IMPROVED FOLDING MIRROR.

In the folding mirror shown in the annexed engraving four sets of mirrors are attached to a single support, which is adapted to revolve on the vertical standard. Each set of mirrors consists of a stationary mirror and three hinged mirrors, two of which are at the ends of the stationary one, the third being hinged to the top so as to swing in a vertical plane. This mirror is provided with a hook, by which it may be secured at an angle of about forty-five degrees.

A person standing before this mirror will not only see a front view of the face, but will see side views in the lateral mirrors, and the upper mirror will reflect the image of the person foreshortened. Thus four different views may be had simultaneously. This invention is well adapted for use in the dressing room, and is especially useful in clothing and millinery shops or in other places where clothing is inspected or fitted.

Further information in regard to this invention may be obtained by addressing Mrs. C. McEvoy, P. O. Box 184, Millbury, Mass.

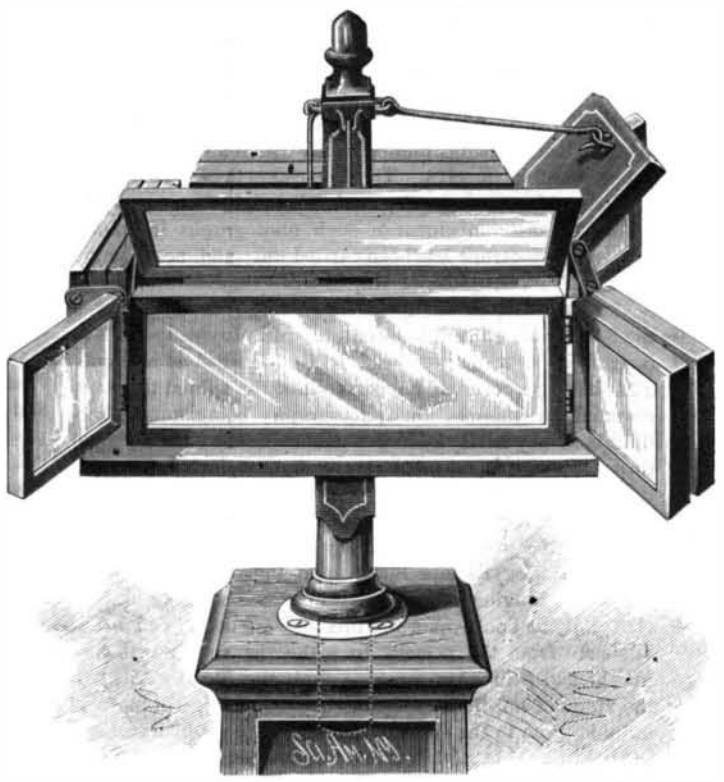
Improved Plan for Street Sprinkling.

At a recent meeting of the St. Louis Engineer Club, Col. Henry Flad explained a new device for sprinkling streets direct from the waterworks mains in a very rapid and efficient manner. The apparatus consists of three sections of four-inch wrought iron pipe connected between and at the ends with a hose and couplings, the pipe section being mounted on wheels for convenient transport. In connection with each section of pipe is arranged an automatic sprinkling nozzle, so adjustable that it can be readily adapted to any width of street. Half a block is sprinkled at a time, and ten blocks can be sprinkled in an hour. The connection being made with the waterworks mains insures a full head of water and very rapid and thorough work.

This system is specially intended for sprinkling residence streets at night. It will not answer at all for day sprinkling or for streets devoted to traffic. The estimated cost of this method is about one-tenth that of the present mode.

The Human Manufactory.

