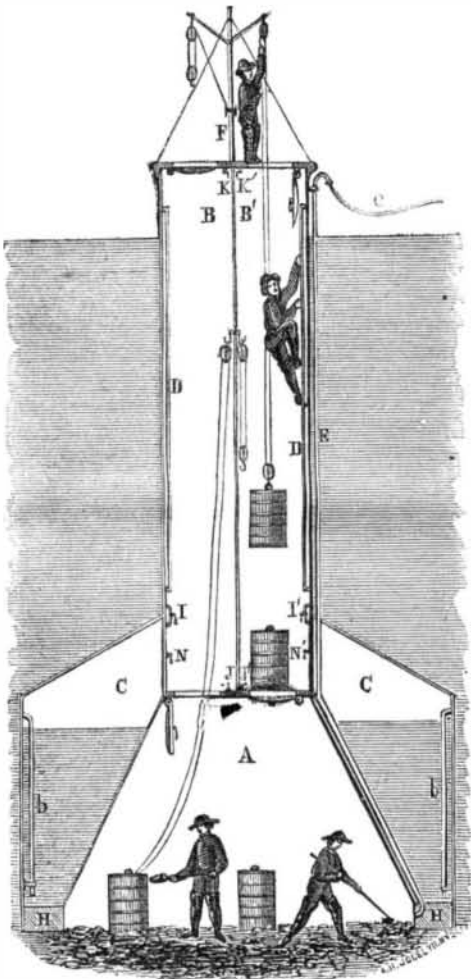


MAILLEFERT'S AEROSTATIC TUBULAR DIVING-BELL.

We here present an illustration of a diving-bell which has been patented in this country, as well as in England, France, &c. The inventor proposes, in addition to the purposes for which it has already been successfully tried, to use it in gathering oysters. He says that the present methods of raking and dragging are very objectionable, bringing up a very small portion of the oysters, actually lying on the banks, and destroying probably more than they bring up. He also proposes to use it for working on the bottoms of rivers, for collecting auriferous deposits in California and elsewhere. A diving-bell is a simple affair, and the peculiarities of this can be easily understood by reference to the cut.

A, is the working chamber, 19 feet diameter at the bottom. The tunnel is divided lengthwise in two compartments, B and B'. C C, is the air chamber; by filling this with air through the cock, N or N', the bell is raised; by letting out air through the cock, I or I', it fills with water through pipes, b b, and the bell sinks. When the upper man-hole of the compartment, B, (to the left) is closed, the man-hole below can be left open, and the barrels containing the oysters be carried up and

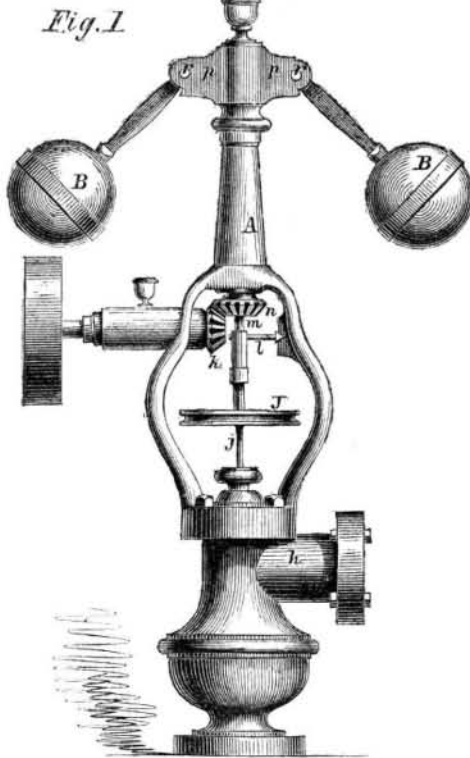


disposed of as shown on the sketch; and at the same time the compartment, B, (to the right) can be emptied through the upper man-hole, its lower man hole being closed as shown on the sketch, and *vice versa*. E, is the pipe connecting the working chamber with the air pump through the hose e, the pump forcing the air into the bell and expelling the water. H H, is cast iron ballast. J J', are the cocks connecting the working chambers with the compartments, B and B', of the funnel. N and N', are the cocks to connect the tubes with the air-chamber for filling the latter with air and raising the bell. The raising of the bell will be instantly stopped by turning the cock, N or N', which had been opened for bringing about the motion; the weight of the portion of the funnel which is raised out of water counteracting any tendency to continue the motion upward, the moment the cause by which it was produced is removed, and *vice versa*, the buoyancy of the funnel when it is being immersed will stop the sinking, the moment either cock, I or I', is shut.

When leaving the bell to stop work, it is allowed to fill with water by opening the cocks, I I', and the hose, e, is unscrewed; when resuming work the hose is attached again, and 20 minutes after, the whole bell will be filled with air and ready for work. F, is a derrick for hoisting the barrels; b b, are tubes for letting water in or out of the air-chamber, C C.

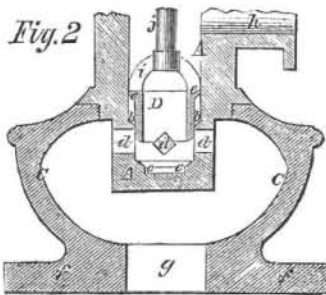
The American patent for this bell was obtained through the Scientific American Patent Agency, March 30, 1858, by B. Maillefert, who will be pleased to respond to all inquiries in relation to it, which may be addressed to him at 108 Wall-street, this city.

