have the vibration to emit sound; if by side has a string which basic vibration frequency is completely the same, then it can produce the so-called resonant phenomenon, causes the second string to send out completely the same sound with the first string.

Next, the inventor makes the example with the wireless radio or television. If regarding the broadcast of the amplitude modulation (AM) as an example, and if the weakly high frequency carrier that received by the antenna of the radio, it passes through the local tuner receive; lets the spec-
cific frequency is enlarged by entering the radio-frequency amplifier, then through super-heterodyne decline it to the intermediate frequency. Again demodulate it to low frequency signal, after sends it to the power amplifier, through the loudspeaker the sound production; it causes us to be allowed to hear the same sound as from the transmitting station. In this case, the local tuner is similar to the above resonance effect. In addition, it is as “contact, stickiness, continuous, follow, without separation and conflict” in TaiJiQuan. We can hear the sound, which is broadcast from the transmitting station. It is the Listen-Ability (TinJing) in TaiJiQuan, also it is in local can receive the primitive sound which transmits from the transmitting station at a distant place, that is harmonizing after the hand contact and the opponent action infers the thought in his opponent mind.

[0036] Come again, we may quote the synchronization concept of the television. The person who having ever learned the television principle all known the synchronization concept, the appearance of the television can use the field and the frame of the diagram becomes the animation; for each field and frame also had many scan lines. For system NTSC and PAL, frame number and scan line number also were different; no matter how, each system, it respectively did have the vertical synchronization signal and the horizontal synchronization signal, if it was un-synchronization, the television picture on disorder; if it was synchronization, the television can receive the picture integrity which transmits from the launch present. Here, the synchronizing signal is “contact, stickiness, continuous, follow, without separation and conflict” in TaiJiQuan; and the animated picture integrity presents, is the Listen-Ability in TaiJiQuan.

[0037] Thus, it is in the receiving end tuner, receives different channel, must adjust the tuner to be harmonic with the transmitting station as the same different frequency, otherwise it is unable to receive the signal; and this frequency channel, is leading by the transmitting station, the receiving station is following. Therefore, if anyone wants to train himself to get the subtle Listen-Ability and the excellent dynamic balance ability, that his own mastering prejudice is too strong, is certainly getting nothing from the practice. This certainly is the main reason of the majority people who practice the Taijiquan, but only have such rare a few people to be able to become the outstanding In-Fight fighting expert. Therefore, we must and only practice through the push-hand by way of maintaining the good mindset of ‘Abandon the subjective of one’s ego instead as a follower.’ In order to developing the subtle Listen-Ability and excellent dynamic balance ability, then read out the thorough intention of his opponent at any time by Listen-Ability and respond to the actions of his opponent by nature and proper dynamic balance.

8. Graphical illustrating the dynamic balance and some other basic concepts that derived from TaiJiQuan.

[0038] In FIG. 05, It shows a navigation compass 3000, when a ship navigates on the ocean surface. Because it receives the influence by the ocean waves, regarding the ship swaying, at a certain instant, as the stand of compass moves from the original position 3002 (dashed line) to new position 3001 (solid line) by the incoming force from waves, the navigation compass 3000 its upward surface, still maintains its original upward direction, does not receive the change. It is an embodiment example to illustrate the dynamic balance concept.

[0039] If we use a rectangular block to symbolize the In-Fight expert’s body from the shoulder to the hip portion, and with the three axis’s free stand symbolizes his legs as shown in FIG. 04.

[0040] In FIG. 04, the left hand side shows a rectangular block supported by a stand with three free axes’ perpendicular to each other in static. The normal vector 4000 is perpendicular to the front face 4001 of the block. The right hand side shows an incoming force vector 4002 from his opponent launch out against the front face 4001 of this block at a certain point, then the block its normal vector 4000 with a circular moving 4003 to release the incoming force and disturbed his opponent’s balance immediately, is an illustration on dynamic balance.

[0041] Another concept in TaiJiQuan is ‘relaxation’. It is with the meaning of to release all tensions of the limbs; except the necessary force, that is support for standing. For instance, illustrated in FIG. 05, by using the rocking drum for kids playing, drumsticks as two upper limbs of a human body, left hand side shown it in the static, right hand side shown when the rocking drum is rocking, the drumsticks swinging to follow and to be derived by the drum’s rotation correspondingly. It is, by the way, of ‘relaxation’ to transform the incoming attacking linear momentum or kinetic energy to the rotational momentum or kinetic energy and let it to be harmless.

9. Philosophy foundation & excess training

[0042] Because ‘the world’s 1st instrument’ W-1st its philosophy foundation of elementary theory, is originally comes from martial arts theories of TaiJiQuan in China, namely ‘Abandon the subjective of one’s ego instead as a follower.’ Almost each Chinese person they practice martial arts all knew a proverb: ‘For a decade long time training on TaiJiQuan practice without the ability to go out and to engage a real fight’, this is a true description on the normal mass phenomenon, and it points out the training of a true in-fighting expert is extremely difficult to accomplish. The reason is when practice nearly nobody is willing to achieve ‘Abandon the subjective of one’s ego instead as a follower.’ Because a person of the greatest majority, at real mutually practice, almost everyone is unable effectively to change the mindset of his own, or breaks through the psychological barrier of his ego; therefore, the strength of real fighting ability of the trainee is unable to promote, naturally.

[0043] However, if we use ‘the world’s 1st instrument’ W-1st to instead as a simulated enemy for the trainee, its result is completely different. First, what the trainee face to it is the training instrument, comparing to face to his real opponent mutually, the necessarily and abiogenetically resistance mental state, will not occur entirely; so long as to make a brief illustration, then it can make a trainee to rest on theories, making the certainly effective practice.

[0044] Next, if want in competition or on arena to defeat his opponent, at the usual training time, all contestants should make some excess training in a right amount; for instance, the contestant of 60 kg class, may and must be with the opponent of 90 kg class or higher weight class, have to fight empirical training and real strength. However, if the contestant who is of heavy weight, super heavy weight or infinite heavy weight; where he can look for his proper opponent to make the excess training? You need not to worry, by the method on training with ‘the world’s 1st instrument’ W-1st, it can supply the superior opponent for training. This is an electrically operated training instrument, its power output,
if by needing it has the power as an elephant that will not be a problem on the engineering field completely.

