

Scientific American.

NEW YORK, MARCH 24, 1855.

Who is the Inventor of Combined Stame and Steam in Engines.

Paul R. Hodge, Engineer, in a communication to the London *Mining Journal* of February 10th, claims to be the first inventor of combined stame and steam in engines, for which the Messrs. Wethered, of Baltimore, have obtained a patent—illustrated on page 45, this volume SCIENTIFIC AMERICAN. He asserts that he obtained a patent in England for this combination, three years before the patent was issued to Messrs. Wethered. He constructed such an engine for the Great Exhibition in 1851, which is now in operation at Leicester. A patent it seems has recently been taken out in England, on the basis of Messrs. Wethered being the original inventors; but Paul R. Hodge denies that any person has power to use it, or grant licences but himself. His plan, he says, is to take steam from a drum on the boiler, through a pipe, bringing it down and around the furnace four times, and carrying it through one of the tubes of the boiler, from thence into a wrought iron jacket around the cylinder, and then into the steam chest, where it is mixed with ordinary steam, conveyed by another pipe from the boiler down in front of the fire box.

It appears to us that Mr. Paul Rapsey Hodge claims more than he is entitled to, in his letter to the *Mining Journal*. Whatever may be the merits or demerits of using combined stame and steam, or the credit which the inventor of its use should receive, is not the question with us at present, but, "who was the original inventor?" We believe it was not Paul R. Hodge. He obtained a patent in England on the 3rd of July, 1850, the one which he claims embraces the principle covered in the American and foreign patents of Messrs. Wethered, but we cannot, by reading a copy of that patent of Mr. Hodge, get a clear idea that the use of common and surcharged steam (stame) combined, formed any part of his improvements. His object appears to be the use of surcharged steam in a jacket, as he states in his letter; the common steam which he states to have mixed with the surcharged steam, was not common, but surcharged steam also, for, instead of conducting it directly from the boiler to the cylinder, to mix it with the stame, the steam pipe made several circumvolutions in the smoke box, for the purpose, as stated in the published abstract of his patent, "to be further charged with heat (in plain language, made into stame) before entering the cylinder." We consider that Mr. Paul R. Hodge is not entitled to any credit for his method of using steam; he merely adopted a modification of Mr. Frost's plan, in the use of stame, which was published in the SCIENTIFIC AMERICAN as long ago as 1849.

British Patent Office—Formalism.

"After having paid £60 sterling to secure my patent for explosive appliances. The Lord High Chancellor of England refuses to sign it, on the grounds that it was one day too late. This delay of one day was caused by the final specification being detained in Dublin, on Sunday, the 2nd of April, no mail leaving Dublin on that day for Cork. The letter of Mr. William Johnson, my patent agent, was dated the 31st March, and the Glasgow post-mark was the same date; I therefore received his letter only on the 3rd April. All this was set forth in my petition, yet the Chancellor refused to sign the patent. I ask, could such a thing as this be enacted in America?" J. NORTON."

[The above is a clause in a letter to us from Capt. Norton, an old Peninsular officer, who has devoted a great part of his life, with much success, to improvements in fire arms and various kinds of explosive appliances. It shows how much thick-skulled nonsense there is in the British system, from beginning to end. Such an evil could not be enacted in America, or if committed, relief would soon come in some way, when the public was made to understand the justice of the applicant's

demands. Capt. Norton made a number of very useful inventions in shot and shells, and recommended them to the attention of the head men in the British army more than ten years ago, but they were passed over unheeded, and now when danger threatens them in the Crimea, they are beginning to rub their eyes and inquire about their utility. In 1826 he gave one of his rifle percussion shells for cannons to Col. R. Egerton to show Lord Fitzroy Somerset (now Lord Raglan,) when that personage replied, "All inventions in the improvement of arms tend to place the weak on a level with the strong; we are the strong, and therefore do not encourage improvements."

No better evidence could be afforded of the incapacity of Lord Raglan, to conduct the war in the Crimea, than the above piece of mud-headed enterprise. He has found out by this time who are the strong. The man who despises inventions and improvements is sure to run himself out very quickly in the present age: Lord Raglan himself is an evidence of this. He was a despiser of improvements, thus showing that he had no mental grasp, nor the quality of mind to plan, or else he would always have been a friend to inventors and an advocate of improvements. The consequence is, England has lost a fine army, and Lord Raglan, who at one time (untried) possessed quite a respectable military reputation, has not a rag of it left,—he has stripped himself of every stitch of military character.

