PATENT AGENT EXAMINATION, 2011

(Under Section 126 of the Patents Act, 1970, as amended)

January 15, 2011

PAPER II

TOTAL MARKS: 100

Time: 2.30 PM to 5.30 PM (3 hours)

Total number of pages: 11

Instructions:

1. This paper consists of 2 parts

2. Part A of 40 marks requires you to answer all four questions of 10 marks each.

3. Part B has two sections (Part B! and B2).

4. Part B1 is compulsory of 30 marks.

5. Part B2 has two questions and you are required to answer any one of them for 30 marks

6. If there is a word limit in the question it should be followed strictly or else the answer can be rejected.

7. Read the questions carefully before answering them. No clarification or doubt can be sought on the questions to the invigilators and you need to interpret it from the questions given as it is.

PART A (4X10 = 40 MARKS)

Question 1

Rahman Roshan, a student of one of the IITs came up with an invention which is a cylindrical slide which can be installed in the balcony of high rise apartments. In case of any emergency of fire or earthquake, the inmates roll the cylindrical slide to the ground floor and can slide to safety.

He shared his views with his brother in a private conversation who is an editor of journal 'Safe Houses' in February 2010.

He conducted a trial of his invention from the ninth floor of his hostel to assess the effectiveness in March 2010

He wanted to know the feedback of this invention and exhibited the same in an exhibition 'New Millennium Designs' at Raffles Centre in Singapore on July 2nd of 2010.

In the meanwhile he learnt that his brother published the details he shared in "Safe Houses" journal issue dated August 2010.

In September 2010 he filed a provisional application in the Indian Patent office and complete specification in January 2011.

Rahman Roshan approaches you with the above facts and seeks your consultation on whether any of these events will impact the granting of the patent.

Give your written statement with the relevant sections of the Patent Act to this client and explain the position of the issues stated that will have an impact on granting of the patent

Question 2

Sumathy an R&D Scientist is married to Anand. After few years of marriage she found her husband snoring which disturbed her sleep.

She found the anti-snoring devices in the market not very effective and convenient and came up with her own invention which is a mask which will transmit the noise to a small box kept under the bed, thereby reducing the snoring noise by about 90%. She filed a patent for the same and was granted in December 2007.

Later, in July 2010 she came up with a new idea wherein the snoring noise is transmitted from the mask to the box which is now connected to a small electronic device with a key board which converts it as to soothing background music. She seeks your advice on to how best to protect this improvisation.

Based on the relevant sections of the Indian Patent Act, prepare a brief on the best strategies available to protect the invention of this client.

Question 3

Raja and Radha did their PhD together in Indian Institute of Science Bangalore in the field of Biotechnology. After completing their doctoral programme they planned to set up their own lab with a loan from a bank. They started working on a novel dermal application which will heal severe burn wounds and will grow the skin back in a short time and no such dermal application was known in the prior art.

In the course of their working together they also came to the view based on their compatibility in professional interest and other issues they will get married. They jointly filed for patent and also received the patent in December 2009.

Raja orally promised her that if they license the patent, Radha can take 75% of the profit as he cared for her and it is a pre-marriage gift to her in a private meeting with her. They have an offer for a licence for this patent from a company for a hefty amount.

In the course of next few months they developed differences in their relationship and eventually decided not to marry. After some time they bitterly quarreled and decided to part ways.

Radha approaches you and complaints that Raja is retracting from his earlier promise to give her the 75% as promised and says that he will give only 50% of the amount. Further she states that Raja also wants it to be licensed to another friend of his who is offering a lesser licence fee which is not acceptable to her. She approaches you for a consultation on the above issues.

You are required to give an advice based on the relevant sections of the Patents Act and any remedy you can get by approaching the Controller.