0045 Try to compare a civil airline pilot without the G training to a fighter pilot accepted more than the 6 G training; it is obviously to realize the differences among them.

0046 Suppose that, if a contestant can frequently face to the training opponent and completely respect to the theories of 'the science of fighting techniques'. During the training period, according to above discussion, only needs a very short time within one year, then completes his spinal cord reaction training, namely this trainee now already is an In-Fight fighting expert and cultivate with the correct intuition reaction ability. Thus, if by one not accepted 'the world's 1st instrument' W-1st does correctly spinal cord reaction training also does not make the excess training, then this participative contestant, engaging with this In-Fight fighting expert, with no doubt immediately have to be at the situation under defeated or restrained.

10. TaiJiQuan Article' by Wang, ZhongYueh of Ming Dynasty

0047 TaiJiQuan Article' (TaiJiQuanLwen) to the martial arts learning person, especially the TaiJiQuan learner in China, it merely likes the Bible to a Christian, if anyone without the opportunity to understand the inner true essence of TaiJiQuan, then he is by no means to understand the truly essence of my invention, for the purpose of helping the foreigner who is able to understand TaiJiQuan and my invention with this reference, the inventor tries to translate the 'TaiJiQuan Article' in English as below:

0048 TaiJi generated from WuJi (chaos; Primordial State), the source of Yin (negative) and Yang (positive); in movement it separates, in stillness it combines. It is without excess and deficiency, as following the bending and extending of opponent. Yield with soft against rigid as opponent’s advantage, as dominance the opponent then stick. Rapid movement then responds with rapid, slow movement then replies with slow. Although it is with infinite variations, but the principle keeps only one thread. By long-term practice well-known the skill then gradually cognize Comprehending-Ability (Dong-Jing), from DongJing then steps to the stage of holy clarification (SengMing). However without paying one’s effort over long time, it will not be able to achieve a thorough understanding suddenly.

0049 With empty inner thoughts and lift head up with vigor; let Chi sinks to inner center of underbelly (DanTian). Without leaning and inclining, alternately suddenly disappear and appearing. Feels left heavy then left is empty, feels right heavy then right is missing. Face upward then high, face downward then depth, advance extends longer, retreat confines shorter. A feather cannot be adding and a fly cannot land either on me that is why my opponents by no means to know me, but only me can know them all. Be an invincible hero who is never met the proper match achieved by this method entirely.

0050 The fighting techniques with many other kinds, although with the different style, merely are nothing more than the stronger bullying the weaker, the slower yielding the faster, one with strength overcomes whom without strength, and fast hand prevails over the slow hand, all these are from inherent natural abilities, and bears no relationship to the ability that comes from studying with effort. Examining the expression that is, "using ounces force to shift thousand pounds." obviously, this is not accomplished by means of strength; Observing the situation of which a very old man with the ability, that he is able skillfully to defeat off the crowds of opponent. How can he achieve it only by fast?

0051 Stand have to like a balance scale, nimble rotation like cartwheel, when it bias subsides then follows, dual loads then stagnates. Whenever we see those who have practiced diligently for many years, yet are unable to utilize the counterbalance all are subjegated by his opponent, it so far caused by whom cannot comprehend the fault of dual loads. Inventor's note: The dual loads, it means the conflict thought of the engaged both sides, it were the same strength; thus, one launch an equal force against and on his opponent simultaneously, as well.) With expectation evades this fault, one must know Yin and Yang; stick is yield, yield is stick, Yin cannot separate with Yang. Yang cannot separate with Yin; the mutual collaboration of Yin and Yang is precisely what makes up DongJing (the Comprehending-Ability).

0052 After getting with DongJing, diligently practicing will refine the skill greatly; by learning implicitly and mentally, and gradually you can achieve what you get as your wish. The true essence is 'Abandon the subjective of one's ego instead as a follower.' (SerHIsouonZen), the mass majority mistakenly leave off the near and in pursuit of what is far away. So-called this trivial fallacy (trivial error) will cause a completely wrong direction (a thousand miles divergence) of practicing the martial arts.

0053 All learners must therefore be carefully discriminat the details herein. Thereupon makes this article.

11. The similarity, and benefit of 'the world’s 1st instrument' W-1st

0054 To uses 'the world’s 1st instrument' W-1st for the training purpose of the professional contestant of 'fighting techniques', it more approximately analogous, for example, a western cowboy in US rides a mechanical bull on the training for bull riding competition, or the cockpit to be used for the simulation on the fighter pilot training.

0055 Because 'the world’s 1st instrument' W-1st used for 'fighting techniques' training, it belongs to the ‘human-mechanism’ interaction mode. Therefore, to any and each trainee who will not directly against to another, thus, the nature psychological resistance to be produced and caused by the mode of ‘human-human’ direct resistance, to be fully eliminated naturally. Therefore, regarding ‘dynamic balance training’, the trainee passes through the brief explanation; it may cause the trainee is fully understood and can completely to prevent the training into the wrong psychological resistance mode. This advantage was formerly in the world all other kinds of martial arts training method or equipment is unable achieved.

12. Wide range application of ‘the world’s 1st instrument’ W-1st

0056 Further, ‘the world’s 1st instrument’ W-1st is not only applicable to 'fighting techniques' training such narrow and small range. In regard to the comprehensive martial art, for all items of the exercises or sports, so long as in which has any bodily contact, like boxing, Judo, wrestle, Taekwondo, Japanese Sumo, fair charge in Soccer, block out in Basket Ball, tackle in American Football and so on. Alternatively, by equipment extending body contact, for example, Japanese Kendo, foil, epee, saber in western world etc., "the world’s 1st instrument” W-1st is suitable for using as the fundamental training purpose at all; ‘the world’s 1st instrument’ W-1st may be used in these fields: the security person, the police, the
special forces, the army, etc., on the fundamental training of barehanded fighting techniques.

[0057] The experience comes from the inventor’s practical training. A trainee who accepts short-term dynamic balance training to continue for a year, with 3-4 hours practices per day, surely may cultivate correct nature response on dynamic balance. Therefore, his dynamic balance to be compared to, is far better than his opponent without accepted this training, then his fighting skill is easier to display than his opponent. In the past, it needs hard training for years but not necessarily can achieve this goal. Therefore, one who accepted the full training through the process of ‘the world’s 1st instrument’ W-1st, should be with the ability by a person simultaneously resist several opponents who without ‘dynamic balance training’.

