per cent. of rape-seed oil for the lightest variety, and five per cent. for the heaviest. This heavy oil also sometimes submits to another purification, by agitating it with very dilute sulphuric acid, then with a weak brine of common salt, and afterward washing with tepid water."

Correspondence

Submarine Telegraphy.

MESSRS. EDITORS:—Will you allow me a little space in your excellent journal to correct an error of fact, respecting the origin of submarine telegraphy, to which my attention has been specially directed in a marked number of the *Telegraphic Journal*, of London, sent me thence by an unknown friend.

In a notice in that journal of April 2d, of the late Mr. Brett's collection of pictures, there is in this incidental remark; "The late Mr. J. W. Brett who was designated by Prof. Morse as *the father of submarine telegraphy*, &c."

I have never designated Mr. Brett, nor any one else as "the father of submarine telegraphy," having always claimed to have first proposed, and personally laid and operated the first submarine telegraph myself.

Mr. Brett I knew well; he was a personal and highly esteemed friend, but I knew that he supposed himself to be the first who had proposed a submarine line in 1845. In conversations with him I always insisted that not only the first proposal, but the first actual execution and operation of such a line belonged to me. I told him I had unanswerable evidence of the fact. This announcement to him I saw gave him uneasiness, and after I left Paris in 1858 for Porto Rico, he wrote me a letter under date of Nov. 15, 1858, in which he asked me to give him the history of my connection with submarine telegraphy. To this letter I replied from Arroyo, Porto Rico, Dec. 27, 1858, quite at length, giving him minutely its history. In that letter (a press copy of which I have by me), I showed him that at least as early as 1838 I had made the proposition of an Atlantic telegraph to Robert Walsh, Esq., the American Consul in Paris, for Mr. Walsh testifies to that fact of his own move, without my knowledge at the time in one of the American journals, of which he was the foreign correspondent. But I refer him also to my letter of Sept. 27, 1837, to the Secretary of the Treasury, published in the Congressional documents, in which letter I suggest the submarine method of constructing a telegraph line. I referred him also to my letter to another Secretary in August, 1843, in which I make the distinct prediction of a future Atlantic telegraph, as a deduction from experiments I had made. For in the autumn of 1842, I had carried into effect the proposition of a submarine line in the harbor of New York, laying out the line personally from Castle Garden to Governor's Island. This was an acknowledged success by the journals of the day, and for this success I received the gold medal of the American Institute. This medal fixes a date (1842) unmistakeably. Mr. Brett rests his claim on the fact that in 1845 he addressed a letter to the British Government proposing oceanic and subterranean telegraphs. The year 1845 is the earliest date to which he appeals, and at that date he had only suggested a plan of submarine telegraphs to the British Government, while three years before I had actually constructed and operated in New York harbor a submarine telegraph line.

It is obvious, therefore, that I could not have designated Mr. Brett as the "father of submarine telegraphy." The *Telegraphic Journal* marks these words professedly as a quotation from a written or printed document of mine. I have never written nor printed any such admission. The nearest to such an admission is the following extract from the historical letter alluded to, which I wrote to Mr. Brett. After giving him a detailed account of the steps I had taken in submarine telegraphy, I say, "I have read your account of the origin and progress of the ocean telegraph with deep interest, and if chronology by its rigid dates gives the origin of submarine telegraphy to me, it cannot detract from you the undoubted merit of having independently originated the project of submarine intercommunication, and successfully carried it out, too, in Europe to a useful result. I esteem and honor you as the *Father of European Submarine Telegraphy*, and I rejoice that both the honor and the profits have been so justly awarded to you."