A man may eat and drink heartily all day, says an unknown writer, and sit and lounge about, doing nothing, in one sense of the word; but his body must keep hard at work all the time, or it will die. Suppose the stomach refused to work within ten minutes after a hearty dinner, the man would die in convulsions in a few hours; or cholera or cramp—colic would rack and wreck him. Supposing the pores of the skin—meaning thereby the glandular apparatus with which they are connected—should go on a "strike," he would in an hour be burning up with fever; oppression would weigh upon the system, and soon become insupportable. Suppose the liver became mulish, the appetite would be annihilated, food would be loathed, torturing pains would invade the small of the back, and the head would ache to bursting. Suppose the kidneys shut up shop, and danger most imminent, sufferings unbearable, and death more certain, would be the speedy and unenviable result. If the little workshops of the eye should close, in an hour he could not shut nor open them without physical force, and in another hour he would be blind; or if those of the tongue should close, it would become dry as a bone and stiff as steel.



NOVEL FOLDING MIRROR.

To keep such a complication of machinery in working order for a lifetime is a miracle of wisdom; but to work them by the pleasures of eating and drinking is a miracle of beneficence.

EDISON'S NEW ELECTRICAL RAILWAY.

But for the chronic aptitude of this generation never to wonder at anything, we might expect to witness expressions of surprise as it becomes known that we are to be whisked through the country at the rate of thirty, forty, or fifty miles an hour by an agent invisible and unknown save by its effects; but the moment electricity is suggested as a motive power for railways, the never-to-be-surprised public say "Why not?" Nevertheless the practical application of the electric current to this purpose seems never to have had a prospect of success before the experiments of Dr. Siemens, in Berlin, in 1879, and the present extended experiments of Mr. Edison. It is a subject fraught with difficulties, and while it has always offered a seemingly promising field for inventors, the expense attending experiments of this class has been a most effectual barrier to progress.

Mr. Edison, more fortunate in this respect than many of our experimenters, has not been hampered by monetary difficulties, and having had ample means for carrying out his ideas in practice, he has been enabled to develop his inventions more rapidly perhaps than any other man living.

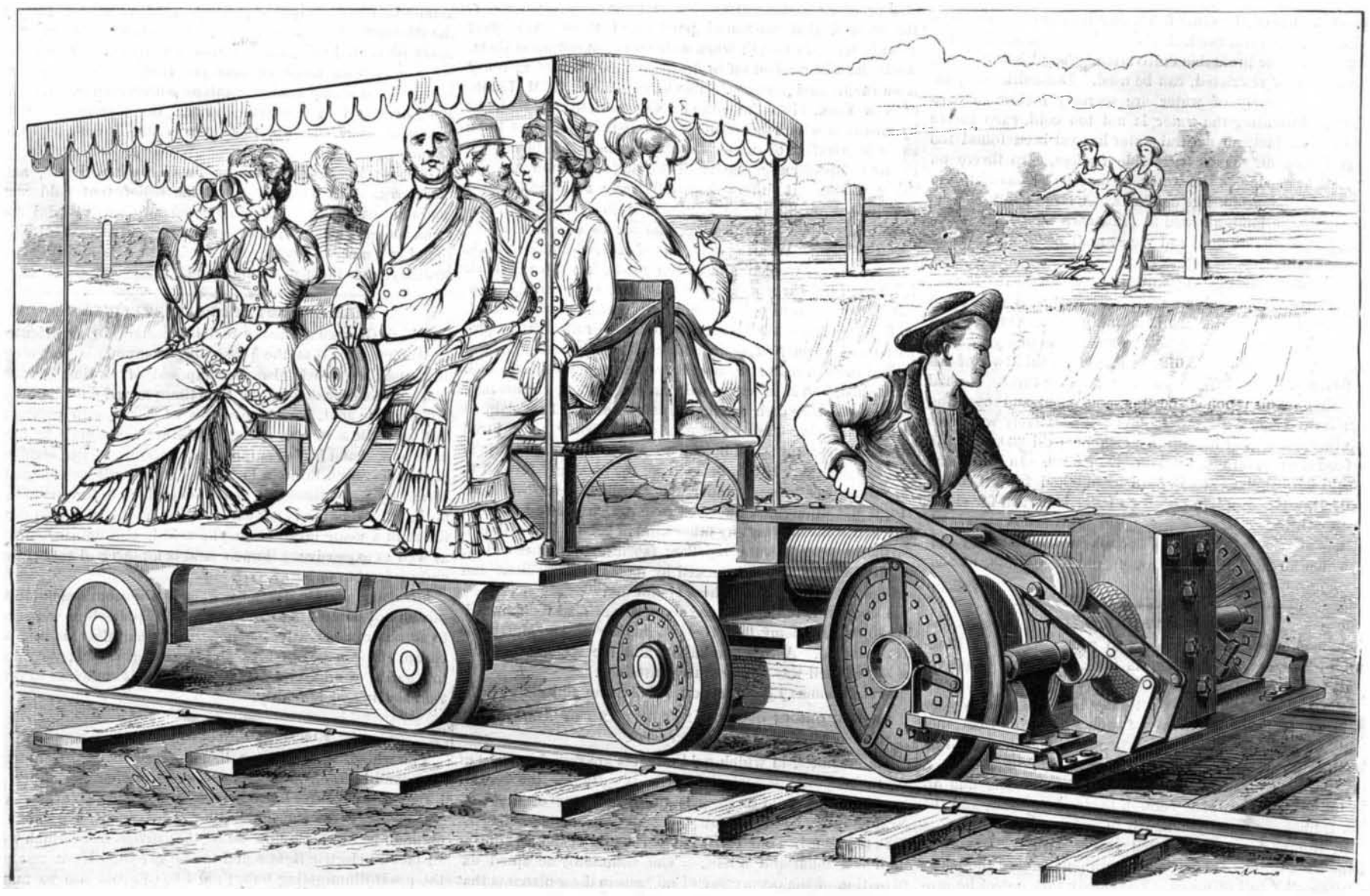
His new electric railway at Menlo Park is built over natural ground, with little or no grading, and with no regard for curves or grades. It is at present something over half a mile long, and is soon to be extended to form a mile circle. The present rolling stock consists of one electric locomotive and one open car. The general appearance of the railway and its equipments will be seen in our engraving. The motor is precisely like one of Mr. Edison's electrical generators, figured and described in our columns some time since, and the motive power is supplied by his stationary engine, the power being converted into electrical energy by a single generator.

