

- (21) Application No. 46905/73
- (22) Filed 1 April 1974
- (44) Complete Specification published 3 March 1976
- (51) INT CL² H02K 41/02
- (52) Index at acceptance
H2A 1N
E1G 90A 90E



(54) USING MAGNETIC COILS TO PRODUCE PERIODICALLY APPLIED FORCES TO MAINTAIN THE HIGH SPEED MOVEMENT OF BODIES AND VEHICLES, PARTICULARLY IN TUBES EVACUATED OF AIR

(71) I, ARTHUR PAUL PEDRICK, British subject, of "One-Man World Technology Think-Tank Research Laboratories", 77 Hillfield Road, Selsey, Sussex, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention is concerned with the projection of bodies at high speed, with their velocity maintained by the effect of periodically applied forces exerted thereon by the effects of magnetic fields.

In considering the movement of bodies and vehicles such as high speed trains, it appears essential to reduce air resistance to enclose the bodies, or trains, in tubes from which the air can be, to a large extent, evacuated.

In such circumstances the retarding force upon the body or vehicle will then be limited to the rolling friction of the wheels, or rollers on which it runs, or this may even be reduced substantially to zero, if some form of magnetic levitation is used.

It has been pointed out indeed in an earlier patent, that the most rapid form of communication between two points on the surface of the Earth, would be that achieved by putting a tube round the Earth, pumping all the air out of it, and putting a vehicle in Earth orbit as a satellite in such tube. If the tube was close to the surface of the Earth, the orbital speed would then be about 18,000 miles per hour, as compared to that for a satellite in orbit above the air layer moving at about 17,000 miles per hour.

However, such an arrangement is obviously impracticable as a normal means of communication and is only referred to as a "possibility", and the invention is concerned with the projection of bodies and vehicles at much more moderate, if high, speeds.

In the accompanying drawings:

Figure 1 of the drawings shows a ball

which is supposed to be running along a tube evacuated of air.

Figure 2 shows the well known effect of the magnetic field created by an electric current on a body of metal passing through a coil of conducting cable; and

Figure 3 shows how this magnetic force can be used to maintain a very high speed of a ball passing along a tube against very low air resistance.

Figures 4 and 5 show how the invention might be used to accelerate ice balls through a pipe line from a Polar to a "Desert region", as described in UK Patent No. 1,047,735.

Figure 6 shows the invention applied to maintain the speed of a high speed tube train, or coach.

Figures 7 and 8 show the invention applied to a motorway with automobiles moving at high speed on two 3-lane highways.

Figures 9 and 10, (A)—(C), show how the invention might also be applied to ships passing through, as well as trains passing over, a pontoon supported floating bridge such as, for example, could be used to bridge the English Channel between England and France, instead of a tunnel.

Figure 11 shows the invention applied to an overland, high speed, system of trains moving through transparent tubes supported well above street level from high buildings, as shown two of the magnetic coils also being supported from mountings on such buildings.

Figure 12 shows the invention applied to the high speed acceleration of bullets projected along gun barrels, to obtain a nuclear fusion reaction of deuterium and tritium contained in pellet form in the concave noses of the bullets, as described in UK Patent No. 1,337,936.

Figures 13, 14 and 15 show an alternative from of the floating Channel bridge.

There is currently being taken considerable interest in the development of high speed trains, running on special tracks with propul-

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sion by the means of linear induction motors and either air cushion or magnetic levitation to reduce tractive resistances.

5 However, whereas up to 100 mph the air resistance of a train running in a track open to the atmosphere is not very substantial, at a speed of between 200 and 300 mph it becomes quite substantial, and to maintain such high speeds with low tractive effort it appears desirable to enclose the train in a tube and suck as much air as possible out of the tube.

10 Considering, for example, as in Figure 1, a ball 1 with a hard surface 3 rolling in a tube 2 from which as much air as possible has been evacuated, according to Sir Isaac Newton, since a body continues its state of rest, or uniform velocity in a straight line, unless acted upon by an impressed force, we know that a ball 1, as in Figure 1, would maintain its high speed motion for a very long time with retardation only brought about by loss of kinetic energy due to rolling friction which must, of course, ultimately be dissipated by a slight heating of the tube in which it is rolling.

25 It is therefore obvious that only periodic impulses of force are necessary to maintain the velocity of a body, or ball, as in Figure 1, and such impulses can be produced from well spaced magnetic field coils, as in Figure 3,

35 It is well known that electric current passed through a coil of conducting wire, as in Figure 2, to form a solenoid, produces circular magnetic lines of force which will tend to move a metal body along the line of the axis of the coil. No one, except me, believes it, but according to a theory put forward, at some length, in UK Patent No. 1,311,140, I maintain that all space is permeated by a "dynamic ether sea", of tiny particles, i.e. "true atoms" or gravitons, which are quite incredibly miniscule, even in comparison to the electron, or photon, and single line streams of which go to make up what we call "magnetic or electrostatic lines of force", and that it is streams of such particles, moving at an invariable very high speed of $\sqrt{2}C$, which passing between the atoms in the metal of iron filings which pull them into lines, according to the well known patterns illustrated in any physics book.