In thus awarding to Mr. Brett in that letter, the honor of being an independent originator of "European Submarine Telegraphy," I ought to say that if there are other claimants to that position in Europe, I do not pretend to decide between them. I based my remark to Mr. Brett solely on his representations to me, believing him to be as he was, an honorable and high-minded, as he certainly was a generous and worthy man. If the supposed admission on my part that Mr. Brett was the "father of submarine telegraphy," is founded on this letter of mine to him, it is seen at once that it is a misquotation in the *Telegraphic Journal*, and (as I am willing to believe) through mistake, that the important qualifying word "European" was left out, but which is necessary to be inserted to make the quotation conform both to my letter and to the truth of history.

SAMUEL F. B. MORSE.

New York, April 26, 1864.

Strength of Steam Boilers.

MESSRS. EDITORS:—Mr. T. W. B. has been laboring in a number of articles on the "Strength of Steam Boilers," to disprove the truth of the principles of the tables of Mr. Toshach, given on page 71, current volume of the SCIENTIFIC AMERICAN. He claims that the strain to which a boiler shell is subjected varies as the semi-circumference, and yet denies the theory of Mr. Toshach, which supposes the strain to vary with the diameter—not knowing that the two propositions are identical—thus unwittingly admitting what he denies. The trigonometrical lines of the circle, all being functions of one another, vary by the same ratio; thus, if any lineal element, as the diameter, is doubled, all the other lineal elements, as the circumference, sine of any arc, cosine, tangent, secant, &c., or any aliquot part of the same, will be doubled. Hence, if any quantity varies with one of these elements in a given ratio, it varies with each and all of them in the same ratio. Therefore, if the strain on the shell varies as the semi-circumference, it also varies as the whole circumference or as the diameter, or as the radius—which latter term is generally used. This proposition is known and recognized by all well-informed engineers, and enters into the theorem of Mr. Toshach, for the table above referred to.

H. C. PEARSONS.

Ogdensburgh, N. Y., April 28, 1864.

MESSRS. EDITORS:—On page 278, current volume of the SCIENTIFIC AMERICAN, your correspondent "T. W. B." after all that has been written on the subject, sticks to his theory that, "the force to rupture boilers is as the semi-circumference, and 52 per cent. greater than the usual estimate, calculated from the diameter." To be as brief as possible in reply, may I ask him to refer to the figures in his letter (page 278), and also note the following extract from it:—"showing that as E is approached, the required resisting force becomes theoretically infinite;" that is to lift or force asunder the upper semicircle, D F E, from the lower one. Now if the semi-circular theory is correct, the force cannot be "infinite" or decreased in any part, and must be as great at D or E as at F, and at each and every inch above and between those letters; and each of these distinct inches (on the semi-circumference) must exert an equal force in an upward direction. If "T. W. B." will look at this carefully he will be convinced of the correctness of it, before writing on this subject again. "T. W. B." further says:—"From the above I deduce the rule that the force at any one point to rupture at E is inversely as the cosine to the radius; and is mathematically conclusive in favor of the semi-circumference, which will be more plainly evident by inspection of the quadrant F H." Now, Messrs. Editors, I cannot see the slightest difference between the quadrant F H, and any other in the circle below it; nor can I see how he can come to the mathematical conclusion he does from the cosine. I should like to see a formula of "T. W. B's," expressing the relation between the cosine and the semi-circumference, to illustrate its application to the present case. The relation of the semicircle to the diameter is as 1.57 to 1—not as 1.52 to 1, or 52 per cent. as "T. W. B." has it.

WM. TOSHACH.

54 William street, New York.

Employment for Women.

MESSRS. EDITORS:—Recent inquiry into the condition of the working women of Philadelphia has brought to light facts which, in my humble judgment, are neither creditable to our christian feeling or social economy. These facts have been submitted to such parties as were deemed fit, from their acknowledged wisdom and religious culture, to propose some remedy for the dreadful suffering and degradation which working-women are under. But all seemed alike ignorant and hopeless that any measures could be devised that would successfully reach the fact that mothers with one, two, three, four, and five children, have no other means of supporting their offspring than by their own labor, the compensation for which runs from two dollars to four dollars per week (most generally nearer the former sum); and that scores, if not hundreds, of women, born and raised in hope and prayer, are compelled to debase themselves for the necessities of life. Believing that there exists a remedy for this state of things, I cheerfully offer the Treasury Bond, No. 8,712, of fifty dollars, as a premium for the best paper on "Improving the Condition of Working Women."

