Correspondence.

Unit of Labor?

To the Editor of the SCIENTIFIC AMERICAN:

Can any reader of the SCIENTIFIC AMERICAN state "the unit of labor"? The day's labor is not a unit. The expression means some labor, but it is indeterminate.

Similarly, the wheat from an acre of land means some wheat, but the unit of wheat, as the bushel, enables us to state the quantity.

Labor is a force. All we use is the result of labor. Our civilization is also the result of labor.

Without the unit of labor, we can have no coefficient of labor. Thus we are unable to state intelligibly the one force, or power, that produces everything.

A. BRADY.

Titusville, Fla., December 28, 1899.

True Inventor of the Telegraph.

To the Editor of the SCIENTIFIC AMERICAN:

I have just read an article in your issue of December 30 entitled "The True Inventor of the Telegraph," and purporting to have been written by Heileman Wilson.

He refers to and quotes the well-known letter of "C. M.," published in the Scots Magazine, 1753; and concludes that "it must be admitted that 'C. M.' was the inventor of the electric telegraph, and that every step made since that time, however wise and valuable, can be viewed in no other light than an improvement on the idea of an unknown man."

I dissent wholly from Mr. Wilson's conclusion. It does not appear that C. M. ever tried an apparatus or even made an apparatus embodying the ideas of his descriptions; and he consequently could not know how it would work, or whether it would work at all. Mr. Wilson at an earlier point in his article says: "It was reserved for a Scotchman, living at Renfrew, to suggest that messages might be sent by electricity along wires passing from one place to another." Here he uses the correct term. Unquestionably C. M. made a suggestion; but he did nothing more. It is, however, not the man who suggests that a certain thing may possibly be done, but the man who finds a way to do it, and does do it, who is the inventor.

No one as yet has invented the art of "Seeing by Electricity," but many persons have made suggestions as to how it may be done; and some have asserted that they have done it. When that art and a means for carrying it out shall have been invented, the people who have made the suggestions will of course be duly trotted out as prior inventors.

Mr. Wilson apparently relies too implicitly on his memory, which, however, should have told him that Plymouth is entirely out of the line of communication between London and Waterloo.

The Wellington anecdote is a very familiar one to me; but heretofore the delayed words have invariably referred in all versions of the anecdote I have seen to the battle of Salamanca. THOMAS D. LOCKWOOD.

Boston, Mass., December 31, 1899.

THE number of emigrants from Germany has fallen off within the last few years, and seems to be continually decreasing. In 1898 the number was but 20,960, which is the smallest since the existence of the empire. The table shows the emigration since 1881:

Year.	Number of Emigrants.
1881	220,900
1887	104,780
1891	120,090
1895	37,490
1896	33,820
1897	24,630
1898	20,960

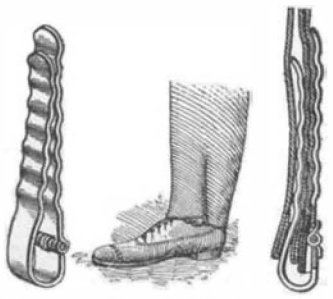
The emigrants for the year 1898 are distributed as follows: United States, 17,232; the remainder of America, 1,094; besides Brazil 785, and Canada 208. Africa received 1,092; Asia, 223; and Australia, 163. Upon comparing the figures for the emigration with that of the total German population, one finds, for 1898, 38 emigrants per hundred thousand as against 43 in 1897 and 232 in 1891. The cities of Bremen and Hamburg gave the largest proportions.

DURING the year 1898, 1,465 persons were inoculated for hydrophobia at the Institut Pasteur at Paris; of these, only 3 succumbed. This gives a mortality of 0·20 per cent. In the following table these figures may be compared with those of the preceding years:

Year.	Number Treated.	Died.	Per cent.
1886	2,671	25	0·94
1887	1.770	14	0·79
1888	1.622	9	0·55
1889	1,830	7	0·38
1890	1.540	5	0·32
1891	1.559	4	0·25
1892	1,790	4	0·22
1893	1.648	6	0·36
1894	1,387	7	0·50
1895	1,520	5	0·33
1896	1,308	4	0·30
1897	1.521	6	0·39
1898	1,465	3	0·20

A SIMPLE TROUSERS CLASP.