50 It is maintained, indeed, that the origins of the forces exerted on bar magnets, have nothing whatever to do with the "lining up of electron spins", as according to the "physics books", but the stroking process by which we create a new bar magnet by stroking a bar of metal with an existing bar magnet, simply pulls the electron clouds of regularly spaced atoms in the metal from overlapping spheroids into ellipsoids, so that there are opened out through the length of the bar "electron-cloud-free-passages", through

which streams of gravitons from the surrounding "dynamic ether sea", can then stream in the well known "lines of force", these graviton streams pulling on each end whether they are passing into it, or leaving it.

70 The physics book explanation of magnetic forces being derived from "lining up of electron spins", if it does explain the attractive magnetic forces, certainly does *not* tell us what the electron spins have to do to create the "repulsive forces".

75 It is maintained that according to "Pedrick's rule", the magnetic, or electro-static, forces applied to a body can always be predicted by simply assuming that streams of gravitons are passing along each "line of force" and pull in the respective directions on the surface of any body irrespective of whether they are entering it or leaving it, and it is the aggregation of all these pulls that produces the nett pull on a bar magnet, and the so called "repulsive" forces between like Poles are illusory, and result from a greater pull at the most distant ends, and in effect physics books are lying when they say there is a "Real repulsive force" between like poles.

80 Thus it is also maintained that a nail will hang on to either end of a bar magnet since, in one case, the gravitons are streaming through the nail into the bar magnet and in the other case they are streaming out of the bar magnet into and through the nail. But in each case the nail is pulled towards the bar because, whereas the streams of gravitons pass, in a concentrated stream, between the nail and bar, or vice versa, they enter, or leave, the nail at many points along its length, at angles α° to the axis of the nail and there is, therefore, a nett pull towards the bar magnet because the pulls of streams leaving the side of the nail have a component only equivalent to the cosine of the angle α° at which they leave or enter the side of the nail.

85 It is maintained that if there is some way in which all the gravitons passing into, or out of, the nail, could be made to do it at its free end, which there isn't, it would fall off or not be attracted to the bar magnet because the pulls at each end would then cancel out.

90 Considering once more then the well known effects of the magnetic field produced by current passed through a coil, as in Figure 2, it does not matter in which direction the current flows a metal bar, or rod, will be pulled into the space within the coil either from the right or left.

95 My theory assumes that this is the accumulated effect of billions of tiny "true atoms" or graviton particles whizzing round each circular line of force at $\sqrt{2} \times C$ the speed of light.

100 However, for the direction of current flow, 130

in which as shown in the Figure 2, the gravitons "whizz" round the lines of force in an anti-clockwise direction, as might be expected, a rod of metal is pulled into the coil more rapidly from left to right than right to left, because in this movement from left to right the momentum of the gravitons acts with their gravitational drag upon the atoms of the rod of metal, whereas from right to left the momentum and drag of the gravitons are in opposition.

What, therefore, we have to do to keep a metal object in movement through the coil, is to arrange for the gravitons to move round the lines of force in the same sense of direction that we wish to move the rod, but we must break the current flow before, or at the moment at which the mass centre of the rod is fully central with the coil, so that all the magnetic field is at once destroyed, and the rod moves on to the right, as shown, under its own momentum, without any retarding effect from the magnetic field and the invention essentially depends upon the application of this principle.

Thus, as in Figure 3, it is clear that a ball rolling along a tube with a high degree of vacuum therein, can have its velocity maintained, or increased, by making it, as it approaches a part of the tube around which is a solenoid coil 5, interrupt a ray of light between a source of light 6 and a photo-receptive cell 7, to operate some form of control circuit which will put a pulse of current from a source of EMF but interrupt the current before the ball has passed the centre of the solenoid through the solenoid 5.

In such a manner the high velocity of a ball, or body, or train, moving within a tube against very low air resistance can be maintained, with only periodic pulses of force from a magnetic field, as compared with the continuous tracks of bars of linear induction motors as might be necessary if the train is running against normal air resistance as, for example, with the so called "Tracked Hovercraft Trains".

Clearly the arrangement, as in Figure 3, will be effective upon a ball of non-magnetic material, such as ice, if such a ball is, in some manner, given, by spraying or rolling it, through a bath, a surface of some metal, preferably steel or iron for economy, a surface which will be influenced by the effect of a magnetic field.

In Figures 4 and 5, therefore, the form of magnetic acceleration of bodies according to the invention is shown applied to the somewhat "fantastic" concept, described in UK Patent No. 1,047,735, of passing ice balls compacted from snow in a Polar region, through pipe lines to a "Desert area", at which such "unsalted frozen water" can be melted in the rays of the sub-tropical sun

and the water so obtained used to irrigate the region.