This is but a small sum for so great a purpose; but it is all, as a poor man, I have to spare. Yet I feel assured that the good results from such an effort, if successful, with the gratitude of the toiling ill-paid women, will make the purse invaluable, and perhaps not unworthy the efforts of the best statesmen in the land.

Communications must not be longer than a tract of ten or fifteen pages; each must have the name of the writer on a separate slip, which will be kept from the examining committee until the decision is given, so that no member of the committee may be influenced by any personal consideration for any writer whom they may know.

Communications must be postpaid, and sent to Mr. Thomas W. Braidwood, School of Design for Women, 1,334 Chestnut street, Philadelphia, who will retain the names of the writers, but hand the communications to the committee for examination.

T. W. BRAIDWOOD.

Philadelphia, April 25th, 1864.

Distributing Petroleum in Pipes.

Le Cosmos, of Paris, announces in glowing terms an invention of M. Forcault, for lighting houses by means of petroleum, in a novel manner. The oil is driven, by mechanism which is not described, through pipes precisely similar to gas pipes, and issues through burners of a peculiar construction, arranged in the same positions as ordinary gas burners. The force that drives the liquid through the pipes would eject it in a stream from the burners if the flow was not controlled by a regulator, which seems to be one of the principal features of the invention.

Le Cosmos says that this system is in operation in several places, and that one of the most frequented saloons in Paris has been lighted by it for more than six months.

Le Gaz suggests that the authorities will prohibit this distribution of liquid petroleum in pipes on account of the great danger of fire.

Report of the Commissioner of Patents.

We commence in this week's issue the publication of the Annual Report of the Commissioner of Patents, and shall continue it in succeeding numbers until it is completed. We hope all our readers will carefully peruse this document, as it is one of the most interesting and valuable that has ever issued from the Patent Office. We shall refer to the subjects so ably discussed by Mr. Holloway, in a future number.

THE new two-cent piece which has been recommended for the sanction of Congress, is said to resemble as much as anything can, a gold coin. On one side there is a wreath of wheat, in the center of which is stamped "2 cents," and around which are the words "United States of America." On the other side there is the shield of liberty, bearing the words, "God our Trust."

Blasting by Electricity.

The following account describes an apparatus used by the engineer corps of the Philadelphia and Manayunk railroad in some operations on that line:—