TRAVIS' STEAM GOVERNOR.



we have long anticipated an immense growth of manufacturing in the State of Illinois. This State, while it has a larger proportion of arable land than any other in the Union, contains the largest coal field which is known in the world. With these unequalled resources, Illinois is destined, under the influence of republican institutions and free schools, to experience a development of agricultural and manufacturing industry unparalleled in the history of our race. Already a number of inventions of the very highest utility have come from the active minds of her farmers and mechanics; and we hail every new one as a fulfillment of our prophecy, and as an evidence of the growing intelligence of our people.

The engravings which we here present illustrate a governor for steam-engines, which comes to us from Illinois. Fig. 1 is a perspective view of the whole, and Fig. 2 a vertical section of the lower portion, showing the arrangement of the valves. The steam enters from the boiler by the pipe, h, and passes into the steam-chest through the opening, g. A is a hollow cylinder, with four openings into it, placed at equal distances from each other, with their angles horizontal and vertical, as shown. At the bottom of this cylinder, and on a flanch above the openings, are fitted the seats, c c and d d, for the short cylinder or valve, D. The valve, D, is hollow, being supported by the bridge, s, and the steam en-



ters its top and passes out of its bottom. The higher the valve, D, is raised, the larger is the portion of the holes, b b b, which is opened. The rod, j, passes up through a stuffing-box into the hollow cylinder, k (Fig. 1), with which it is connected by a screw in such way that it may be raised or lowered by turning the wheel, J; the hollow cylinder being prevented from turning by means of the pin, l. The bevel gear, n, is fastened upon the lower end of a hollow cylinder which passes up through the inside of the column, E, and has two wings, v p, attached to its upper end, so that its rotations carry around the balls, B B. The spindle, m, extends upward through the hollow cylinder which carries the balls, and

has a groove turned around it near its upper end, in which groove play the inner ends of the arms of the balls. these arms working on the fulcrums, r r, at which points they are bent downward. From this arrangement, it will be seen that, as the balls expand, the rod, m, is pushed downward, carrying down the rod, j, and partly closing the valve; while a depression of the balls lifts the rods, m and j, and opens the valve more widely. By turning the wheel, J, the rod, j, is screwed a greater or less distance into the hollow cylinder, k, and thus the valve may be either entirely closed or adjusted to any opening requisite for the desired velocity.

The patent for this invention was granted to Nathan C. Travis, of Alton, Ill., Oct. 11, 1859. Persons desiring further information in relation to it may address the inventor at Alton. Johnson & Emerson, of the same place, have rights for sale for the New England and middle States.

IMPROVED CAP AND LANTERN.

The annexed cut represents a combination of cap and lantern adapted to the use of conductors, miners, brakemen and persons in many other occupations, who require a lantern, and, at the same time, the unobstructed use of both their hands.

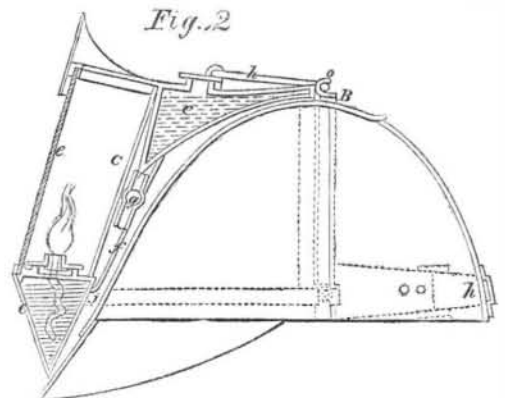
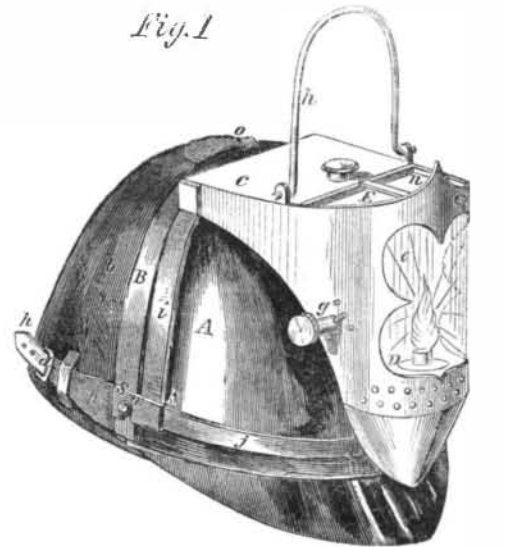


Fig. 4 is a perspective view, and Fig. 2 represents a vertical section. A is the cap, the front part, a, being made of leather or similar substance, and the back part, b, of rubber cloth or other elastic material, which may be adjusted to heads of different sizes by means of the straps, h h, and buckle, d. The lantern is made of metal, with a transparent mica plate, a, in front of the lamp, and a bright reflector, C, behind it. In the upper and back portion of the cap, a reservoir of oil, c, is provided, from which to the lamp a pipe, f, leads; the flow of the oil being regulated by means of the stop-cock, g. The arrangements for attaching the lantern to the cap are as follows: the metal band, B, which is fastened to the cap, has the hook, c, in its middle at the top, and two studs, one of which, s, is shown at its ends at the bottom. The lantern is provided with the metal straps, s and j, with notches near their junction, which fit upon the pins, s, and with the bail or handle, d, which hooks into the hook, c, and by these means the lantern is attached to the cap.

J. C. Cary, of 81 Nassau-street, this city, is the inventor of this cap and lantern, and he will be pleased to answer all questions which may be addressed to him on the subject. His patent was issued (through the agency of this office) Sept. 14, 1858.