According to the calculations set out in UK Patent No. 1,047,735 in considering the implementations of such a pipe line between Antarctica and the "Dead Heart" of Australia, which is obviously the largest "Desert area" which could be irrigated in such manner, the run down from the Antarctic plateau under gravity followed by the acceleration of the ice balls in the pipe line due to the Spin of the Earth, could result in the ice balls crossing the coast of Southern Australia at around 1000 miles per hour.

Obviously, however, if the speed of balls through the line could be further increased less pipe lines would be necessary and the project made less expensive to implement and, in accordance with the invention, it is proposed that the ice balls be given a coating of steel in some way so that they may be accelerated, as in Figure 3, by making their passage along a submarine pipe line interrupt a light ray to bring into operation a control circuit which will put a strong pulse of electric current, through a coil encircling the pipe line and thus create a temporary magnetic field, which will have the effect of increasing the velocity of the ice balls along the pipe line.

As shown in Figures 4 and 5, the electric power for creating the current pulses through the coils could be obtained from generators on floating platforms on the sea surface driven by windmills subject to the strong gales of the "roaring forties", such generators also acting to drive the air pumps for producing a high vacuum in the pipe line as described in UK Patent No. 1,047,735.

If there are a substantial number of such coils encircling the tube, or pipe line, along which the balls will run, with each pulse of current producing a corresponding magnetic field accelerating the balls, with only the rolling friction energy losses, there is no reason why such balls should not attain very great speeds, for example, of many thousands of miles per hour, or even per minute.

It would, of course, need a large input of electrical energy to make the balls approach the speed of light, but, according to Relativity Theory, if such was possible, the balls would start off as spheres, and tend to flatten into discs as they approached the speed of light, at the central part of the pipe line, the balls swelling out into spheres again as they were slowed up, in some way, as they reached the end of the pipe line.

Although there have been dire warnings of an impending famine, as the World population increases so that to quote an expression "Every time a man's heart beats there are two more mouths to feed", nothing is being done to implement any sort of project

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- such as described in UK Patent No. 1,047,735, and it is too late now for it to be put into effect except by some sort of "Crash programme" carried through by the joint efforts of the USA and USSR governments, which would then have to engage in a "Cold War" against Antarctica, in place of their "political Cold War"—and nothing is likely to be done, while both Nations are made, by their governments, to incur the colossal expenditure associated with the maintenance of large batteries of nuclear war headed Intercontinental Ballistic rockets.
- It was with the object of reducing greatly the, so called, "Defense expenditure", that there has been proposed in another Patent, an Earth orbital missile system using Antimatter nuclear bombs of over 1000 Mega-ton T.N.T. equivalent explosive potential, which, if they passed through a zone in above the Earth, having a radiant energy level indicating that an attack by nuclear headed rockets had taken place, such missiles carrying the 1000 Mega-ton charges would be automatically pre-programmed to re-enter the Earth's air layer to fall upon the Capital City of any Nation that could possibly have initiated the nuclear rocket attack.
- By such a form of "Automatic Response Nuclear Defense System" or "A.R.N.D.S. System", there could be built up a "trust" between industrially powerful nations, which would make it no longer necessary for them to maintain their batteries of ICCM rockets, since any nation initiating a nuclear attack would be certain to annihilate itself. In this way it might be possible, for example, for the USA and USSR governments to implement the proposals in UK Patent No. 1,047,735, and, the worst effects of the impending World famine, which are already becoming evident in the rise in World Wheat prices, might be avoided.
- Other UK Patents concerned with the high speed projection of "ice balls" are numbers 1,047,736, 1,096,897, 120,313, 117,417, 1,204,648, 1,287,207 and 1,331,862.
- Other UK Patents concerned with an automated system of World food distribution using surface, submarine, and air cargo, trains are as described in UK Patents Nos. 1,022,374, 1,032,689, 1,067,703 and 1,080,189.
- "Floating Farms" are described in UK Patents Nos. 1,031,309, 1,038,320, 1,042,541 and 1,053,508.
- There are also described in UK Patents Nos. 1,325,996, 1,332,202 and 1,333,343, combined desalination and electricity generating plant using steam turbines in the form of large Pelton wheel type concrete flywheels, which can be constructed without skilled engineering techniques.
- In UK Patent No. 1,332,079, there was originally described a form of submarine pipe line which could be stretched from the mouth of the Amazon, across the South Atlantic to convey fresh water to reservoirs excavated in the Atlas Mountains for gravity feed irrigation of the Western Sahara, the power for operating the pipe line, in the form of a tubular electromagnetic pump, being drawn from USA and UK nuclear submarines tethered on one side, and USSR and French nuclear submarines tethered on the other side, thus making such vessels perform a useful service to "humanity".
- It will thus be understood that I have devoted considerable time and thought and the expense of patent fees, suggesting schemes that would make "technology" serve, not dominate, "man-kind" but such schemes remain "paper dreams" as they cannot be financed on my Post Office Savings Bank account and the "World Bank" do not seem to be interested.
- But my Ginger Cat has just come in and I shall have to go and open another tin of cat food, which continues to rise in price, so how can I afford to get my "Ice Balls" rolling into the "Deserts".
- But, of course, if my scheme, to be here described, for a "Floating Channel Bridge" would save £400 million on the "Chunnel", I should have quite a bit of money to "play with".
- In Figure 6 the invention is shown applied to a high speed vehicle within a tube 12 with a high degree of vacuum in it.
- In exactly the same way as for the "ice balls", the vehicle 10 by interrupting the light ray from a source of light 6 to a photocell 7 causes a powerful pulse of current from a source of EMF 4 to flow through a coil 5 which will produce a short lived, high power, magnetic field which will apply a force to accelerate the vehicle 10 along the tube.
- As shown, the vehicle 10 runs on low friction small wheels or rollers 13 but the invention might similarly be applied to such vehicles having air cushion or magnetic levitation.
- In Figures 7 and 8, the invention is shown applied to automobile vehicles moving at high speed in each direction up on two 3-lane motorway tracks. A series of such accelerating magnetic coils arranged along a motorway could be used to cause a series of vehicles, with their engines disconnected from their driving wheels, to maintain a steady common speed; thus avoiding the collisions which can occur when each vehicle is being driven by its own engine.
- Current might be supplied (on actuation of pressure switches 14" in the roadway) to the toroidal coils 15, 15', 15'', from a source of EMF 14 or, alternately, when it was required to brake the vehicles, the magnetic field could