"The battery consisted of about 25 copper cells, 1 foot long by 18 inches deep, by 1 inch wide, open at top and bottom; these were set in a wooden frame, and separated from each other by common window glass, which was also secured in the frame; inside of each of these cells was a plate of zinc, just large enough to allow a slip of grooved wood to hold it away from the copper at the ends. Each zinc plate was connected to the copper cell next to the one in which it was placed, making thus a very large voltaic pile. From each end of this battery an insulated wire ran to the holes to be fired; that from one extremity, of course, going from the copper and the other from a zinc plate. The acid used was sulphuric, diluted in about thirty times its quantity of water. The frame was arranged to raise and lower into a wooden trough or bath, which contained the diluted acid, by a windlass, so that the person who was engaged in connecting the main wires to those in the holes did his work without any risk of an explosion, the battery not being lowered into the acid until he was at a safe distance. For firing the holes two wires were taken and twisted together. At first it was thought necessary that both should be insulated, but it was soon found that if one of them was coated with gutta-percha it was sufficient. At the end inserted into the holes these wires were separated about a quarter of an inch, and connected by a very thin piece of platinum wire; afterwards it was found that steel answered every purpose, and was much less expensive. This thin wire melted as the charge of electricity passed through it. At the commencement of the work this was inserted directly into the blasting powder, but two great disadvantages arose therefrom —first, the danger of the small wire becoming broken in tamping the hole; and, second, the difficulty of igniting the coarse blasting powder by the instantaneous spark of electricity; to avoid both of which a small paper bag, large enough to hold about a gunshot charge, was placed over the end and filled with rifle powder, the bottom being pasted, shut, and the top tied securely above the steel wire. Another difficulty then arose from the fact that in handling the 'cartridges,' as they were called, the fine powder was frequently unavoidably shaken out of them. This the men who had charge of loading the holes soon discovered, and before inserting one, would finger the little paper bag to see if it was full, and, as their hands were generally wet, injured the powder. To avoid this, gutta-percha was dissolved in ether, and the cartridge dipped into it; as soon as taken out of the mixture the volatile liquid evaporated, leaving a very thin coating of gutta-percha over the paper. Thus perfected, the 'cartridge' was inserted into about the center of the charge of blasting powder in the hole, the opposite ends of the wire protruding, tamping was put in exactly as if fuse were used instead of wires. Before firing, a number of holes were connected together, by taking the protruding end of one wire of the first hole and twisting it to the end of one of the second, the remaining one of the second to one of the third, and so on. One of the main wires from the battery was then connected with the end of the first wire of this 'batch,' and the other to the end of the last; the battery was then immersed in the bath containing the acid, and the discharge of the whole lot was instantaneous and simultaneous. As many as twenty holes were frequently fired in one lot. The working of this arrangement was eminently successful. For three months an average of nearly one hundred holes a day were fired at each tunnel without a single accident, so far as the blasting was concerned. This system is almost identical with the one invented in France. Many of the details, such as coating the bag with gutta-percha, &c., will be indicated by local circumstances to practical minds."

On the Purification of Sulphuric Acid, by F. Maxwell Lyle, Esq.

The best means of obtaining sulphuric acid entirely free from arsenic fully bear out the fact recorded by MM. Bussy and Buignet, viz:—that arsenic, in order to pass during distillation, must be present in the state of arsenious acid. I have, however, been led to employ a different modeof purification, chiefly with a view to insuring the complete absence of all nitrous products, and obtaining a pure acid from the very first, and of thereby obviating the necessity of changing the receiver—a most dangerous operation when distilling sulphuric acid. If the acid contains nitrous compounds, I heat it in a porcelain capsule to a temperature of about 110° C., with a small portion of oxalic-acid, till the latter is completely decomposed, and all effervescence has ceased; about ¼ or ½ per cent. is amply sufficient for nearly all samples of commercial acid. It is best to add the oxalic acid before heating, and to stir constantly till the reaction is completed. I now allow the acid to cool down to about 100° C., and add to it a solution of bichromate of potassa in sulphuric acid, or some of the salt itself in fine powder, until the pure green color at first produced by the formation of sesquioxide of chromium is replaced by a yellowish green, indicating an admixture of chromic acid in the free state. The acid so prepared, being now distilled, passes from the first perfectly free from all impurity. The addition of the bichromate has another advantage, viz: that if it be first of all applied to a small sample of the commercial acid, it indicates the presence of free sulphurous acid, as well as of arsenious acid, and either of these being present, we may presume on the absence of nitrous compounds. No doubt permanganates would answer equally well; but the bichromate of potassa, which is cheap and easily procured, is so convenient and inexpensive as to leave nothing to be desired.

Broadside and Turret Guns.