13. Conclusion and sigh

[0058] The inventor with life time study martial arts, deeply understand this invention will shock to the domain of individual martial arts, the reality it might is not inferior as the nuclear weapon shocking to the international war. The relationship between it to all other kinds of bodily contacting sports, merely likes the operating system to the application software of a computer. It is naturally overturning the traditional martial arts training concepts and methods in the world. Also, it will force whatever anyone or everyone, who he is joining any kind of martial arts competition or barehanded fighting, unconditional have to accept the dynamic balance training by this instrument, otherwise he will never get any ability or opportunity to stand still on the ring field or in front of his opponent. Definitely, it is a remarkable milestone in the history on developing of the barehanded martial arts training of human beings.

[0059] Cause of the blood I was born, cause of the thing I have done, cause of the life I was living, cause of the invention I have left; by this opportunity to register it in the official documents; then, with dare I remain the script at this corner, describing my thought; let it put into history, then encourage the devotee.
The world's 1st martial arts training instrument, it pounds all of those outstanding persons within the humanity;

If one is not a true man, then who he could not to be a superior; also if one is without severe discipline, then who he could not be the greatest.

Worldwide accepts all pillars; inspire them concurrently studying literary and practicing martial arts to fit the Being Daul (道 - the moral law);

Entire these winners to be grant medals who were my apprentices, and the hero was my disciple hereafter in the world.
(IV) Technical Solution for Above Problem:


[0061] Though, from above discussion, theoretically could effectively solve the problem of the mental obstacle it grows from the human-human mutual training mode on fighting techniques. Actually, how could do it, then it will be able to achieve the theoretically pre-designed goal, it becomes a new question. Fortunately, based on the physical foundation and the background on the fields of technology and engineering of the inventor, these questions also got real solutions, it will be discussed below in the ‘implements of the invention’.

[0062] At here, by using some simple diagrams to explain its working theories:

[0063] In FIG. 06, it shows the normal front face of the rectangular block in FIG. 04, its original steady state is demonstrated by dashed line, the normal vector is a, as it accepts the incoming force with resolving moving, it’s normal vector at a, also about its original place normal vector a, rotational moving with an angle 0.

[0064] In FIG. 07, suppose that we use a bending shaft B with a bending angle θ, axially coupling at O at the center of this plane. At the other end B of the bending shaft B input a rotational moving, then the normal vector a' it will generate a rotational motion with angle 0 about its original steady state normal vector a. Also caused by this block it’s top end always keep upward not rotating with this shaft, thus this block swaying as bend forwards and backwards also left and right within three dimension.

[0065] Due to the human body trunk is replaced by a freely floating block; but in real training, as this shaft driven by the rotating force, then through the pivotally coupling, cause the human body trunk swing as bend forwards and backwards also left and right periodically. A man could not stand still at a certain point without position displacement of the center of mass of his body. Even in the situation, this human body trunk accepts the interference by this incoming force, caused his balance be destroyed, it is easy to fall down. Thus, the other far end is not allowing rigid fixed, it should be in two-dimensional free and with a universal joint connecting, for transmitting rotating power, should be connected to it; or with a flexible shaft to replace the rigid shaft. Furthermore, for considering the safety, it should be putting the safety belts on the shoulder part of the trainee, to prevent the injury when he falls down.

IMPLEMENT OF THE INVENTION

[0066] FIG. 08 is the block diagrams, which shows the primary and secondary components of ‘the world’s 1st instrument’ W-1st. In which it was including the primary components: a mechanical energy transferring subunit 1, a three-dimensional driven subunit 2, a body holding subunit 3 (blank block with heavy solid lined), and the secondary components: peripheral supporting subunit 4 (shaded block with the dash line).

[0067] FIG. 10 is the block diagram shows the basic components of ‘the world’s 1st instrument’ W-1st with peripheral subunit expending; among which it comprises: power supply (8005), local sensor (8006), local monitor (8007), local central processing (8008), far end communication (8009), etc.

[0068] FIG. 09 is ‘the world’s 1st instrument’ W-1st basic components symbolic plotting. In which ‘the world’s 1st instrument’ W-1st needs only three primary basic components (to be shown by blank blocks with thin dash lines): a mechanical energy transferring subunit 1, a three-dimensional driven subunit 2, a body holding subunit 3; thus, to the trainee 0, it is completely enough to achieve this goal on dynamic balance training. Furthermore, it may be with a peripheral subunit 4 (to be shown by shaded block with thin dash lines), to increase other more additional functions.

[0069] In which, the three-dimensional driven subunit 2, it comprises: a universal joint 21, it provides with the two-dimensional free ability; a linear driver 22, it provides with the linear expending ability; and a three-dimensional angular varying driver 23, it provides with the three-dimensional angular variation ability. The body holding subunit 3, it comprises: H and S, 31 is a body holder H, it provides with the body holding ability; 32 is a suspensor S with the length limiting ability, and it also provides with the abilities of weight variation AW as the weight varying set 33.

[0070] The input kinetic energy comes from the mechanical energy transferring subunit 1 guide through the three-dimensional driven subunit 2 into body holder H 31 of the body holding subunit 3, and then it is generating a time variant three-dimensional driven force against the trainee 0. The three-dimensional driven subunit 2 through 20 fix 21 in space on certain specific proper height is in front of to trainee 0, to provide the anti-action force. Additionally, the peripheral supporting subunit 4, it provides the abilities on power supplying, controlling, monitoring, sensing, far end communicating or other additional functions.

The Embodiment A

[0071] FIG. 11 is the perspective view of ‘the world’s 1st instrument’ W-1st in use. In which, 10-00 is the main cabinet, solid installed on supporting deck 32-00, with a narrow opening 10-01 face to a trainee, with a monitor 42-00 installed on also. The main cabinet 10-00, it receives all major components of ‘the world’s 1st instrument’ W-1st and ‘the world’s 1st system’.