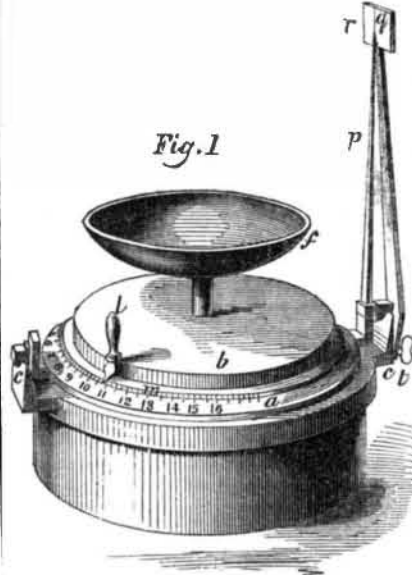
The Gulf Stream.

It is believed by many that the waters of the Gulf Stream are nothing more or less than the waters of the river Amazon. This great father of waters is bedded more than 1,000 miles immediately under the equator, and all its tributary streams, for many thousand miles, are constantly pouring their hot water into this mighty reservoir of water. As these waters are gathered under the burning sun of the equator, they are extremely warm; far more so than the waters of the Atlantic under the equator. The great body of heated water shoots out into the Atlantic more than a hundred miles, in the face of the eternal trade winds.

The Amazon is sixty miles wide; after being bedded in its irresistible course, it curves off to the left, and scuds off before the strong trade winds till out of their reach. Driven along with great force, it takes its course round the great bay formed between the two continents of North and South America.—Dashing along the northern coast of South America, and passing to the leeward of the West India Islands, it leaves the shore of Cuba and proceeds along the shores of Florida, the capes of Virginia, and the south coast of North America, and passing along the shores of Newfoundland, ends its mission among the icebergs which float out of the northern ocean. Cut off the Gulf Stream, and it would not be many years before the North Atlantic would be filled with icebergs, and the port of New York would cease to be the center of American commerce. Before the course of the Gulf Stream was known, ships from Europe to New York, in winter, used to sail first to Charleston, S. C., then coast it down to the Hudson. The voyage used to occupy them from six to eight months. The Nantucket fishermen were the first to discover the course of the Gulf Stream, and while English captains were taking six months to reach New York, they used to make the run sometimes in one month. Vessels running north of this stream in winter get their sails and rigging frozen so that it is scarcely possible to make any headway. By running into the Stream they thaw out, for the water is always warm, and is known by this, and its intense deep blue color. It is provided as a reservoir of heat by the Great Governor of Worlds, to accomplish his grand purposes. It is the influence of this Stream which renders the climate of Britain so genial. Were it diverted to break upon the coasts of Spain only, the Island of Britain would soon become a bleak, cold, and inhospitable region, with a climate as cold and a winter as long as Labrador; and Erin would cease to be named the Emerald Isle,

for her fields would be covered with snow during eight months in the year, instead of green herbage. It appears from geological evidences, that the Gulf Stream, at one period, did not break upon the shores of Britain, and it was then as cold as Iceland. Upon such harmonies of nature's operations, directed by an All-Wise Creator, do men and nations depend.

Improved Weighing Scales.

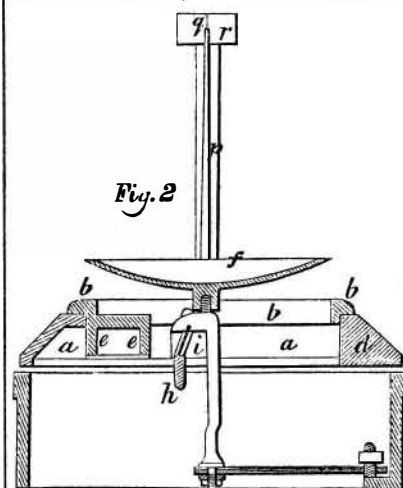


The annexed figures represent an improvement in weighing scales, for which a patent was granted to John L. McPherson, of New Vienna, Clinton Co., Ohio, on the 16th of January last.

Figure 1 is a perspective, and figure 2 is a central vertical section view perpendicular to the axis of suspension. Similar letters refer to like parts.