Question 4

Brahma is a retired naval officer in Chennai. After his retirement he set up his own lab for research and development. He developed an ultrasonic device which can identify dolphins. This device if attached to the large fishing nets can identify if a dolphin is entrapped and the same can be released by the fishing vessels by a release mechanism in the net. As dolphins are also a protected species, this invention has a great potential for commercial interest. He applied for a patent and received it in 40 countries in January 2009.

In December 2009 he came to know that a fishing vessel from Lemuria was fishing in Indian territorial waters and was confiscated by the Indian Navy and brought to Chennai port.

The captain of the vessel pleaded that they lost their way due to failure of their navigation direction software and thus entered the territorial water. The Lemurian embassy at Delhi had taken up their case. He also learnt that they used fishing nets which contained his patented ultrasonic device made in country Lemuria. Lemuria is a new nation state does not have any patent laws and are in the process of preparing one.

Brahma approaches you to consult whether he can file a suit of infringement on the company owning the vessel for infringing the patent. Based on the above facts you are required to prepare a consultation note to your client based on the relevant provisions of the Indian Patent Act.

Part B (60 Marks)

This part contains three questions of 30 (thirty marks each). The first part of B1 is compulsory and in B2 you need to answer one question.

Part B1 -Question I

After reading the specification stated below,

I. Draft 10 claims

II. Draft an Abstract (maximum of 140 words)

FIELD OF THE INVENTION

The present invention is device meant for dogs which is attached to a bicycle, tricycle or similar moving vehicle enabling the user to operate the vehicle and exercise the dog in a safe and efficient manner.

BACKGROUND OF THE INVENTION

Many people exercise their dogs by taking them for a walk. However, it is known that walking a dog does not provide the dog with sufficient exercise unless the dog is walked for extensive periods of time. However, most people do not take a dog for a lengthy walk because it is too exhausting or too boring.

The alternative is to exercise the dog while riding a bicycle. This is done by pedaling in the customary manner while holding the dog's leash in one hand or attaching the leash to the handle bars or other portion of the bicycle frame.

While this manner of exercise provides the dog with an excellent workout, it does however, subject both the dog and rider to possible serious injury. For example, the rider and/or dog may be injured if the dog should accidentally suddenly pull away from the bicycle or bump into the wheels or pedals. It is obvious that even a minor tug by the dog can cause the rider to lose control of the bicycle.

The dog may also be injured if either the dog or the bicycle comes to an abrupt halt. This can cause the leash to strangle the dog and topple the bicycle. In addition, if the leash should become entangled in the pedals, the dog may be strangled as well.

It is thus apparent that despite the benefits of exercising a dog while riding a bicycle, the dangers of this form of exercise far outweigh the benefits. It is therefore an object of the invention to provide a device for exercising a dog while riding a bicycle in which the dog cannot interfere with the rider. It is another object of the invention to provide a device which is resilient and provides controlled resistance to the movement of the dog.

DETAILED DESCRIPTION OF THE INVENTION

The device according to the present invention includes a bracket adapted to be attached to the frame of the bicycle away from the pedals and preferably as close to the ground as possible. Extending outward and essentially perpendicular from the frame is a first bar. The length of the first bar determines the distance between the dog and the frame of the bicycle when the exercising device is attached to the dog through a leash.

The bar is attached to the bar through a resilient means such as a spring and a fastening device. The fastening device is secured to the first bar through a bolt or other suitable device and includes a block having grooves on the exterior surface for securely retaining therein individual turns of the spring. A similar block is mounted to the second bar for securing the spring thereto.

The bar is provided with an adjustment mechanism which is adapted to regulate the incline of the bar to thereby adjust the distance of the dog from the bicycle. There is also provided a second adjustment mechanism which also serves to adjust the incline of the bar.

In accordance with the invention the length of the bars may be adjusted to accommodate the size of the frame of the bicycle and the resiliency or strength of the spring can be adjusted to accommodate the size of the dog to be exercised. Thus, in a preferred embodiment, the spring may be easily removed and replaced according to the needs of the user.