We present in the accompanying illustrations a novel form of clasp invented by Dr. Avediss B. Herald, of Washington, D. C., by means of which trousers can be held in position when wrapped about the leg. The clasp comprises essentially a base plate and a clamping plate hinged together and formed with corrugations alternately with one another, so that the ribs or projections of one plate will enter the sockets or depressions of the other. The base plate has its tip turned out so that it will properly clasp the trousers and avoid injury to the leg. The clamping-plate has its butt end outwardly swelled and returned so as to afford room for the seam at the end of the trousers-leg and to set the two corrugated plates at an angle to each other when



A NEW TROUSERS CLASPING DEVICE.

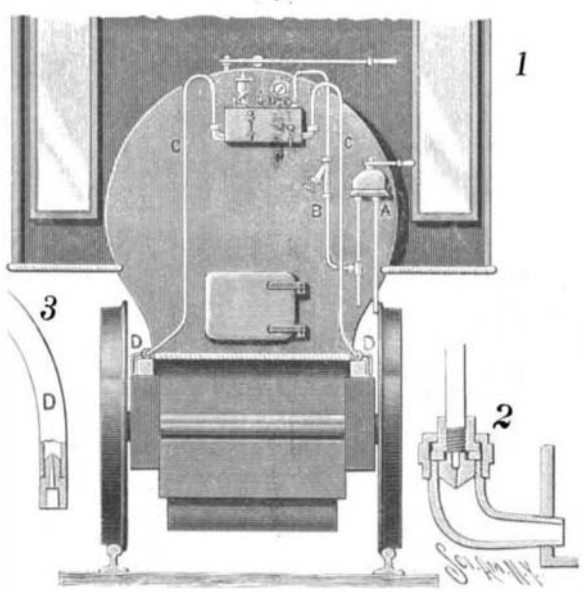
the clasp is closed. About the pintle of the hinge connecting the two plates, a wire spring is coiled with its ends extended to operate the clamping-plate.

The trousers having been folded or wrapped as usual, the clasp is applied so that the base-plate fits within the trousers-leg and the clamping-plate in the loop formed by the fold. The tension of the clamping-plate forces the fold toward the base-plate, thereby securely holding the trousers in place.

AN AUTOMATIC LUBRICATOR FOR LOCOMOTIVES AND MARINE ENGINES.

The lubricating device which forms the subject of the annexed engraving is designed to supply oil continuously and regularly to the bearings or journals of locomotives and marine engines by means of compressed air. The novel features of the invention are found in a peculiar form of nozzle employed, which effectually prevents foreign matter from clogging the pipe. Fig. 1 of our illustrations is a rear elevation of a locomotive cab, showing the device applied to the boiler. Fig. 2 shows part of a feed-pipe and its nozzle. Fig. 3 represents one end of a drip-pipe together with its nozzle.

The oil is contained in a tank secured to the boiler, and provided with a valved feed-cup, a gage-glass to indicate the level of the oil, a cock to permit the escape of air when filling the tank, a gage to indicate the air-pressure in the tank, and a faucet to allow the oil to run off when desired. Connected with the tank near the bottom are outlet pipes which supply oil to feed-pipes, *C*. Each outlet pipe, as shown in Fig. 2, tapers in-



BANGS' AUTOMATIC LUBRICATOR FOR LOCOMOTIVES AND MARINE ENGINES.

wardly and contains within its wider, outer end a nozzle formed with a conical inner end and provided with a straight outlet and a tapering inlet. Wherever a box is to be oiled, the feed-pipe, *C*, is provided with a T-fitting, with one arm of which a drip-pipe, *D*, is connected, extending over the oil-receiver. The drip-pipe, as shown in Fig. 3, is provided with a nozzle similar to that already described, the tapering end likewise facing the direction of supply. The oil is forced through the feed-pipe, *C*, by compressed air, controlled from the engineer's valve, *A*, to which an air-pressure and an air-vent pipe of the usual construction lead.