The current thus created is conveyed to the track by two copper wires, one wire being connected with each rail. The armature of the locomotive makes four revolutions to one of the drive wheels. The machine is managed about like a steam locomotive, and it pushes ahead with wonderful energy.

By invitation of Mr. Edison, representatives of this journal were present at a recent trial of this novel motor, and had the pleasure of riding, with some twelve or fourteen other passengers, at a break-neck rate up and down the grades, around sharp curves, over humps and bumps, at the rate of twenty five to thirty miles an hour. Our experiences were sufficient to enable us to see the desirableness of a little smoother road, and to convince us that there was no lack of power in the machine. Mr. Edison says that he realizes in the locomotive seventy per cent of the power applied to the generator. He will soon add four more cars, and apply improvements which he has in contemplation.

This grand experiment is designed to test the applicability of the electric current to this purpose, and to develop a railway system suitable for plantations, large farms, and for mining districts, and perhaps it is not entirely visionary to expect that our street and elevated railways may at no very distant day be successfully operated by electricity.

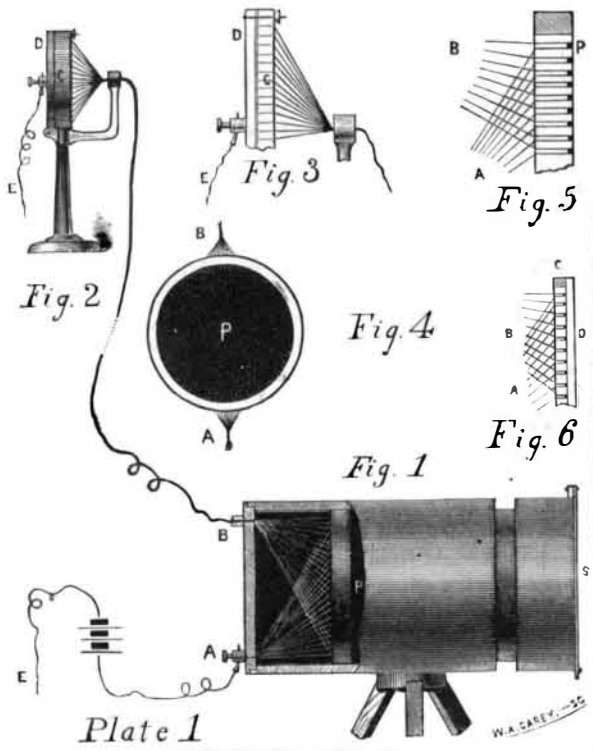
When the motor is complete and the road thoroughly equipped, we hope to be able to present our readers with further details.



EDISON'S ELECTRICAL RAILWAY.

SEEING BY ELECTRICITY.

The art of transmitting images by means of electric currents is now in about the same state of advancement that the art of transmitting speech by telephone had attained in 1876, and it remains to be seen whether it will develop as rapidly and successfully as the art of telephony. Professor Bell's announcement that he had filed at the Franklin Institute a sealed description of a method of "seeing by telegraph" brings to mind an invention for a similar purpose, submitted

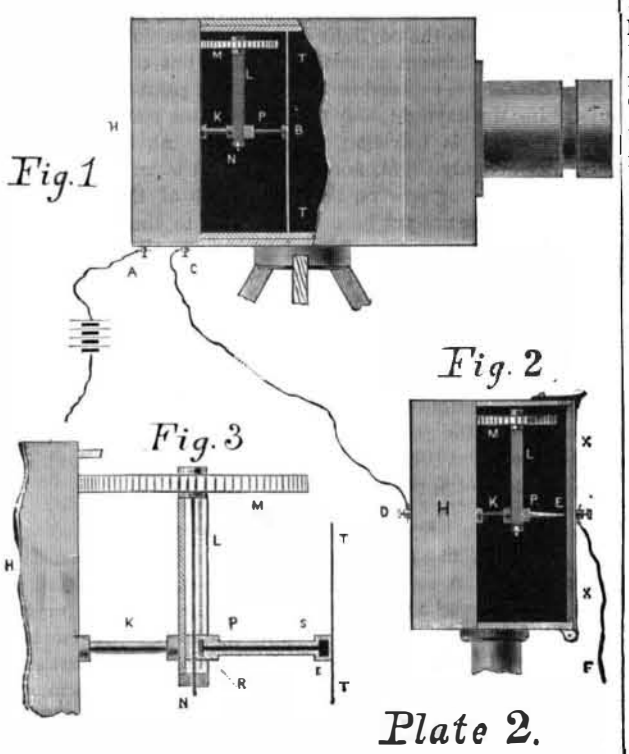


SELENIUM CAMERA.

to us some months since by the inventor, Mr. Geo. R. Carey, of the Surveyor's Office, City Hall, Boston, Mass. By consent of Mr. Carey we present herewith engravings and descriptions of his wonderful instruments.

Figs. 1 and 2, Plate 1, are instruments for transmitting and recording at long distances, permanently or otherwise, by means of electricity, the picture of any object that may be projected by the lens of camera, Fig. 1, upon its disk, P. The operation of this device depends upon the changes in electrical conductivity produced by the action of light in the metalloid selenium. The disk, P, is drilled through perpendicularly to its face, with numerous small holes, each of which is filled partly or entirely with selenium, the selenium forming part of an electrical circuit.

The wires from the disk, P, are insulated and are wound into a cable after leaving binding screw, B. These wires pass through disk, C (Fig. 2), in the receiving instrument at a distant point, and are arranged in the same relative position as in disk, P (Fig. 1).



INSTRUMENT FOR TRANSMITTING AND RECORDING IMAGES.