The fastening device of the invention as previously described may be constructed so as to permit the spring to come out of the grooves when the spring is subjected to an excessive load.

The adjustment mechanisms and may be replaced by a single, adjustable joint (e.g. a ball joint) to achieve the same functions as the individual adjustment mechanisms. The single adjustment joint may be affixed to the bar.

The bar is rigid and has a U-shape. The resilient means and the bar may be formed integral with each other. The bar may be provided at one end with a loop. An attachment device is secured to the loop of the bar and includes a first hook for removably attaching to the loop and a second hook which is adapted to removably attach to the collar of the dog. The hooks and are preferably affixed to an elastic member such as a rubber band or similar member. The hooks are adapted to instantaneously disengage from the loop and the collar of the dog, respectively when subjected to a heavy load if the dog or bicycle should hit a stationary object such as a tree wherein the dog will be easily disengaged from the device to thereby prevent injury.

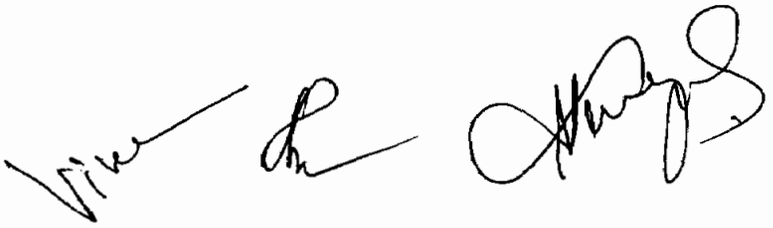
The bar may be provided with a bore or hole at an end remote from the resilient means for the purpose of securing a bracket to the frame of the bicycle. The hole is adapted to receive the end of a securing means. The securing means is also placed through a corresponding hole in a fastening bolt which is sized to fit with the end of the bar.

The bracket is provided with bolt holes which receive fastening bolts or screws. The respective opposed portions of the bracket are adapted to be secured about the generally cylindrical frame of the bicycle. The bracket may also be provided with a protective lining on the inner surface of the portions to protect the frame of the bicycle.

A preferred fastening arrangement for the bar comprises a support prop which may be fastened in one end of the fastening bolt which may have an oblong shape and has in a rearward end a W-shaped fastening bracket for securing the device to the back wheel supports of the bicycle. Such a device is suited to prevent the bar from twisting about the frame when subjected to a heavy load.

It employs a safety device such as a split ring capable of instantaneously disengaging the dog from the apparatus. Such a device may be placed between the loop and the carbine hook, and/or the carbine hook and the leash of the dog. The split is positioned between the loop and the hook and the split ring is positioned between the hook and the leash. Either or both split rings may be used.

The safety device is adapted to free the dog instantly under a load which would otherwise injure the dog such as if the leash becomes stuck or entangled in a stationary object such as a tree.



PART B2

Question 1.

A client meets you and provides you with the information below. You are required to draft a complete specification to file a Patent in the Indian Patent Office.

The invention relates to Ignition foiling device which serves to interfere with the efficient operation of a vehicle ignition system after a brief, predetermined period of time has elapsed subsequent to the unauthorized start-up of the vehicle engine.

Invention

1. The ignition pulse train which flows to the ignition coil primary is interfered with in a sporadic way, or else stopped altogether after an anomalous period of time, by a fast acting shunting switch such as a thyristor or a transistor.

2. In this invention the ignition foiling means is disabled or shut-off by the authorized operator of the vehicle through a separate and usually hidden key switch, or otherwise obscured secret switch.

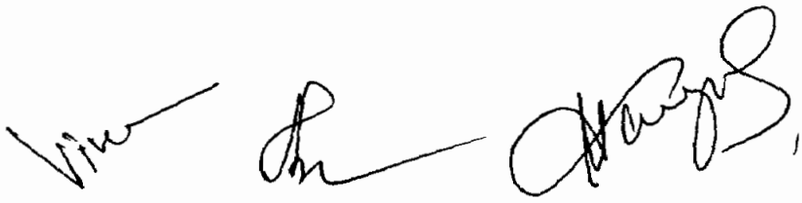
3. In the event that an illegal operator tries to obtain engine start-up, the ignition foiling means will of course not be defected and thereby the foiling control effect comes into play.