The invention consists in constructing the scale of two concentric circular rims, the exterior supported by knife edges, and the inner rim movable. The dish resting on a bar running across the outer rim on one side of its axis, of suspension, the balance being produced when weighing, by so moving the inner rim that a weight attached to it shall approach a weight fastened to the outer rim on the opposite side of the axis of suspension, a pointer attached to the movable rim indicating on a graduated arc of the outer rim the weight upon the disk.

In the figures *a* and *b* are the rims, supported on the knife edges, *c*, and so loaded by weights, *d* and *e*, as to be accurately balanced when the weights are on opposite sides of the axis of suspension. The dish, *f*, is supported on a knife edge, *i*, of a bar, *h*, running across the outer rim, *a*, on the side of the axis of suspension nearest the weight, *e*. Any substance placed upon the dish will, it is evident, add to the weight on that side of the axis of suspension, and for the restoration of the equilibrium, render it necessary to move the weight, *e*, towards the weight *d*. To do this the rim, *b*, is moved within the



rim, *u*, by means of the knob, *l*, until the pointer, *p*, rests on the mark, *g*, of the indicator, *r*; the scale will then be again balanced on the knife edges, *c*, and the weight of the article in the dish indicated by the division of the graduated arc, *m*, upon which the pointer, *u*, rests. Should the scale rest on a surface having a slight inclination, the indicator, *r*, can be so adjusted that the point-

er, *p*, will rest on the mark, *g*, when the empty scale is balanced, by loosening the screw, *t*, and moving the indicator laterally.

More information respecting this beautiful improvement may be obtained by letter addressed to the patentee at New Vienna.

Niagara Suspension Bridge.

The new suspension bridge over the Niagara river, erected by John E. Roebling, C. E., of New Jersey, is at length completed and opened for trains. It is of great strength, and forms the connecting link between the Great Western Railroad in Canada, and the Central New York Railroad. The first locomotive passed over on the 8th instant; it weighed 23 tons. The depression at the center was 3½ inches, but no vibration was produced. "On the 9th the experiments were repeated with two other engines, making trips at the rate of 8 miles per hour. One locomotive, weighing 34 tons, with a car full of passengers, passed over at the same speed; the depression at the center was 5½ inches." The strongest gales of wind have no effect upon it. The length of span from center to center, is 822 feet; height of towers above the rock on the American side, 88 feet; height on the Canada side, 78 feet; height of floor of railway, 60 feet; number of wire cables, 4; diameter of lash cable, 10 inches; number of No. 9 wire in each cable, 3,659; aggregate strength of cables, 12,400 tons; weight of superstructure, 750 tons; weight of superstructure and maximum loads, 1,250 tons; maximum weight of cable and stay will support 7,300 tons.

The Olive in California.

We perceive in the *Pacific*, of San Francisco, that at a meeting of the California Academy of Natural Sciences, held February the 5th, Dr. Kellogg exhibited a drawing and specimen of the olive. The specimens were brought by Col. D. Ransom, of the U. S. Survey, from San Fernando. It is well acclimated in California at all the old mission stations. This tree, as stated by Dr. Kellogg, is thrifty on the sea coast, declivities, and valleys, where the soil is free from stagnant moisture, and when the debris is flat gravel. It grows to the height of 20 feet, with a trunk of eight or ten inches diameter, and forms a picturesque ornament to avenues and plantations. Its branches are graceful; its foliage ever-green; its wood excellent; it lives to a great age, and can be propagated by cuttings.

We hope the people of California will enter into the cultivation of this tree with zeal. Its oil is the finest in the world. It cannot be obtained pure from abroad; all that is sold here is adulterated. We hope California will soon be able to furnish a supply.

To our Book Publishers.

Our publishers of foreign books commit a grave error in not giving the dates of foreign publications. It often happens that these works are referred to as authority, and the date then becomes as essential as the matter. When a work published in London is republished here five or six years afterwards, with only the date of its American publication, it cannot be used nor referred to as authority in a question of dates. We have had considerable experience in this line, and we must tell our publishers that it is not to their advantage to print an old book with a new date, to make it appear a perfectly new publication.

Weather in England.

The severity of winter was felt in England during the first week of February, the same period of its greatest severity in this country. The various parks presented more the appearance of as many Fairs in honor of some great national event, than the usually quiet promenades. The ice was literally covered with human beings, sliding and skating. The Thames, above Richmond, was completely frozen over, and no craft, even of the smallest description, could either pass up or down. Nearly all the steam vessels plying above London Bridge were compelled to be laid up.