be reversed and continuously applied in some manner.

Figures 9 and 10 show the invention applied to the transport of tube trains over, and ships under, a form of pontoon supported "floating bridge" across a river or channel, which must be such that there is no obstruction to the free movement of shipping.

In considering the problem of providing a means of transportation across a wide river or channel, such as the English Channel between Dover and Calais, there are at least 4 possible methods of transportation.

1. A tube or tunnel well below the sea or river bed.

2. A tube laid along the sea, or river bed.

3. A tube supported by floats from the sea, or river, surface as for the ice ball tube in U.K. Patent No. 1,047,735 at a depth below that required by shipping; and

4. A massive bridge supported by legs from the river or sea bed.

In consideration of the transportation systems proposed across the English Channel, it is admitted that there are no "technical impossibilities" for the construction of a sea bed supported bridge, but the cost of such a structure is estimated at over £2000 million.

Currently it is proposed therefore to cut a "Chunnel tube" well below the sea bed at a cost estimated at between £8 and £9 hundred million. However, for this project, it will be necessary to load, and unload, automobiles onto and off, specially designed trains, which will involve delays for motorists at each end.

Objections can also be raised against a "Chunnel" in that it will be unpleasant for persons who suffer from claustrophobia, and it is not beyond the possibility that political saboteurs might plant bombs at each end as a "blackmailing procedure" to obtain the meeting of their political, or criminal, demands upon "authority".

There is, however, a further manner of bridging a river or channel, as below:

5. A floating bridge above the sea or river surface, supported on large pontoons, as used by armies for transporting tanks across rivers, and the basic principle of which was used in the Mulberry Harbour construction for the Second Front in Normandy during the 1939-45 war. It is of some interest that this structure, if not actually "invented" by the late Sir Winston Churchill, was given his support in a typical minute on his papers: "Don't argue about the difficulties—the difficulties will argue for themselves!"

Thus, such a bridge, in transverse cross section, might be as in Figure 9 with a platform supporting 3-lane motorways at each side and central tube railways, according to the invention, at the centre. The deck level of such a structure might be about 150 ft. above the sea level supported from the hulls

of large ships which had become uneconomic, or specially designed pontoons.

In vertical elevation, across the channel or river, it might be as in Figure 10(A), an unobstructed passage for shipping being provided through 4, or more very large, buoyant, octagonal, tubular "tunnels", 23, 24 and 26, 27, the internal bore height of which must be at least in excess of the mast height of the largest ships that have to go through. "Shipping tubes" are shown in greater detail in Figure 10(C) with the two tubes 24 and 26 linked by an intermediate bracing 25. These octagonal tubes could have accelerating magnetic coils, according to the invention, which would give pulses of magnetic field speeding up the movement of steel hulled ships through the bridge structure.

Figure 10(B) shows the appearance of such a floating or pontoon bridge structure in plan view across a river or channel, with 3-lane roadways at each side and a central set of railway lines, preferably tube trains, according to the invention, there being completely uninterrupted movement of road and rail or tube vehicles onto, across, and off the bridge.

The location of the shipping tunnels, or tubes, 23-27, would, of course, be specifically suited to the disposition of the actual shipping tracks between sand banks, etc, and the whole structure has to be massively braced to withstand the worst possible sea storms, a violent gale, soon after the D day landings in the 1939-45 war, having destroyed one of the Mulberry harbour structures.

The pontoons, or transverse buoyant structures, could be strongly moored to the sea bed fore and aft.

Elaborately illuminated buoys could provide shipping with guidance by night or by radar in fog, along channels leading to the 4, or more, large "shipping tubes" 23, 24 and 26, 27.