4. Once the vehicle moves a little distance giving an illusion of engine misfire and later will have no fuel to run as the fuel pipe is blocked.

5. The actual time which may elapse from the unauthorized start-up of the vehicle and the onset of ignition fouling may be accomplished most preferably through the actual pulse counting of the ignition pulses arriving from the ignition coil, which means there will be a variable time elapse with each foiling operation, since the time delay depends on engine speed.

6. The foiling time delay is determined by a clock means which produces a relatively constant initial delay period, usually followed by an irregular series of foiling intervals which become progressively more objectionable. Therefore, the overall time elapse from startup until the vehicle operation fails will always be somewhat different, giving the illusion of ordinary failure due to faulty vehicle operation.

7. Aside from the irregular ignition fouling effect, an irregular honking of the vehicle horn or other such alarm device after the elapse of the initial delay period. This



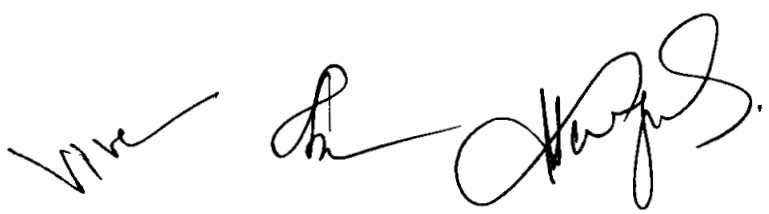
produces an attention getting public outcry where the illegal operator will end up in abandoning the vehicle

BACKGROUND OF INVENTION

The protection of a motor vehicle against illegal confiscation, viz. theft, has been accomplished before through the installation of a hidden fuel shutoff valve. When such a valve is turned "off", the protected vehicle is allowed to start up in a normal way and operate for a brief period of time during which it consumes the limited amount of fuel contained in the carburetor bowl, etc. This limited operation of the engine encourages the thief to drive the vehicle from its obscure location where the thief feels safe, to a more public view where continued theft activity would be discouraged by exposure. Furthermore, the time the vehicle operates before the limited fuel is consumed will vary from one vehicle to another due to differences to residual fuel left after the cutoff valve, and the vehicle's consumption rate. The time will also vary in any given vehicle depending on the presumably illicit driver's driving style, e.g. racing the engine will consume the limited amount of fuel more quickly than a leisurely, idle speed drive away. The inclusion of such cutoff devices has limited popularity because it involves difficult, costly installation which has limited variability in the choice of a good hidden location for the shutoff device.

It therefore appears that a means for producing the same kind of desired irregular time duration limited drivability effect prior to total vehicle disablement is desirable. If such a device can be easily installed at low cost and without inter coupling with the vehicle's fuel system. The limited operation of the vehicle electrical ignition system is selected as the best embodiment for my invention, in that inter coupling with the ignition system is easily undertaken, even by the "Saturday afternoon mechanic". Since the operation is entirely electric in nature, the secret switch can be situated in a multitude of locations unique to each operator's choice. This advantage of course makes the switch discovery much more unlikely, even by a skilled potential thief. The likelihood of easy discovery is largely determined by the ingenuity of the individual installer's choice of location options. Additionally, the hidden switch may be key operated.

The resulting theft deterring effect which would be desirable would produce an experience quite similar to that now produced by fuel cutoff, wherein the vehicle starts up, but then soon exhibits erratic running behaviour which shortly becomes progressively worse, or else the vehicle falters altogether in its operation after a short period of seemingly normal operation. This false start generally serves to enable the thief to have to expose himself in a way that should lead to his abandonment of the theft project. It also produces the illusion of faulty vehicle operation, which may discourage the thief.