[0072] The trainee dressed in the body holder 31, through the coupling of the three-dimensional driven subunit 2 and the mechanical energy transferring subunit 1 within the main cabinet 10-00, achieves the training goal. The pressure-sensing pad 43-0 was installed on supporting deck 32-00, containing pressure sensor inside. The main frame 32-04 solid installed on supporting deck 32-00; the fixed pulley set 32-01-1, 32-01-2, 32-01-3, 32-01-4 solid installed on the main frame 32-04 with a movable pulley 32-06 and a safety belt 32-05 solid connected to the body holder 31 on shoulders, it provides secure safety as the trainee falls down, just in case. The video cameras 41-01, 41-02, it supervise the real time status on training of the trainee for the movement analysis and educational use in the future.

[0073] FIG. 12 is the perspective view of ‘the world’s 1st instrument’ W-1st in use and remove the main cabinet 10-00 at another viewpoint. In which the local central processor 45-0 belongs to the peripheral supporting subunit 4; the mechanical energy transferring subunit 11 solid installed on the supporting deck 32-00.

[0074] The trainee, he dressed in the body holder 31 on which, where at 44-00-1, 44-00-2, 44-00-3, and 44-00-4 or some other proper place on the body holder 31. The sensing elements set are installed, these sensing elements may include contacting pressure, pulse, blood pressure, body temperature . . . etc., on necessary of any kind of sensor, for collecting the real time information within the training period. The weight variant set 33 it will be discussed later.
FIG. 13 is the block diagram of the world’s first system; it shows the global distributed ‘the world’s first instrument’ W-1 system connecting through the internet 1300 with the far end control and operation center 1301. After and by the far end control processing and control center 1301 through the mass data storage (1302) and processing, it provides the objective appraisal ability on the items of the dynamic balance ability and the basic fighting ability index of the trainee worldwide separating; it also provides the therapeutic suggestion ability.

1. The embodiment 1:

FIG. 14 is the perspective view of the three-dimensional subunit 2 in longitudinal cross section at the comparative status of embodiment 1. Within this drawing, there are three thin dashes line areas: coupling 21, linear extending 22, three-dimensional driven subunit 23, each sequentially corresponding to the component’s label number in FIG. 09. C and C’ shows the comparison of the three-dimensional driven subunit 2 which are each at the extending and the retracting statuses corresponding of this embodiment.

This embodiment 1 comprising a universal joint 2101 with two-diensional free, of which accepting the input rotational kinetic energy from the mechanical energy transferring subunit 1 co-axially solid installs to slot shaft 2215. The necessary displacement is provided by the co-axially coupling of the slot shaft 2215 with the slot shaft sleeve 2214. The other end of the slot shaft sleeve 2214 solid connected to the angular bending connector 2213 co-axially; the angular bending connector 2213 through the shaft bearing 2301 co-axially coupling to the three-dimensional swaying plate 2331, then the three-dimensional driven subunit 2, it provides the anticipated three-dimensional swaying motion from this invention.

The sliding end stopper 2215-2 solid installed on the other end of the slot shaft 2215, the slots at both sides of the sliding end stopper 2215-2 to receive the linear displacement buffering spring set 2215-3X2. With the spring function that is provided by the linear displacement buffering spring set 2215-3X2, the rigidly colliding wouldn’t be happening as the slot shaft 2215 sliding to both ending limits along the slot shaft sleeve 2214. The slot shaft core 2215-1 linear sliding co-axially coupled with the slot shaft 2215. The slot shaft core 2215-1, it is solid installed in the slot shaft sleeve 2214 to transmit the rotational kinetic energy.

Between the external sleeve 2211 and the slot shaft sleeve 2214 in which inserted a ball bearing set that is composed by the ball bearings 2214-1, 2214-2 and 2214-3, to isolate the rotational motion, it will approve the external sleeve 2211 without rotational motion to prevent dangerous. Besides this, a high-density elastic substance formed the spring sleeve 2211; it provides more protection to prevent the injury of what it is caused by the collision of high-speed swinging arms from the body swaying of the trainee.

The angular bending connector 2213 co-axially solid connected between the slot shaft sleeve 2214 and the ball bearing set 2301, the three-dimensional swaying plate 2331 isolating rotational motion by bearing set 2301; it only generates the three-dimensional swaying motion from the function of the angular bending connector 2213.

The three-dimensional swaying plate 2331 is solid installed on the frame of the body holder 31 shown in FIG. 11 and FIG. 12, it will bring the three-dimensional swaying motion to the body holder 31 as the predicted function from this invention.

FIG. 16 is the perspective view of the system of the body holding subunit 3, which is shown the thin dashes line block 3 in the FIG. 09, in which the weight varying set 33 possesses the ability of weight variation ΔW, it is also shown the same weight varying set 33 in FIG. 12. Concerning about the body holding subunit 3, except the weight varying set 33, all other functions to be described previously, here now we just discuss the actual function of the weight varying set 33 as below.

Between two volumes determined airtight containers in FIG. 16, a floating container 33-01-1 and a fixed container 33-01-2, with two pipes, an air-pipe 33-02-1 and a liquid-pipe 33-02-2 mutually conduct each other; in this drawing shown the partially sectional portion of these containers and the level surface between air and liquid within it. In which insert an air pump 33-04-2 and a switching valve 33-04-1 within the air-pipe 33-02-1, to control the air pressure inside of the floating container 33-01-1, then it got the result of changing the liquid level of the floating container 33-01-1; thus, we can adjust the overall weight that presented by the floating container 33-01-1, 33-03-1 and 33-03-2 are the spaces it receives air respectively; 33-03-3 and 33-03-4 are the spaces it receives liquid respectively.

As described before, the main frame 32-04 solid installed on supporting deck 32-00; the fixed pulley set 32-01-1, 32-01-2, 32-01-3, 32-01-4 solid installed on the main frame 32-04 with a movable pulley 32-06 and a safety belt 32-05 provides secure safety as the trainee falls down just in case. The video camera 41-01, 41-02 it supervises the real time status on training of the trainee for the movement analysis and educational use in the future.

In the center of itself of the floating container 33-01-1 possessed an airtight tube with both end open, a hook on the other end with a ring which is the central hook ring 33-05-1, it penetrated the central tube of this floating container 33-01-1, and hooked on the ending ring beneath the movable pulley 32-06. At the ending ring below the central hook ring 33-05-1, with simple length adjustable a chain hook 33-05-2 connected, and the other end of the chain hook 33-05-2 is solid fasten to the supporting deck 32-00. Its length with the principal not allows the trainee’s hips touching the upper surface of the supporting deck 32-00, when the trainee falls down just in case. (The inventor’s note: to prevent too complex to read the drawings within this application; and it is too easy to realize for any skillful person, thus this component will not be shown in corresponding drawings. At here, only describes it as the chain hook 33-05-2 on briefing and with the name and label.)