It is confidently predicted that such a "floating bridge structure" could give much superior rail and road vehicle free flow transportation facilities at a cost less than the £800-£900 million estimated for the proposed Channel tunnel or "Chunnel".

Figure 11 shows the invention applied to a "vacuum tube train system" as described in UK Patent No. 1,338,121, in which trains may be carried in transparent plastic, or glass, tubes, suspended at some height above ground level in cities having large high buildings.

As shown in Figure 11, two accelerating field coils 35 may also be suspended round the tube from mountings on the buildings.

Figures 12(A) and (B) show the invention applied to a controlled thermo-nuclear fusion plant. As described in UK Patent No. 1,337,936, it is confidently predicted that the 40-50 million deg. C required for initiating a fusion reaction between deuterium and tritium, can be obtained by imploding upon the

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centre 40 of a pressure shell, 3 or an odd number of bullets 39 by simultaneous detonation of TNT charges at 37 at the ends of gun barrels 43. Just before the bullets 5
5 implode at the centre 40, very powerful pulses of radiant energy are injected into the space between the bullets by high power lasers 42. Thus when the bullets implode as at Figure 12(B), they enclose a very small space with
10 a very high temperature, which it is confidently predicted will initiate a nuclear fusion reaction, if the bullets have concave noses with deuterium and tritium, in pellet form, embedded therein.

15 As shown in Figure 12(A) a further speeding up of the bullets 39, also moving along barrels 43, is provided by providing accelerating magnetic coils, according to the invention, there being 3 at 45 as shown, on each barrel
20 43, the bullets bridging contacts 44 in their movement to energise the coils 45 through control units 46 fed from sources of EMF 47.

25 Figures 13, 14 and 15 show another possible form of floating bridge across a wide river or channel.

In this construction, instead of buoyancy being provided by large numbers of large ship hulls, or pontoons, the top structure with two
30 3-lane motorways and 2-track railways in each direction is given buoyant support by the water displacement of 4 large tubes which run along the base of the structure.

35 These 4 large tubes are used to give road and rail tracks in each direction, but would be used only for freight or inanimate loads, for which it would not be important that they should be open to the atmosphere or air above the sea surface.

40 At the location of the four large shipping tunnels, the 4 large submerged buoyancy tubes run under the shipping tunnels, whereas the roadways and passenger railway tracks run over the shipping tunnels.

45 The 4 large submerged tubes support the surface structure through trusses which have, at each end, plate like members B which act as breakwaters against stormy seas in much the same manner as groynes on a sea shore.

50 There may be cycle tracks outboard of each 3-lane motorway and above the central rail tracks a covered walkway for pedestrians and above this rotating lights giving navigational or positional guidance to shipping.

WHAT I CLAIM IS:—

1. An arrangement in which a body, ball, 55
or vehicle, is accelerated, or maintained in motion, along a guidance track passing through a plurality of electro-magnet coils of annular form the length of such body, ball, or vehicle being substantially less than the
60 distance between two adjacent coils, wherein there are applied to the body, ball, or vehicle, as it passes through successive coils, a series of electromagnetically produced pulses of force by arranging, by the use of some form
65 of automatic switch operated by the body, ball or vehicle, for each coil to be energised as the body, ball or vehicle approaches it, but the control being such that each coil is de-energised, at, or before, there is attained maximum magnetic flux linkage between the
70 coil and the body, ball or vehicle, so that the latter is accelerated into the coil, but leaves it subject to a much reduced flux linkage.

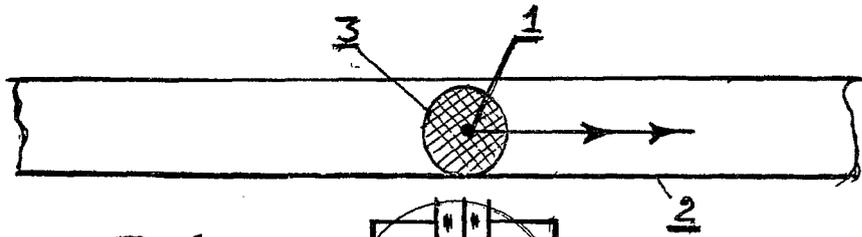
2. An arrangement, as in Claim 1, wherein
75 the ball has a core of highly compacted snow, or ice, given a surface which is subject to the influence of a magnetic field, by coating it, or spraying it, in some manner with a suitable metal. 80

3. An arrangement, as in Claim 1, wherein
85 the guidance track is in the form of a tube, such tube acting as a means of transporting people at high speed in trains subject to very low tractive resistance, supported by magnetic levitation, or some form of air film or cushion.

4. An arrangement, as in Claim 1, wherein
90 the coils are of considerable size, and the magnetic field flux from them is used to accelerate through them ships or buoyant vessels, at least the lower halves of the coils being contained within large annular, or octagonal, hollow structures below the level of
95 the surface of the water in which the ships or vessels are buoyant, the upper part of the annular or octagonal structure, at a height above the top of the mast tops of such ships or vessels, being used as part of a bridge structure conveying vehicles over the ships
100 or vessels.