Prior Art

The earlier shut off devices do not give irregular firing of the engine and cannot deter the thefts and the location is not fixed and cannot be detected.

Question 2

A client meets you and provides you with the information below. You are required to draft a complete specification to file a Patent in the Indian Patent Office.

Invention in brief:

To achieve continuous delivery of the protein or peptide in vivo, a sustained release or sustained delivery formulation is desirable to avoid the need for repeated administrations.

Approaches generally followed: microencapsulation to produce micro particles. Encapsulation of a biologically active or pharmaceutically active agent within a biocompatible, biodegradable wall forming material such as a polymer, to provide sustained or delayed release.

Generally agent or drug is dissolved, dispersed or emulsified, using stirrers, agitators, or other dynamic mixing techniques, in one or more solvents containing the wall forming material. The solvent is removed.

Prior art discloses a set of inert substances such as poly (lactide) (PLA) or poly (lactide-co-glycolide) (PLGA) microspheres or films containing the active agent to be used as sustained-release devices

Desirable attributes: sufficiently good control of the release of the encapsulated active agent; No or minimum side effects; integrity of the active agent is maintained during manufacture; e.g. configuration of most protein and peptide drugs are dependent on a three dimensional conformation for their bioactivity and that conformations can easily be compromised.

Pharmaceutical compositions : a stable sustained release complex composed of a protein and/or peptide and a gallic acid ester that allow for sustained delivery of the protein or peptide in vivo upon administration of the complex. The complex permits continuous delivery of a pharmaceutically active peptide to a subject for periods of time less than about one or two weeks. The complex is formed by combining a protein or peptide and a gallic acid ester under specific conditions. The complex is poorly soluble in water and can be purified from various aqueous solutions. As the complex is in the form of a solid (e.g., a paste, granules, a powder or a lyophilizate), the complex can be

prepared for administration to a subject as a stable liquid suspension or semi-solid dispersion.

The purified complex of a peptide of 20 amino acids or less and a purified gallic acid ester, wherein said peptide is a Bl peptide antagonist. The complex is a salt of the peptide and the gallic acid ester. The gallic acid ester is selected from the group consisting of PentaGalloylGlucose (PGG) and epigallocatechin gallate (EGCG). The purified gallic acid ester is PentaGalloylGlucose(PGG). The complex is a salt of the peptide and PGG, and said salt has a release duration in an animal upto two weeks. When the complex is a salt of the peptide and PGG, the salt has a release duration in an animal less than one week. When the complex is a salt of the peptide and PGG, it has a release duration in an animal of less than 4 days. The purified gallic acid ester may be epigallocatechin gallate (EGCG). The peptide is selected from i) DOm Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg; and ii) Acetyl Lys Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg wherein DGrn is the D isomer of ornithine, Hyp is Trans-4-hydroxy-proline, Dtic is the D isomer of l,2,3,4-tetrahydroisoquinoline-3-carboxylic acid, and Cpg is cyclop entylglycine. The peptide in the complex is in excess of the purified gallic acid ester on a weight/weight basis.The molar ratio of peptide to purified gallic acid ester is 1:1, 1:2, or 1:3.

The method of making the sustained release composition: combining a solution of a peptide of 20 amino acids or less, and a solution of purified gallic acid ester. The complex is formed at a pH from 6.5 to 8.6. The complex is precipitated out of the solution to obtain a sustained release composition. The peptide is selected from i) DOrn Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg; and ii) Acetyl Lys Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg wherein DOrn is the D isomer of ornithine, Hyp is Trans-4-hydroxy-proline, Dtic is the D isomer of l,2,3,4-tetrahydroisoquinoline-3-carboxylic acid, and Cpg is cyclopentylglycine.

The gallic acid ester is PGG., and the gallic acid ester is EGCG.The purified complex is formed at a pH from 6.0 to 9.0.