FIG. 17 is a perspective view of the embodiment 1 of the kinetic energy transferring unit 1. In which the frame 11-00 solid installed on the supporting deck 32-00, to provide the supporting and installing function for all other components within the kinetic energy transferring unit 1.

Speed descending servomotor 11-02 by extending frame 11-03 is solid installed on the frame 11-00; its output rotational force through a v-belt pulley 11-04-01, pulley supporting arm 11-04-02, v-belt 11-04-03, v-belt pulley 11-04-04, v-belt pulley 11-06-01, pulley supporting arm 11-06-02, v-belt 11-06-03, and v-belt pulley 11-06-04 to the output shaft 11-01.

Inserts the spring sets 11-08 and 11-09 between the vertical height-setting panel 11-11 and the vertical buffering panel 11-10, and installs them along the guiding bars 11-12-1, 11-12-2; adjusts the height of the vertical height-setting panel 11-11 depending on the height of the trainee properly. The
bearing of the output shaft 11-01 solid mounted on the vertical buffering panel 11-10, it will allow the output shaft 11-01, along the vertical direction with a limited buffering capability. [0089] The pulley supporting arm 11-06-1 and the pulley supporting arm 11-06-2 at the elbow 11-05 provide a floating elbow capability, through the cooperation on both the elbow 11-05 and the vertical buffering panel 11-10, then the output shaft 11-01 possesses the power transferring and the vertical direction with limited buffering capabilities.

2. The embodiment 2:

[0090] FIG. 15 is the perspective view of the three-dimensional driven subunit 2 in longitudinal cross section at the comparative status of embodiment 2. Within this drawing, there are three thin dashes line areas: two-dimensional free coupling 21, linear extending 22, three-dimensional driven 23, each sequentially corresponding to the component's label number in FIG. 09. D and D' show the comparison of the three-dimensional driven subunit 2 which are each at the extending and the retracting statuses correspondingly of this embodiment.

[0091] This embodiment 2 comprising a universal joint 2102 with two-dimensional free, it pivotally coupling one end of the inner barrel 2101-1, the other end of the inner barrel 2101-1 is maintaining floating; the inner barrel 2101-1 mounts and receives the end fixed set 2201-2 and the main cylinder 2201 inside, and also receives the pipes set 101.

[0092] The outer barrel 2101-2 with linear sliding capability against the inner barrel 2101-1 and receives the inner barrel 2101-1 inside; the end of the driven bar of the main cylinder 2201 solid installed on the bar end fixer 2202, the bar end fixer 2202 solid installed within the outer barrel 2101-2. It provides the capability letting the outer barrel 2101-2 along the inner barrel 2101-1 axial direction extruding or contracting through the function of the main cylinder 2201.

[0093] The other end of the outer barrel 2101-2, receives the sub cylinder set 2311-1 as the solid mounted on the bar end fixer 2202. The end of the driven bar of the sub cylinder set 2311-1 as two-dimensional floating connected by the universal joint set 23123 with the three-dimensional swaying plate 2332. With the functions, it offered by the sub cylinder set 2311-1, then the three-dimensional driven subunit 2, it provides the anticipated three-dimensional swaying motion from this invention.

[0094] The three-dimensional swaying plate 2332 is solid installed on the frame of the body holder 31 shown in FIG. 11 and FIG. 12, it will bring the three-dimensional swaying motion to the body holder 31 as the predicted function from this invention.

[0095] Within FIG. 17, we dismantle all other components excepting the components such as the frame 11-00, the spring sets 11-08 and 11-09, the vertical height-setting panel 11-11, the vertical buffering panel 11-10, and the guiding bars 11-12-1, 11-12-2. The end fixed panel 2021 within FIG. 15 was solid mounted on the vertical buffering panel 11-10, it will allow the universal joint 2102, along the vertical direction with a limited buffering capability.

[0096] The kinetic energy transferring unit 1 within this embodiment 2, it is only the fluid pump 11-30 for normally using.

[0097] The fluid pump 11-30 it generates high pressure air or liquid, through the pipes set 101 guide into the three-dimensional driven subunit 2 within this embodiment 2;

[0098] The fluid pump 11-30 it shall not be focused on in this invention, then within the specification there without any drawing to describe it; just give a label as a component's name and number as the fluid pump 11-30, for describing it by words.

[0099] The body holding subunit 3 within this embodiment 2, it is everything being identical as in the embodiment 1; thus, it will not be described here once more.

BRIEFING ON DRAWINGS AND PHOTOS

[0100] FIG. 01 and FIG. 02 shown: The physiology generally in the university in which the drawings are regarding to the central nervous system.

[0101] FIG. 03 shown: A navigation compass, regardless the ship swaying, the compass its upward surface, still maintains upward direction constantly.

[0102] FIG. 04 shown: Suppose that the trunk of the human body represented by a rectangular block supported by a stand with three free axes' perpendicular to each other instead his feet standing to illustrate the dynamic balance.

[0103] FIG. 05 shown: A rocking drum for kids playing, to explain as the human body suffering the incoming attacking linear momentum or kinetic energy, it is, by the way, of ‘relaxation’ on limbs to transform it to the rotational momentum or kinetic energy and let it to be harmless.

[0104] FIG. 06 shown: The rectangular block, its normal vector at a', about its original place normal vector a, rotational moving with an angle 0.

[0105] FIG. 07 shown: Suppose that we use a bending shaft B with a bending angle 0, axially coupling at O at the center of this plane. At the other end b of the bending shaft B driven by a rotational moving, then the normal vector a' it will generate a rotational motion with angle 0 as in FIG. 06.

[0106] FIG. 08 shown: The block diagrams of ‘the world’s 1st instrument’ W-1st.

[0107] FIG. 09 shown: The symbolic plotting of ‘the world’s 1st instrument’ W-1st.

[0108] FIG. 10 shown: The block diagrams, in which the components of ‘the world’s 1st instrument’ W-1st with peripheral supporting subunit 4 expansion.