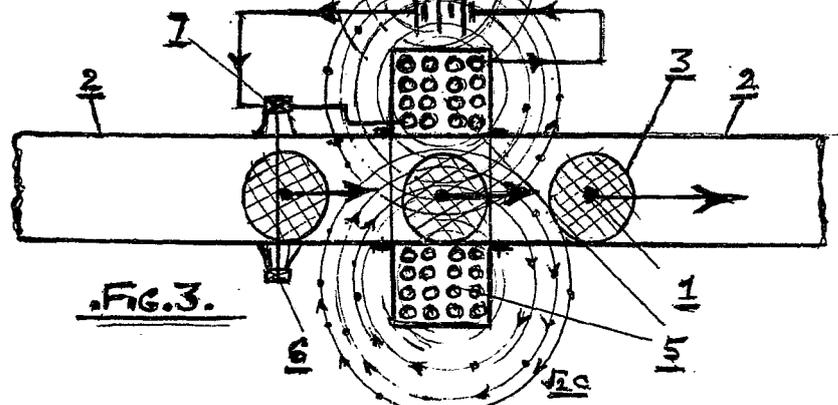
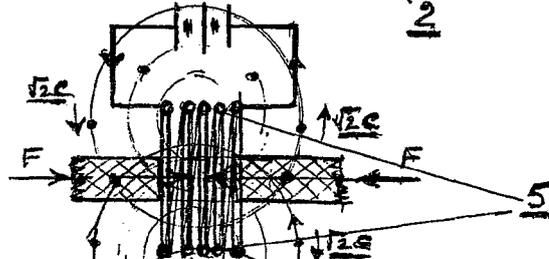
5. An arrangement, as in Claim 1, substantially as described with reference to
Figures 1—15 of the accompanying drawings.

A. P. PEDRICK.

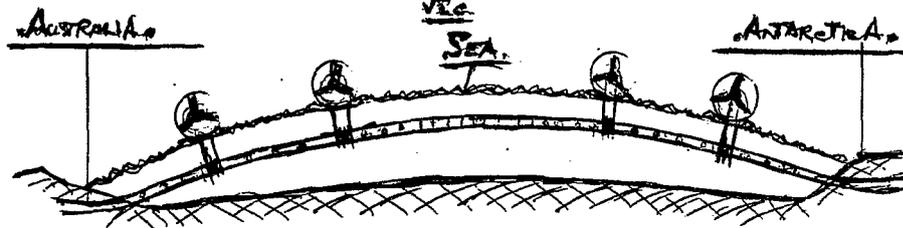


.FIG. 1.

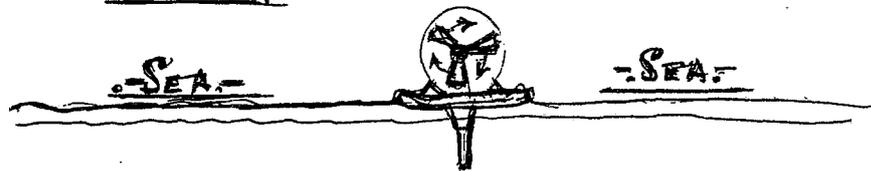
.FIG. 2.



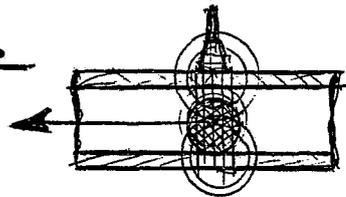
.FIG. 3.



.FIG. 4.



.FIG. 5.



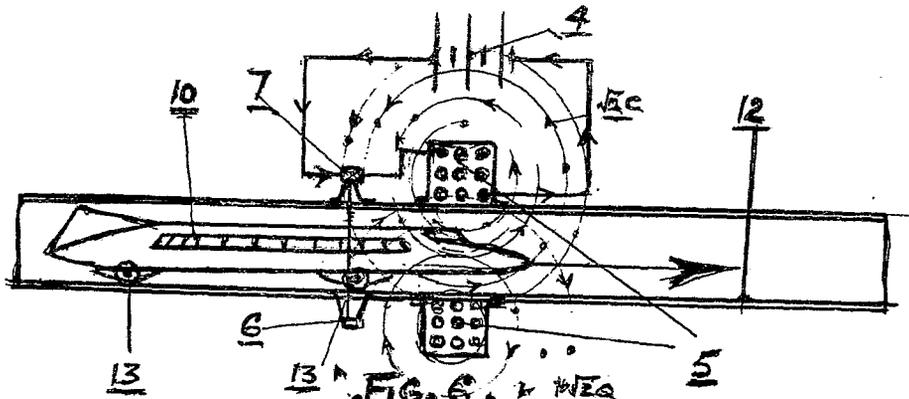


FIG. 6.