At a recent meeting of an association of Naval Architects, in London, Mr. Norman Scott Russell read a paper on the above subject, which will be found interesting to our readers:—

"Adverting to the assumption made by Captain Coles and others, that 300 or 600-pounder guns, weighing from 12 to 20 tuns each, cannot be carried as broadside guns, Mr. Norman S. Russell shows by some simple calculations that this assumption is absolutely erroneous. Such vessels as the *Warrior* are quite capable of carrying a full armament of 12-tun guns instead of their present 68-pounders, without increasing their displacement more than two or three inches, or losing their stability. With regard to the difficulty of training such heavy guns, that is already felt with the 95-cwt. 68-pounder to such an extent that it is doubtful whether it could be used in a heavy seaway. However, Mr. Cunningham's very simple application of steam power to the working of ship's guns disposes of the difficulty as regards either class. With respect to the width of port, Mr. Russell admits that, for the 300-pounder, the broadside port would have to be 28 inches wide to admit of training to an angle of 60 degrees against a width of 23 inches in the cupola port. But he considers that Captain Coles has far over-stated the question in assuming 3 feet square for the broadside port. Mr. Russell also admits the advantage which the cupola system presents in the weight of a battery being borne amidships, so as to cause less rolling than heavy weights winged outwards. The great arc of training, commanded by the turret, is one of the chief advantages claimed for it. Mr. Russell considers this much over-rated, especially when more than one cupola is carried, on account of the obstacles offered by masts and rigging, boats, hatchways, and especially by other cupolas, if the vessel carries more than one. In the vessels designed by Mr. Coles, there is a great disadvantage in the main-deck being at so much lower a level than is usual in vessels of similar tunnage—thus exposing the deck to vertical fire from ships with higher topsides, and, moreover, being washed by green seas where other vessels have a dry deck. With regard to the depression of the gun, Mr. Russell remarks that it is doubtful whether in any case a lee gun could be used with advantage in a sea heavy enough to wash the gun deck; and as to the weather guns, a broadside gun could certainly be depressed more than a turret gun placed amidships, unless the latter fired through her own deck and topside. Mr. Russell then proceeds to compare in detail the merits of ships carrying one, two, or three cupolas with vessels carrying the same weight (in guns and armor-plating together) distributed as a broadside battery. The result, as he gives it, is, that for one cupola, as against the corresponding broadside ship, the cupola has the advantage; for two cupolas the advantages are, if anything, in favor of the broadside, although nearly balanced; but for three or more cupolas, the broadside arrangement has a marked superiority, which increases in a rapid ratio with the size of the vessel. Mr. Norman S. Russell accordingly comes to the conclusion that the proper use of the turret is for moderate-sized vessels carrying one or at most two of them; and he thinks that one or two cupolas may be usefully substituted for pivot guns on the upper decks of ships-of-the-line carrying a heavy broadside armament. Finally, he remarks that this is a question for the naval officer rather than for the naval architect to decide, since neither plan presents any constructive difficulty, and he quotes Captain Symond's authority for stating that speed and facility of maneuvering are of at least as high importance as complete protection."

The Great Contest between Whitworth and Armstrong.

The (London) *Engineer* of April 8th says:—

"The long-expected contest between the Whitworth and Armstrong systems of artillery commenced this week at Shoeburyness, in the presence of most of the members of the Select Ordnance Committee, and a large number of noblemen and gentlemen interested in the subject.

"Sir William Armstrong is represented by three 12-pounder breech-loaders and three muzzle-loading shunt guns of the same caliber, and Mr. Whitworth by three muzzle-loaders of the same size. These nine guns are already on the ground, and three 70-pounder Armstrong breech-loaders, and three 70-pounder Whitworth muzzle-loaders are on their way from Woolwich to Shoebury.

"The details of the trial are kept secret at present; but it is pretty well known that a minimum of 3,000 rounds will be fired from each gun. The contest will be necessarily very tedious, and will extend over a period of two or three months, if not more. At first sight this seems to be an unnecessary expenditure of time and money, but the committee are desirous of testing these arms to their very utmost capacity, at every range, with every variety of projectile, and against every kind of defense. They will also be tested with reference to the quickness with which they can be charged and fired. After the 3,000 rounds have been fired, it is believed that the guns will be subjected to a series of proofs with gradually increasing charges of powder.