[0109] FIG. 11 shown: The perspective view of ‘the world’s 1st instrument’ W-1st in use.

[0110] FIG. 12 shown: The perspective view of ‘the world’s 1st instrument’ W-1st in using by removing the main cabinet 10-00 on another viewpoint.

[0111] FIG. 13 shown: The block diagrams of ‘the world’s 1st system’.

[0112] FIG. 14 is the perspective view of the three-dimensional driven subunit 2 in longitudinal cross section at the comparative status of embodiment 1.

[0113] FIG. 15 is the perspective view of the three-dimensional driven subunit 2 in longitudinal cross section at the comparative status of embodiment 2.

[0114] FIG. 16 is the perspective view of embodiment of the body holding subunit 3.

[0115] FIG. 17 is a perspective view of the embodiment 1 of the kinetic energy transferring unit 1.

[0116] Photo 01 and Photo 02 shown: Early at the end of 1983, the inventor got the nationwide champion on push-hand competition at 60 kg class in Taiwan, ROC, the photo with honor to be granting the gold medal and the certification of champion.
<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>Necessary primary subunit</td>
</tr>
<tr>
<td>🗼</td>
<td>Non-necessary secondary subunit</td>
</tr>
<tr>
<td>🏁</td>
<td>Mechanical energy source component</td>
</tr>
<tr>
<td>🏡</td>
<td>Suspension component</td>
</tr>
<tr>
<td>🏴</td>
<td>Peripheral supporting component</td>
</tr>
<tr>
<td>🚊</td>
<td>Weight adjustable component</td>
</tr>
<tr>
<td>🏁</td>
<td>Body holding component</td>
</tr>
<tr>
<td>🏸</td>
<td>Three-dimensional driven component</td>
</tr>
<tr>
<td>🏸</td>
<td>Linear extendable sliding or driven component</td>
</tr>
<tr>
<td>🏸</td>
<td>Two-dimensional free connecting component</td>
</tr>
<tr>
<td>⬛️</td>
<td>Co-axial or face to face fixed connecting between each component</td>
</tr>
<tr>
<td>🏸</td>
<td>Solid attached to certain fixed position</td>
</tr>
<tr>
<td>⬛️</td>
<td>Solid connection with tension between each component</td>
</tr>
<tr>
<td>⬛️</td>
<td>Functional connecting between each subunit</td>
</tr>
<tr>
<td>🏸</td>
<td>Trainee (user)</td>
</tr>
</tbody>
</table>
1. The world’s 1st instrument W-1st with the characters, it comprises the primary components:
   A mechanical energy transferring subunit 1;
   A three-dimensional driven subunit 2, it is direct coupled to the said mechanical energy transferring subunit 1;
   A body holding subunit 3, it is direct coupled to the said three-dimensional driven subunit 2;

   The said primary components to be defined as:
   A) The said mechanical energy transferring subunit 1, it is able to output the mechanical energy in any possible kinds of form, the said mechanical energy in this kind of form, it is able to be using by the direct coupled three-dimensional driven subunit 2 as a proper input; the mechanical energy transferring subunit 1 with the setting as a servomotor or a fluid pump, the said servomotor or fluid pump, are taking two different kinds of mechanical energy transformation, it causes the said mechanical energy transferring subunit 1 is able to output any kind of mechanical energy, which is meeting the necessary form as a proper input of the coupled three-dimensional driven subunit 2;
   B) The said three-dimensional driven subunit 2, it is able to accept the mechanical energy in any possible kinds of form, which is as a proper input; then transfer the said mechanical energy as a three-dimensional driving force, and the said three-dimensional driving force to be output to and to drive the coupled body holding subunit 3; it is comprising: a two-dimensional free universal joint component 21, a linear extendable driven component 22, a three-dimensional angular varying component 23;
   C) The said body holding subunit 3, it is able to firmly and un-pressingly holding the trunk portion of a trainee 0, and to accept the incoming three-dimensional driving force from the three-dimensional driven subunit 2, then with the function to force then driving the trunk of trainee 0; it is comprising: a body holder 31(H), a suspensor 32(S), a weight varying set 33(AW).

2. According to claim 1, said ‘the world’s 1st instrument’ W-1st with the character, additionally, it may attach a secondary component: a peripheral supporting subunit 4, the said peripheral supporting subunit 4, it comprise: a power supply subunit 5, a local sensing subunit 6, a local monitoring subunit 7, a local central control and processing subunit 8, and a far end communication subunit 9.

3. According to claim 1, said ‘the world’s 1st instrument’ W-1st with the character, ‘the world’s 1st instrument’ W-1st, additionally, it may attach a secondary component: a peripheral supporting subunit 4, in which a far end communication subunit 9 through internet 1300 connect to a far end central control and processing center 1301, to compose ‘the world’s 1st system’; In said ‘the world’s 1st system’, all of each and any globally distributed ‘the world’s 1st instrument’ W-1st to be connected through the internet 1300 to the far end central control and processing center 1301;

   The real time information after mass comparison and over all appraisals by the far end central control and processing center 1301, it is with the function which is possessing the ability to be objectively able to appraisal the real fighting ability index of the trainee 0; additionally, with the ability to offer the proper therapeutic suggestion to the user as the structural and functional characters.

4. According to claim 1, said ‘the world’s 1st instrument’ W-1st with the character, in the said body holding subunit 3, additionally, the said body holder 31 is able to firmly and un-pressingly holding the trunk portion of a trainee 0;

   The said weight varying set 33, it generates a time varying force along the gravitational direction, then act on the trainee 0; the insufficient force along the gravitational direction, it comes out from the said three-dimensional driven subunit 2, to be accomplished by the said weight varying set 33;

   The said suspensor 32, it comprises: a safety belt and a pulley set; through this suspensor 32, the said weight varying set 33 transmit the time varying force along the gravitational direction to the said body holder 31 and then act on the trainee 0.