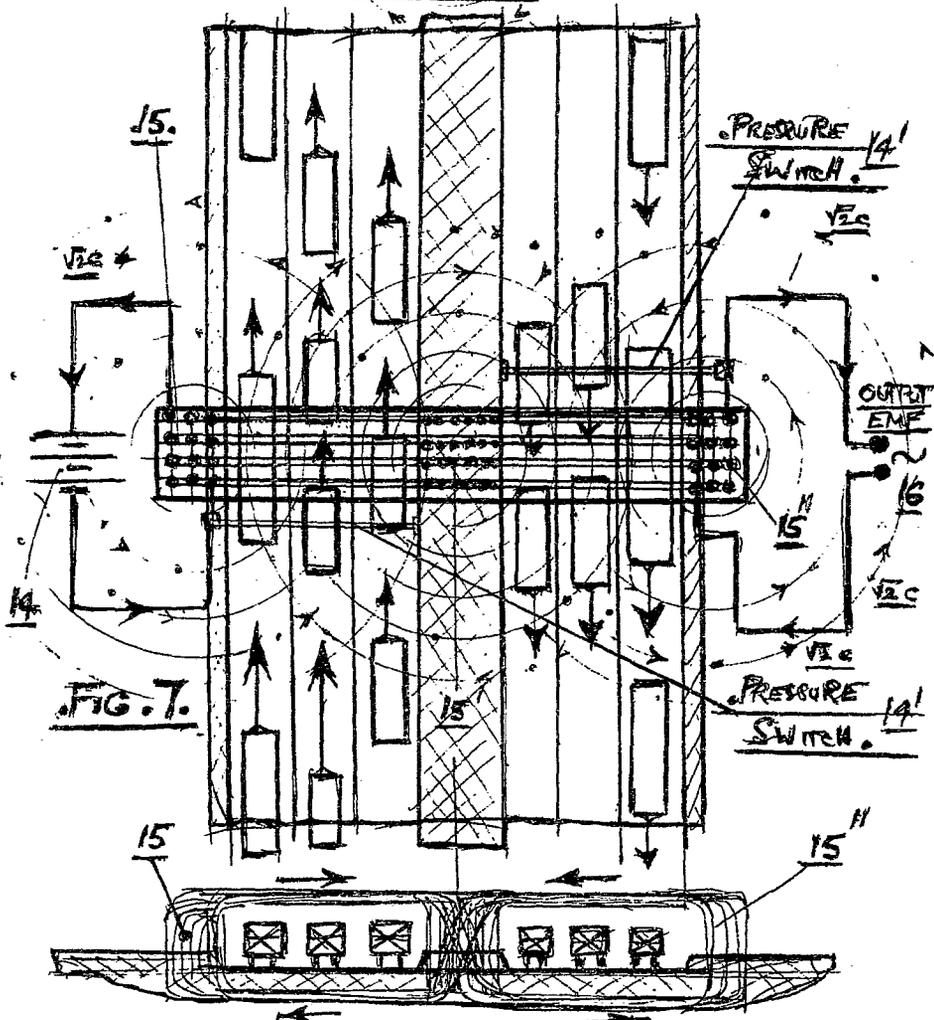


FIG. 7.

FIG. 8.

CURRENT FLOW.

CURRENT FLOW.

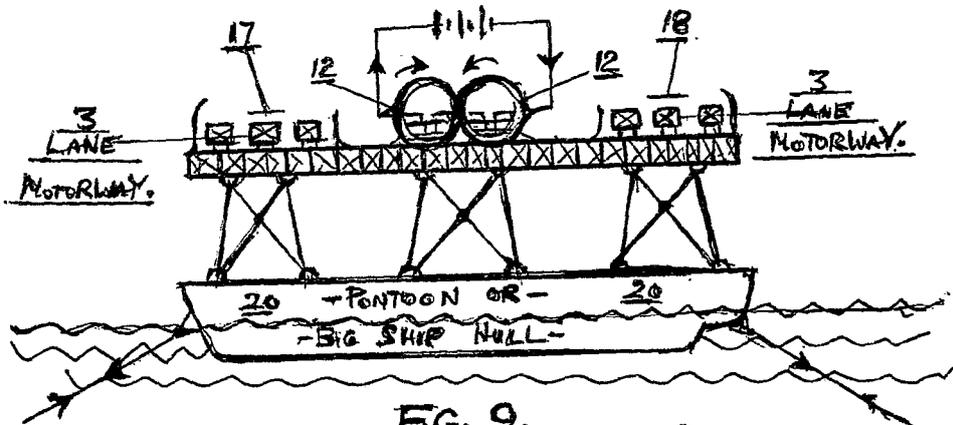


FIG. 9.