Owing to the peculiar formation and arrangement of the nozzles, the foreign matter contained in the oil will be deflected to either side of the nozzle, leaving the bore free. An obstruction which enters the contracted end of the bore is forced through the nozzle into the enlarged portion and thence outward, thus insuring a continuous supply of lubricant to the bearings.

The lubricator is the invention of Edwin D. Bangs, of Milwaukee, Wis.

Automobile News.

A large soda water manufacturing firm in New York city has just put into service a very heavy automobile wagon weighing 5,600 pounds. It is driven by electricity.

An automobile club has been formed at Bologna, Italy. There is also one at Nice. According to The Motor Car Journal, there are now 2,173 members belonging to the Automobile Club in France. In one week 99 new names were enrolled.

The Park Commissioner of New York city is issuing permits to automobile owners to the number of two or three a week. Up to the present time only electric carriages have been permitted to enter the Park, as it is thought the gasoline carriages are noisy.

The tour from London to Edinburgh will take place in March. The route will be arranged so as to pass through a large number of places, in order to attract the general attention of the country. There will be several one-day exhibitions at the most important towns.

The Automobile Club, of Chicago, has been organized, and articles of incorporation have been filed. From the large and rapidly increasing number of automobiles in use in Chicago, the club is expected to be a great success. It is proposed to arrange races and tours for automobiles.

Park Commissioner Clausen, of New York city, has granted a permit to a woman to run an automobile vehicle through Central Park. At first he was in doubt as to her ability to manage an automobile, but she invited him to take a ride, and he sent his secretary instead. The latter was speedily convinced of her ability, and the permit was issued forthwith.

The Newport, R. I., plant of the New England Electric Vehicle and Transportation Company is most complete, and vehicles are let with or without drivers. The vehicles are stored in what were formerly horse barns. Ample facilities for charging the storage batteries are provided. The summer colony was most enthusiastic over automobiles, and the demand was so great that it was impossible to care for the carriages during the day only. An electric motor drives an air compressor, which is used to inflate the tires.

A motor carriage has recently been introduced in France which combines many novel features. It is normally propelled solely by an oil engine, but on hilly ground is helped by an electric motor. The oil engine works at constant speed, and when the vehicle does not absorb all the engine power, the excess drives the motor as a dynamo and charges the accumulators. Then the accumulators are only used occasionally and they are kept fully charged. The engine is direct connected to the dynamo-motor, which is shunt-wound, and this is in turn used to start up the engine. The changes in speed are effected mechanically.

On March 1, 1900, the Automobile Club of America will take possession of the famous Kingsland Point, located almost in the middle of the Tappan Zee, on the Hudson River, near New York. Here was built the famous Philipse manor house, in the cellar of which may be found port-holes for cannon. John Brisben Walker has given the use of the Kingsland mansion to the Automobile Club of America, free of rental, for a year. It is twenty-six miles out of New York, and as the roads leading from New York to it are perfect, it will make an ideal run. A terrace, protected by a stone wall, projects into the Hudson in front of the mansion, and in the summer is filled with plants. The entire point is covered by trees of large size, and there is a pavilion over the water. The entire property has 233 acres.

The Fifth Avenue Coach Company, which recently purchased the old Fifth Avenue stage line, has taken the first step toward substituting automobile vehicles for the present stages. A trial of an electrically propelled stage was made January 2, 1900, from the company's stables at Eighty-eighth Street, and it took only thirty-two minutes to run from the stables to the south side of Washington Square, and the return trip was made in thirty-five minutes. There is one seat on the outside for the driver, and at the rear of this is a seat broad enough to accommodate three persons. The inside is finished in oak and will seat eight persons. It is equipped with four inside roof lights, two outside lights, one on either side of the driver's seat, and one portable emergency light, all of course being electric. The vehicle is propelled by a storage battery consisting of 22 cells, the whole weighing 1,500 pounds. The total weight of the vehicle is 5,500 pounds, and the maximum speed is 9 miles per hour. Of course the stage is small and is not exactly what would be used on the line, but it is sufficiently large for experimental purposes.