5. According to claim 1, said ‘the world’s 1st instrument’ W-1st with the character, in which:

   The main cabinet 10-00 is solid installed on supporting deck 32-00, with a narrow opening 10-01 face to a trainee;

   This narrow opening 10-01 will allow the three-dimensional driven subunit 2 and the mechanical energy transferring subunit 1 connecting through;

   A monitor 42-00 is installed on the main cabinet 10-00 also;

   The main cabinet 10-00, it receives all major components of ‘the world’s 1st instrument’ W-1st and ‘the world’s 1st system’;

   The trainee dressed in the body holder 31, through the coupling of the three-dimensional driven subunit 2 and the mechanical energy transferring subunit 1 within the main cabinet 10-00, achieves the training goal;

   The pressure-sensing pad 43-0 is solid installed on supporting deck 32-00, containing pressure sensor inside;

   The fixed pulley set 32-01-1, 32-01-2, 32-01-3, 32-01-4 solid installed on the main frame 32-04 with a movable pulley 32-06 and a safety belt 32-05 solid connected to the body holder 31 on shoulders provides secure safety as the trainee falls down just in case;

   The video camera 41-01, 41-02 it supervises the real time status on training of the trainee for the movement analysis and educational use in future;

   The local central processor 45-0 belongs to the peripheral supporting subunit 4; the mechanical energy transferring subunit 11 solid installed on the supporting deck 32-00;

   The trainee, he dressed in the body holder 31 on which, where at 44-00-1, 44-00-2, 44-00-3, and 44-00-4 or some other proper place on the body holder 31;

   The sensing elements set are installed, these sensing elements may include contacting pressure, pulse, blood pressure, body temperature . . . etc.; on the necessity of any kind of sensor, for collecting the real time information within the training period.

6. According to claim 1, said ‘the world’s 1st instrument’ W-1st with the character, in which:

   The said body holding subunit 3, additionally, it comprises:

   The mainframe 32-04 solid installed on supporting deck 32-00;

   The fixed pulley set 32-01-1, 32-01-2, 32-01-3, 32-01-4 solid installed on the main frame 32-04 with a movable pulley 32-06 and a safety belt 32-05 solid connected to the body holder 31 on shoulders;

   It provides secure safety as the trainee falls down, just in case; In the center of itself of the floating container
33-01-1, it possessed an airtight tube with both end open, the other end of the hook with a ring, which is the central hook ring 33-05-1; It penetrated the central tube of this floating container 33-01-1, and hooked on the ending ring beneath the moveable pulley 32-06; At the ending ring below the central hook ring 33-05-1, with simple length adjustable a chain hook 33-05-2 connected, and the other end of the chain hook 33-05-2 is solid fasten to the supporting deck 32-00; Its length with the principal not allows the trainee’s hips touching the upper surface of the supporting deck 32-00, when the trainee falls down just in case as the character; Weight varying adjustable AW, it comprises; Between two volumes determined airtight containers as a floating container 33-01-1 and a fixed container 33-01-2, with two pipes, an air-pipe 33-02-1 and a liquid-pipe 33-02-2 mutually conduct each other; In which insert an air pump 33-04-2 and a switching valve 33-04-1 within the air-pipe 33-02-1, to control the air pressure inside of the floating container 33-01-1, then it got the result of changing the liquid level of the floating container 33-01-1; thus, we can adjust the overall weight that presented by the floating container 33-01-1 as the character.

7. According to claim 1, said "the world's 1st instrument" W-1st with the character, in which:

- The said three-dimensional driven subunit 2, it comprises a universal joint 2101 with two-dimensional free, of which accepting the input rotational kinetic energy from the mechanical energy transferring subunit 1 co-axially solid installs to slot shaft 2215;
- The necessary displacement, it is provided by the co-axially coupling of the slot shaft 2215 with the slot shaft sleeve 2214;
- The other end of the slot shaft sleeve 2214 solid connected to the angular bending connector 2213 co-axially;
- The angular bending connector 2213 through the shaft bearing 2301 co-axially coupling to the three-dimensional swaying plate 2331, then the three-dimensional driven subunit 2, it provides the anticipated three-dimensional swaying motion from this invention;
- The sliding end stopper 2215-2 solid installed on the other end of the slot shaft 2215, the slots at both sides of the sliding end stopper 2215-2 to receive the linear displacement buffering spring set 2215-3X2;
- With the spring function that is provided by the linear displacement buffering spring set 2215-3X2, the rigidly colliding wouldn’t be happening as the slot shaft 2215 sliding to both ending limits of the slot shaft sleeve 2214;
- The slot shaft core 2215-1 linear sliding co-axially coupled with the slot shaft 2215;
- The slot shaft core 2215-1, it is solid installed in the slot shaft sleeve 2214 to transmit the rotational kinetic energy;
- Between the external sleeve 2211 and the slot shaft sleeve 2214 in which inserted a ball bearing set that is composed by the ball bearings 2214-1, 2214-2 and 2214-3, to isolate the rotational motion, it will approve the external sleeve 2211 without rotational motion to prevent dangerous;
- Besides this, a high-density elastic substance formed the spring sleeve 2211-1; it provides more protection to prevent the injury of what it is caused by the collusion of high-speed swing arms from the body swaying of the trainee;
- The angular bending connector 2213 co-axially solid connected between the slot shaft sleeve 2214 and the ball bearing set 2301, the three-dimensional swaying plate 2331 isolating rotational motion by ball bearing set 2301; it only generates the three-dimensional swaying motion from the function of the angular bending connector 2213;
- The three-dimensional swaying plate 2331 is solid installed on the frame of the body holder 31, it will bring the three-dimensional swaying motion to the body holder 31 as the predicted function from this invention as the characters.

8. According to claim 1, said "the world’s 1st instrument" W-1st with the character, in which:

- The three-dimensional driven subunit 2, it comprises a universal joint 2102 with two-dimensional free, it pivotally coupling one end of the inner barrel 2101-1, the other end of the inner barrel 2101-1 is maintaining floating; the inner barrel 2101-1 it mounts and receives the end fixed set 2201-2 and the main cylinder 2201 inside, and also receives the pipes set 101;
- The outer barrel 2101-2 with linear sliding capability against the inner barrel 2101-1 and receives the inner barrel 2101-1 inside;
- The end of the driven bar of the main cylinder 2201 solid installed on the end bar fixer 2202, the bar end fixer 2202 solid installed within the outer barrel 2101-2; it provides the capability letting the outer barrel 2101-2 along the inner barrel 2101-1 axial direction extruding or contracting through the function of the main cylinder 2201;
- The other end of the outer barrel 2101-2, receives the sub cylinder set 2311-1X3 and solid mounted on the bar end fixer 2202; the end of the driven bar of the sub cylinder set 2311-1X3 two-dimensional floating connected by the universal joint set 2312X3 with the three-dimensional swaying plate 2332;
- With the functions, it offered by the sub cylinder set 2311-1X3, then the three-dimensional driven subunit 2, it provides the anticipated three-dimensional swaying motion from this invention;
- The three-dimensional swaying plate 2332 is solid installed on the frame of the body holder 31, it will bring the three-dimensional swaying motion to the body holder 31 as the predicted function as the characters.