"The trial commenced with one each of the three descriptions of 12-pounders. Seven rounds of solid shot, three of dead segmental shells, and five of dead common shells were fired point blank, to test the exact range of each gun. Six rounds of solid shell were then fired at one degree of elevation, and the contest was prematurely stopped by a violent storm of rain and wind, which swept across the marshes from the south-west. Up to the last three or four rounds the weather has been most balmy and spring-like, there being hardly a breath of wind stirring to interfere with the practice.

"As so much work has to be gone through, it will hardly be possible to get even a glimpse of this most important and interesting contest before, at least, seven or eight weeks have elapsed. The results of the more interesting experiments will be given from time to time; but it must be remembered that they will only form units in the figure of merit that is to decide the contest.

"Since last the Whitworth 12-pounders were tried at Shoebury, Mr. Whitworth has strengthened them with an extra coil at the breech, making them nearly 20 per cent. heavier than the Armstrongs of corresponding caliber, which weigh rather more than 8 cwt. He has also, at the suggestion of the Ordnance Committee, opened a vent through the top of the breech, as well as through the caseable, the method of firing the gun through the caseable vent being thought dangerous to the gunners. The gun tried was fired through the breech vent."

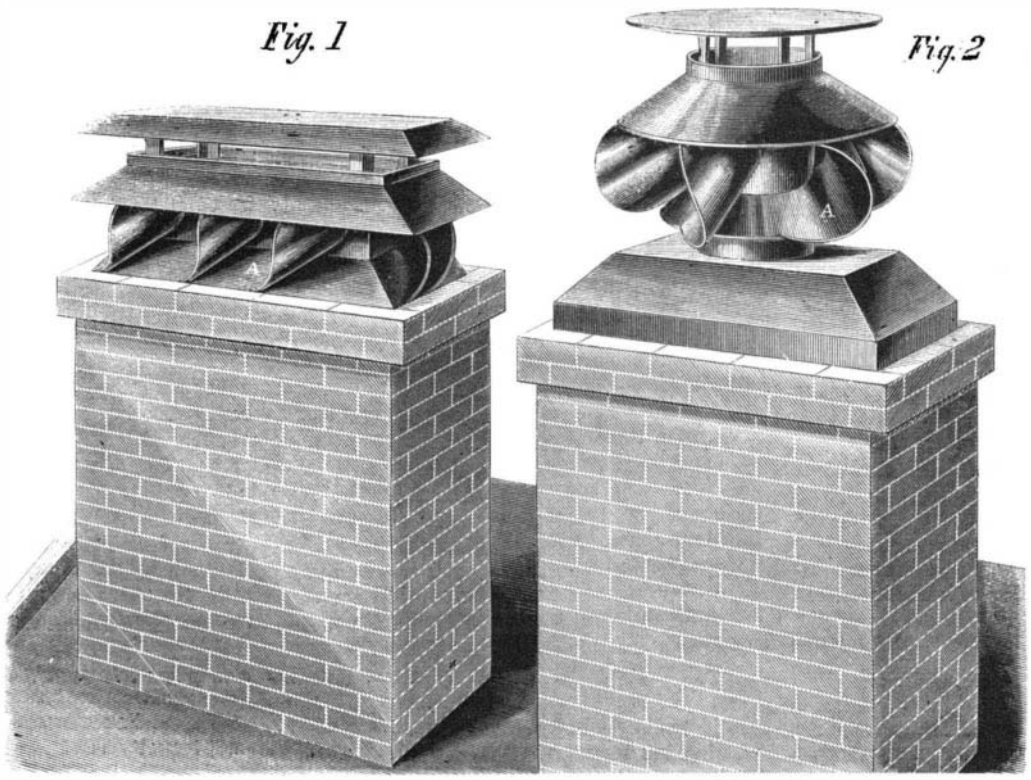
THE iron-clad *Re de Italia*, whose remarkable passage we chronicled, lately went across the Atlantic at the average rate of 13 miles an hour. With steam from only four boilers the engines made forty turns with the utmost ease.

Chimney Cap and Car Ventilator.