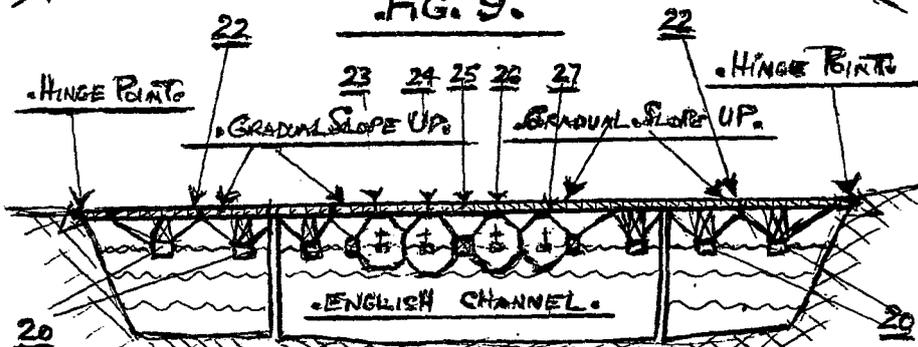


FIG. 10(A).

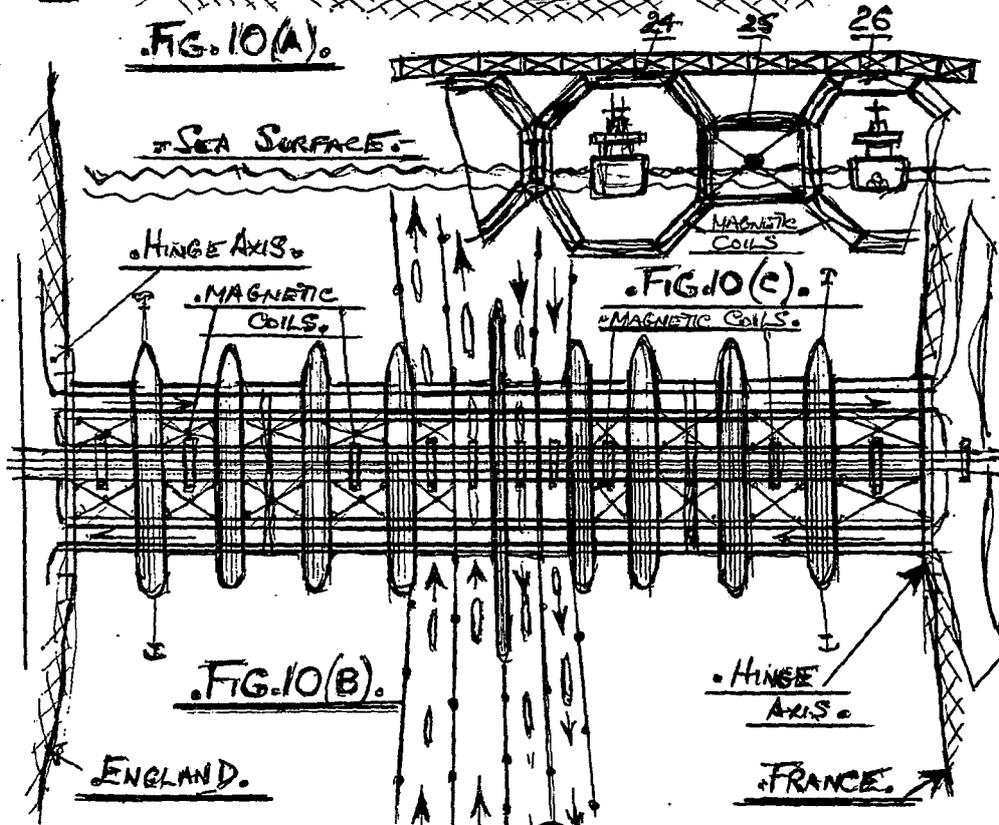


FIG. 10(B).

FIG. 10(C).

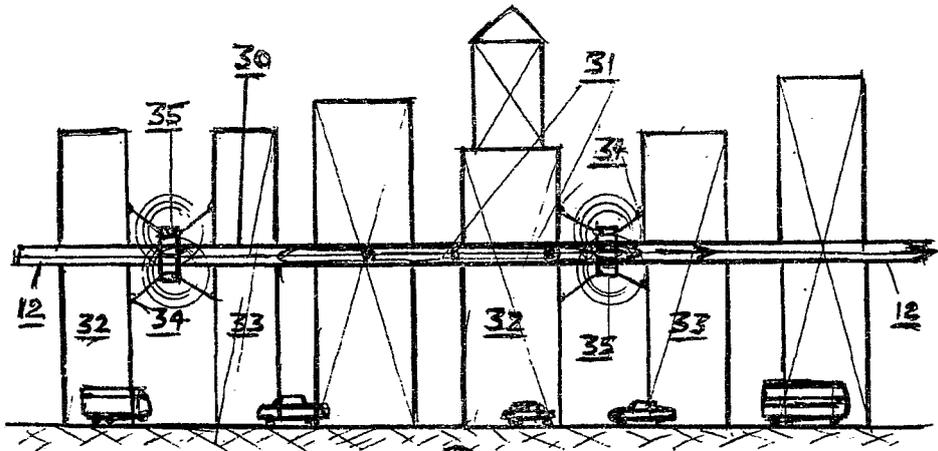


FIG. 11.