Examples

This provides a description of a preparation of Peptide B-PGG salt (1:1 molar ratio of Peptide B (POm Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg)"to PGG). A stock solution of PGG was made by dissolving 94 mg of PGG in 2 ml of NaOH solution (concentration of NaOH from 0.10 to 0.20 N) following by filtering it through a 0.2 um filter. To a stock solution of PGG (1.56 ml) was added sequentially a solution of 109,4 mg of Peptide B acetate salt in 0.8 ml water with stirring and a precipitate formed. The precipitate was recovered by centrifugation. The supernatant was decanted and the precipitate was washed with 0.5 ml water 3 times. The precipitate was dried in vacuum at approximately 30-35°C for approximately 20 hours to yield 125 mg (76%). The Peptide B-PGG salt was an off-white powder.

Salts of Peptide A-PGG and tannate were made in a similar way to Peptide B-PGG in earlier example.Peptide A was Acetyl Lys Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg-

The study of the effect of salt formation pH (i.e. concentration level of NaOH) on the yield, peptide content and solubility of Peptide B-PGG salt was investigated. Four Peptide B-PGG salts at pH 7.0, 7.2, 7.6 and 8.6 were prepared and isolated. Their solubility in water and PBS, and also their peptide content were then determined. These results demonstrate (Table 3) that aqueous solubility, yield of salt formation and peptide content increase with increasing pH during salt formation.The sustained release of Peptide B/PGG and Peptide B/tannate salts in rats is demonstrated here. The rat pharmacokinetics (PK) studies were performed by a single subcutaneous injection (10 mg/kg dose) of Peptide B/PGG salts and Peptide B/tannate salt suspended in TRIS buffer; and a PBS solution of Peptide B acetate as a control group. The PK results showed one-week sustained release for Peptide B/ tannate salt and Peptide B-PGG salt that prepared at pH 7,0. However, Peptide B-PGG salts prepared at pH 7.6 and 8.6 showed shorter release duration (around 2-3 days) compared to salt prepared at pH 7.0 (up to two weeks).

A pure anomer (beta-PGG) and a mixture of anomers (alpha + beta-PGG) of PGG salts of Peptide B (DOrn Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg) were prepared by a similar method to that described in Example 1. There was no significant difference in the aqueous solubility of these salts. Based on aqueous solubility, it is expected that the in vivo sustained release duration for these salts would be similar.

The following describes the use of EGCG to make a salt with a peptide, which was tested in an animal pharmacokinetic (PK) study for sustained release. A stock solution of EGCG (Sigma-Aldrich) was made by dissolving 184 mg of EGCG in 2 ml of 0.2 N NaOH followed by filtering it through a 0.2 um filter. To a stock solution of EGCG (1,4 ml) was slowly added a solution of 138 mg of acetate salt of Peptide B (DOrn Lys Arg Pro Hyp Gly Cpg Ser Dtic Cpg) in 1.2 ml water with stirring. The resulting suspension was stirred for approximately 10-15 minutes at room temperature. After centrifugation, the supernatant was decanted and the precipitate was washed with 1 ml water (3 times by centrifugation and decantation of supernatant). The precipitate was dried under vacuum at approximately 30-35°C for approximately 20 hours to yield 218 mg (88%) of Peptide B-EGCG salt as an off-white powder.

The peptide content of the Peptide B/EGCG salts were 47-50%. The aqueous solubility for the salt with 1:3 molar ratio of peptide to EGCG is < 0.5 mg/ml in water and < 0.05 mg/ml in PBS, and for 1:2 molar ratio of peptide to EGCG, solubility is approximately 1 mg/ml in water and approximately 03 mg/ml in PBS. A rat PK study was performed using a single sc injection (10 mg/Kg dose) of '593/EGCG salt suspended in TRIS buffer, pH7.0. The PK result showed sustained release of Peptide B for multiple days with the blood level > 26 ng/ral at 24 hours, then a decrease to. approximately 5 ng/ml at 96 hours.