

sheets in one piece, and even in the largest sizes are without a joint. A special plant has been laid down by the makers for this purpose, and they now make a large number of various sized and shaped buckets. The arrangement of these on the elevator chains is such that the maximum duty is obtained, as no space is lost in any way. Each machine is arranged to raise 50 tons per hour, but can, if necessary, raise 60 tons. The whole arrangement is most complete, and the machine we inspected worked well and was well constructed.

Our illustration represents a machine constructed for the transference of grain cargoes from large barges to ocean-going ships, weighing it in the process. This machine was made for use at Odessa, the grain arriving at that port by large sailing barges. As will be seen, one elevator leg is sustained at the end of the jibs or derricks, and raises the grain from the barge and delivers it to a conveyer. The latter empties it into a weighing machine placed on the pontoon carrying the elevator, which automatically weighs it, and delivers the grain so that it can be raised to the second elevator, which is carried by the upright frames shown. The second elevator delivers the grain to a conveyer, by which it is dropped into the ship.

The makers are Messrs. S. S. Stott & Co., of Haslingden, near Manchester.—Industries.

The Fastest Railroad Train in the World.

Competition between two of the great English lines of railroad has recently taken the form of cutting down the running time. The London and North-Western and the Great Northern, striving against each other for the traffic between London and Edinburgh, have reduced the running time between these points to eight hours. By the first named road the distance is 401 miles, by the other it is 397. For the entire distance the schedule is slightly exceeded by the short B. & O. run between Baltimore and Washington, 40 miles in 45 minutes. But the length of the trip removes it from the comparison. On the North-Western road one run without a halt of 158 miles in three hours is a part of the trip. This exceeds the run from Fort Wayne to Chicago by 12 miles. To realize what this speed means, it may be compared with the trip from New York to Chicago by the Pennsylvania Railroad. The same speed would reduce the time between these points to a little over eighteen and one-half hours. It has been suggested that an afternoon train should leave New York and should reach Chicago in time for business the next day. The above proves the practicability of such a project.

Clouds of Moths.

The city of Reading, Pa., had a remarkable visitation of moths on the evening of August 1. Myriads of them infested the air, resembling at a distance a snow storm. They were first noticed flying around the electric lights about 8 o'clock, and gradually increased to such numbers as to obscure the brilliancy of the lights. Passengers on the street cars, as they passed under the lamps, were covered with the insects, and handkerchiefs, hats, and fans were plied vigorously to keep them off. Fires were built under the lights and heaps of the moths were burned. Penn Street saloon men were compelled to close their front doors to keep out the pests, which were attracted to the barrooms by the bright lights. The doors and windows of dwelling houses had also to be kept closed to keep them out. Local savants pronounced them cotton moths, and they evidently came from the South. They are said to precede a hot wave, and a decided rise in the temperature is predicted.

At Easton, Pa., butterflies by the thousands flew around the sixty-four electric lights, lit on the carbons and then dropped dead in the globes. When the men who renew the carbons visited the lights, they found on an average two quarts of dead butterflies on each globe, a total of four bushels, besides the lot that had fallen on the ground during the night.

Moths Attracted by the Electric Light.

A curious and interesting spectacle is now presenting itself upon Third Avenue, New York. Myriads of moths are circulating around the electric lamps upon the corners of the street, their shadows being projected upon the sidewalks and opposite blank walls, as if upon the screen of a magic lantern. Passers-by are startled at perceiving these apparitions dart across their path, and stand gazing astonished at the novel sight. The moths are barely a half inch long, but appear projected at least two feet, with outstretched wings in proportion.

THOMAS LATHAM.

A \$50,000 Horse.

A remarkable auction sale took place on July 31, at Lexington, Ky., on the occasion of the sale of the celebrated three year old stallion Bell Boy. This horse had a record at three years of 2:26, and was bought four months ago for \$35,000 by Jefferson & Seaman. To close the partnership, the animal was again sold as above, and brought on the block the large sum of fifty thousand dollars, the largest price ever paid for a horse in this country. The purchaser of Bell Boy was C. E. Seaman.

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GEN. PHILIP HENRY SHERIDAN.