The annoyance and discomfort of a smoky chimney is very often experienced, even in houses that have been carefully built. Sometimes local causes, such as other chimneys in close proximity being higher than the defective one, are the source of the trouble; in others the defect is in the construction of the flue. The engravings (Figs. 1 and 2) published herewith represent an improved chimney cap which is intended to prevent the trouble alluded to. The cap is peculiar in shape and appearance and is designed to aid the draught by causing the smoke ascending to be literally screwed out, or create a current in the chimney by leading the heated air and unconsumed gases through a series of curved passage-ways, A. The natural and rapid circulation of the air outside the chimney being counted upon as an active agent to produce this effect. The inventor says, in his circular, that smoke naturally assumes curved and rolling outlines in its ascent, and that he has aimed to adapt his chimney cap to this appearance. He further says, in respect to its other qualities :—

"When this cap, with its wings or funnels, is stationary, the outer current of air is made to perform the desired curves on the inner current by catching it at the side and thereby twisting it outward. All sides being alike, if the gale sweeps round in whirlwinds it only assists the draught; or let fogcome down and it still carries the smoke away by striking the caps so as to produce an outward draught at every opening. We place two or more of these funnels in the shape of trumpets on the side of a locomotive smoke-stack, the mouth of the trumpet being in front, and carry the narrow end rounding to the side of the stack, so as to produce a side draught on the smoke, the speed of the engine creates a draught backward, together with this side draught by the same cause, and the effect will be a twist or curl in the smoke so as to keep it out of the way of the train. Its advantages as a car ventilator are easily seen, from the fact that there are frequently opposite draughts—one by the speed of the train, the other by the wind being in an opposite direction or on one side. Before applying for a patent, this cap was thoroughly tried on a chimney that was and is yet soaked through with creosote oil so as to be greasy on the outside; this chimney for two years was a great pest; since this cap was put on it has worked perfectly. Wherever it has been tried it has succeeded just the same. Testimonials might be brought to show the efficacy of this ventilator, but it needs nothing more than an examination of its merits to satisfy the most skeptical."

This chimney cap was patented on Sept. 8, 1863, through the Scientific American Patent Agency by James Tomlinson, of Racine, Wis. For State and county rights, and all further information, address the nventor as above.

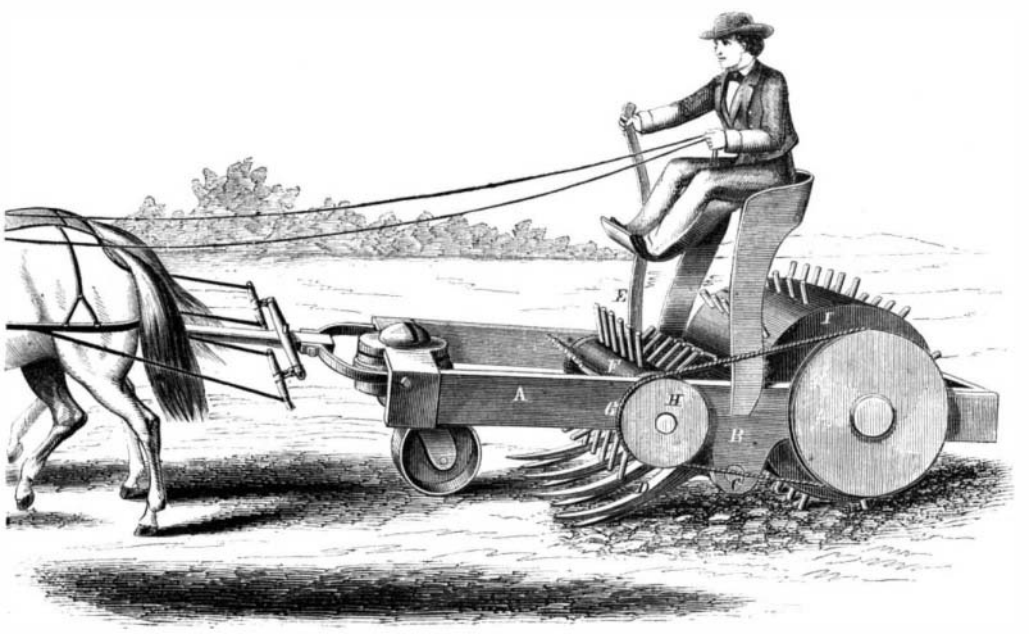


TOMLINSON'S CHIMNEY CAP AND CAR VENTILATOR.