9. According to claim 1, said "the world’s 1st instrument" W-1st with the character, in which:

- The said mechanical energy transferring subunit 1, it comprises the frame 11-00 solid installed on the supporting deck 32-00, to provide the supporting and installing function for all other components within the kinetic energy transferring unit 1;
- Speed descending servomotor 11-02 by extending frame 11-03 is solid installed on the frame 11-00; its output rotational force through a v-belt pulley 11-04-01, pulley supporting arm 11-04-2, v-belt pulley 11-04-04, v-belt pulley 11-06-01, pulley supporting arm 11-06-2, v-belt 11-06-3, and v-belt pulley 11-06-04 to the output shaft 11-01;
Inserts the spring sets 11-08 and 11-09 between the vertical height-setting panel 11-11 and the vertical buffering panel 11-10, and installs them along the guiding bars 11-12-1, 11-12-2.

Adjusts the height of the vertical height-setting panel 11-11 depending on the height of the trainee properly;
The bearing of the output shaft 11-01 solid mounted on the vertical buffering panel 11-10, it will allow the output shaft 11-01, along the vertical direction with a limited buffering capability;

The pulley supporting arm 11-06-1 and the pulley supporting arm 11-06-2 at the elbow 11-05 provide an elbow floating capability through the cooperation on both the elbow 11-05 and the vertical buffering panel 11-10, then the output shaft 11-01 possesses the power transferring and the vertical direction with limited buffering capabilities as the characters.

10. According to claim 1, said ‘the world’s 1st instrument’ W-1st with the character, in which:

The said mechanical energy transferring subunit 1, it comprises the frame 11-00 solid installed on the supporting deck 32-00, to provide the supporting and installing function for all other components within the kinetic energy transferring unit 1;

Inserts the spring sets 11-08 and 11-09 between the vertical height-setting panel 11-11 and the vertical buffering panel 11-10, and installs them along the guiding bars 11-12-1, 11-12-2;

It adjusts the height of the vertical height-setting panel 11-11 depending on the height of the trainee properly; It will allow the vertical buffering panel 11-10, along the vertical direction with a limited buffering capability;

The end fixed panel 2021 of the three-dimensional driven subunit 2, was solid mounted on the vertical buffering panel 11-10, it will allow the universal joint 2102, along the vertical direction with a limited buffering capability;

It was operating with a fluid pump 11-30, through the pipe set 101 connect to the three-dimensional driven subunit 2, to achieve the mechanical energy transforming and transferring function as the character.

11. A three-dimensional driven subunit 2, it comprises a universal joint 2101 with two-dimensional free, of which accepting the input rotational kinetic energy from the mechanical energy transferring subunit 1 co-axially solid installs to slot shaft 2215;

The necessary displacement, it is provided by the co-axially coupling of the slot shaft 2215 with the slot shaft sleeve 2214;

The other end of the slot shaft sleeve 2214 solid connected to the angular bending connector 2213 co-axially;

The angular bending connector 2213 through the shaft bearing 2301 co-axially coupling to the three-dimensional swaying plate 2331, then the three-dimensional driven subunit 2, it provides the anticipated three-dimensional swaying motion from this invention;

The sliding end stopper 2215-2 solid installed on the other end of the slot shaft 2215, the slots at both sides of the sliding end stopper 2215-2 to receive the linear displacement buffering spring set 2215-3X2;

With the spring function that is provided by the linear displacement buffering spring set 2215-3X2, the rigidly colliding wouldn’t be happening as the slot shaft 2215 sliding to both ending limits of the slot shaft sleeve 2214;

The slot shaft core 2215-1 linear sliding co-axially coupled with the slot shaft 2215;

The slot shaft core 2215-1, it is solid installed in the slot shaft sleeve 2214 to transmit the rotational kinetic energy;

Between the external sleeve 2211 and the slot shaft sleeve 2214 in which inserted a ball bearing set that is composed by the ball bearings 2214-1, 2214-2 and 2214-3, to isolate the rotational motion, it will approve the external sleeve 2211 without rotational motion to prevent dangerous;

Besides this, a high-density elastic substance formed the spring sleeve 2211-1; it provides more protection to prevent the injury of what it is caused by the collision of high-speed swing arms from the body swaying of the trainee;

The angular bending connector 2213 co-axially solid connected between the slot shaft sleeve 2214 and the ball bearing set 2301, the three-dimensional swaying plate 2331 isolating rotational motion by ball bearing set 2301; it only generates the three-dimensional swaying motion from the function of the angular bending connector 2213; it will bring the three-dimensional swaying motion as the predicted function as the characters.

12. A three-dimensional driven subunit 2, it comprises a universal joint 2102 with two-dimensional free, it pivotally coupling one end of the inner barrel 2101-1, the other end of the inner barrel 2101-1 is maintaining floating; the inner barrel 2101-1 it mounts and receives the end fixed set 2201-2 and the main cylinder 2201 inside, and also receives the pipes set 101;

The outer barrel 2101-2 with linear sliding capability against the inner barrel 2101-1 and receives the inner barrel 2101-1 inside;

The end of the driven bar of the main cylinder 2201 solid installed on the bar end fixer 2202, the bar end fixer 2202 solid installed within the outer barrel 2101-2; it provides the capability letting the outer barrel 2101-2 along the inner barrel 2101-1 axial direction extruding or contracting through the function of the main cylinder 2201;

The other end of the outer barrel 2101-2, receives the sub cylinder set 2311-1X3 and solid mounted on the bar end fixer 2202: the end of the driven bar of the sub cylinder set 2311-1X3 two-dimensional floating connected by the universal joint set 2312X3 with the three-dimensional swaying plate 2332;

With the functions, it offered by the sub cylinder set 2311-1X3, then the three-dimensional driven subunit 2, it provides the anticipated three-dimensional swaying motion as the characters.

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