On August 5, at 10:20 P. M., Gen. Sheridan passed away. His death, following upon the demise of Gen. Grant, removes another of the great leaders of the United States army in the civil war, and acts to still further relegate the conflict to the domain of history.

Gen. Sheridan's parents were natives of Ireland, and emigrated to this country about sixty years ago. He was born March 6, 1831, in Somerset, Perry Co., Ohio, about twelve miles from the birthplace of Gen. Sherman, his companion in war and his survivor. His family were of pure Celtic blood, and many of the characteristics of the race are said to have appeared in Sheridan, especially in early life and during his West Point career. He graduated at West Point in 1853, and was sent to Texas, where he began his experience as a soldier in fighting the Apache Indians. Until 1861 he remained in the West. On the breaking out of the war he was assigned to various duties, principally clerical and in the quartermaster's department, until May 25, 1862. Then he took command of a regiment of cavalry, the Second Michigan, and at once began his brilliant record as one of the most daring commanders on the Northern side. His magnificent achievements at Winchester and elsewhere are matter of song and history.

In 1870-71 he was with the German armies, and witnessed many of the scenes of the Franco-Prussian war. He was often solicited to enter the field of politics, but persistently refused. In June, 1875, he married, and now leaves a wife and four children to mourn his loss. His quiet and retiring disposition serves only to make the memory of his actions in war the more enduring.

THE MECHANISM OF THE COUNTER ATTACK.

With the coming of quick-firing arms and more destructive engines of war, tacticians are looking with more favor upon the feasibility of the counter attack, especially where a small force is operating against a larger one, being, as one might say, upon the defensive, and in this humor, allowed by the enemy to choose its own battle ground. It will be remembered that the French, in the early days of the Franco-German war, occupying this latter position, invariably organized a counter attack and generally after the enemy's ranks had been terribly mangled by the play of the mitrailleuse. But the French, peculiarly fitted as they are for offensive rather than defensive operations, rarely followed up their advantages, and later on, the Germans, adopting the same tactics with better organization, kept a force in reserve to oppose the counter attack, which, had the French been less discouraged, would doubtless have proved tardy, if, indeed, at all availing. At least this is alleged in a recent paper of great interest by Major W. M. Smith, of the Royal Artillery. There is an extreme school of writers on the conduct of war with the new arms who insist that to occupy the "weak intervals" of the battle ground with anything beyond a mere "screen" or outpost line of infantry is a waste of strength needed elsewhere. The element in which lies the source of strength is, according to Major Smith, the extent of the fire-swept glacis in front of the position, and the intensity of the hail of iron and lead that can be poured over its surface. The enemy, he says, must be compelled to cross that zone, and to suffer the utmost penalty in doing so, and for this purpose the frontal fire of infantry must be a maximum in volume and in its lateral extent without a break or even a quaver. All military readers will recall Napoleon's famous plan for "piercing the center"—a system which now has fallen into disuse; the "pivot and interval" system rendering it abortive, though doubtless a Napoleon could still break the line with it, as Epaminondas used to shatter the strongest line with a steel-tipped wedge of warriors.

TORPEDO WARFARE IN PRACTICE AND THEORY.

Captain Greenfell, late of the Royal Navy, having large experience with and little confidence in the locomotive torpedo, recently gave his conclusions to the Royal United Service Institution, where were many with equal experience ready and able to confute his most serious charges. Captain Greenfell thinks the big gun, such as modern ships carry, far more effective than the torpedo, the former having a battering range of from three to four miles, and the torpedo an effective range of only 500 yards. As to accuracy, he says: "Captain Galloway (an authority) speaks of a torpedo as being extremely accurate which showed a mean error at 400 meters of 2.4, say 94 inches, laterally, the depth being always within a small decimal of that at which the torpedo was set to run. Any modern gun will do for comparison. I take the first which comes to hand—the 24 cm. 30 caliber long German gun. At a range of 2,000 meters (five times the other), its mean error is vertically 16 inches, horizontally 8 inches."

But Captain Greenfell admits it were impossible to train big guns on a moving torpedo boat, and with another big ship in sight, belonging to the enemy, the fight would be equal. But the torpedo boat is looked to to take a big ship at a disadvantage, and we quote his own authority. Captain Galloway says that machine guns, which are looked to to beat off torpedo