Machine for Tilling the Soil.

This engraving represents a new machine for tilling the soil by forking up its surface and afterward crushing or pulverizing the clods so that the earth is fitted for the reception of seed. The construction and operation will be understood by referring to the appended description. The frame, A, has a projecting portion, B, which carries a shaft, C. This shaft has a set of forks, D, upon it, which enter the soil as the machine advances. The hand of the driver is seen grasping a lever, E, at one side; this lever is affixed to the shaft the forks are on, and bears against a pin in the side of the frame, A, when the forks are at work, so that they cannot enter the ground too deeply By pulling on the lever the forks can be raised entirely clear of the ground. Immediately over these forks is placed a small roller, F, driven by a belt, G, passing over a pulley, H, from the larger roller, I, in the rear. The teeth of the roller, F, catch all the weeds and grass which may be drawn into the forks and pull them out, thus preventing them from getting clogged. By the continued operation of the machine these weeds are thrown on to the larger roller by which they are deposited in the rear of the machine. This roller, F, also serves to pulverize the clods and break them, so that the soil is evenly tilled. The large roller behind has teeth, as may be seen, which, entering the ground, cause the machine to advance, and it also serves to level or roll the surface after the forks have harrowed it up so that it presents an even and level appearance. This large roller may be placed in front of the forks, if desired, and this position is preferred by the inventor when the ground has been plowed and large lumps occur; these lumps are crushed by the roller and the forks work easier in consequence. The caster-wheel in front permits the machine to be turned easily in any direction, and the peculiar attachment by which the horses are connected to the front is also an advantage, as they may turn slightly to right or left without diverting the machine from its path.

This machine is the invention of William Wadsworth, of Sacramento, Cal., and a patent is now pending through the Scientific American Patent Agency. For further information address the inventor at that place.



WADSWORTH'S MACHINE FOR TILLING THE SOIL.

Ingenious Legerdemain.

Two brothers, of the name of Davenport, are attracting considerable attention in this city by exhibitions of legerdemain, or spiritualism, whichever the audience choose to call it. If considered as sleight-of-hand the tricks are quite ingenious, but if attempted to be passed off as real-ly manifestations of supernatural power, the effort is ridiculous. The young men are tied in a cupboard on the stage, and the instant the doors are closed a trumpet is thrown out through a hole in one of the doors. All of the tricks are based on plans of slipping knots and ropes, a matter to which so much thought and inventive faculty has been devoted during the last few years by the exhibitors of humbug spiritualism.

THE WESTERN PENNSYLVANIA SANITARY FAIR.—The loyal people of western Pennsylvania have determined to aid the Sanitary Commission by establishing a Fair similar in its objects to those already so successful throughout the country. It is to be hoped that our people will contribute as generously in this case as they have in others and enable the good citizens of the section in question to swell the funds of the Commission by a handsome sum. Contributions of every kind will be thankfully received, and any of our readers who may have small wares which are new and saleable, recently patented, will find this a capital method of introducing them to the public. The committee to receive donations are William B. Lare, of the *Pittsburgh Dispatch*, H. J. Murdoch, of the *United Presbyterian*, and William Neeb, at Pittsburgh, Pa.

THE London *Engineer* says:—"It appears that in some of the steamship lines where surface condensers have been used for a few years they are now being abandoned. It is asserted that the saving in fuel does not compensate for the increased repairs."