A chemically prepared paper is placed between disks, C and D, for the image of any object projected upon disk, P (Fig. 1), to be printed upon.

Fig. 3 is a sectional view of Fig. 2, showing wires and the chemically prepared paper.

Fig. 5 is a sectional view of disk, P (Fig. 1), showing selenium points and conducting wires.

Fig. 6 is a sectional view of another receiving instrument with platinum or carbon points, covered with a glass cap, there being a vacuum between glass cap, D, and insulating plate or disk, C.

These points are rendered incandescent by the passage of the electrical current, thereby giving a luminous image instead of printing the same. These platinum or carbon points are arranged relatively the same as the selenium points in Plate P (Figs. 1 and 4); each platinum or carbon point is connected with one of the wires from selenium point in disk, P (Fig. 1), and forms part of an electrical circuit.

The operation of the apparatus is as follows: If a white letter, A, upon a black ground be projected upon disk, P (Fig. 1), all parts of disk will be *dark*, excepting where the letter, A, is, when it will be light; and the selenium points in the light will allow the electric current to pass, and if the wires leading from disk, P (Fig. 1), are arranged in the same relative position when passing through disk, C (Fig. 2), the electricity will print upon the chemically prepared paper between C and D (Fig. 2), a copy of the letter, A, as projected upon disk, P (Fig. 1). By this means any object so projected and so transmitted will be reproduced in a manner similar to that by which the letter, A, was reproduced.

Figs. 1 and 2, Plate 2, are instruments for transmitting and recording by means of electricity the picture of any object that may be projected upon the glass plate at T T (Fig. 1), by the camera lens.. The operation of these instruments depends upon the changes in electrical conductivity produced by the action of light on the metalloid selenium.

The clock-work revolves the shaft, K, causing the arm, L, and wheel, M, to describe a circle of revolution. The screw, N, being fastened firmly to wheel, M, turns as wheel, M, revolves on its axis, thus drawing the sliding piece, P, and selenium point, disk, or ring, B, towards the wheel, M—see Fig. 3. These two motions cause the point, disk, or ring, B, to describe a spiral line upon the glass, T T, thus passing over every part of the picture projected upon glass, T T.

The selenium point, disk, or ring will allow the electrical current to flow through it in proportion to the intensity of the lights and shades of the picture projected upon glass plate, T T.

The electric currents enter camera at A, and pass directly to the selenium point, disk, or ring, B; thence through the sliding piece, P, and shaft, K, by an insulated wire to binding screw, C (Fig. 1); from this screw by wire to binding screw, D (Fig. 2), through shaft, K, and sliding piece, P, to point, E (Fig. 2); then through the chemically prepared paper placed against the inner surface of the metallic plate, X X, by wire, F, to the ground, thus completing the circuit and leaving upon the above mentioned chemically prepared paper an image or permanent impression of any object projected upon the glass plate, T T, by the camera lens.

Fig. 2 is the receiving instrument, which has a clock movement similar to that of Fig. 1, with the exception of the metallic point, E, in place of the selenium point, disk, or ring (Fig. 1), at B.

Fig. 3 is an enlarged view of clock-work and machinery shown in Figs. 1 and 2.

Oil in Allegany County, New York.

The Albany *Journal*, of April 22, reports that oil in paying quantities is being developed near Wellsville, in Allegany County, about forty miles to the northeast of what is known as the Bradford district in Pennsylvania. On Monday, April 19, an undoubted forty-barrel well was struck at a point less than three miles from Wellsville. It is near the Triangle Well, which has been flowing moderately for two or three months, and about six miles from the Pennsylvania line. The event causes great excitement in that locality, as the fact is now placed beyond doubt that the Bradford belt, as it is called, extends indefinitely in a northeasterly direction into New York State. The region between Olean and Wellsville is now in fair way of being developed into first class oil territory.

NOVEL ANIMAL MOTOR.

Animals have always been used as a source of motive power, but the machinery for utilizing this power has generally been of such clumsy and imperfect construction that

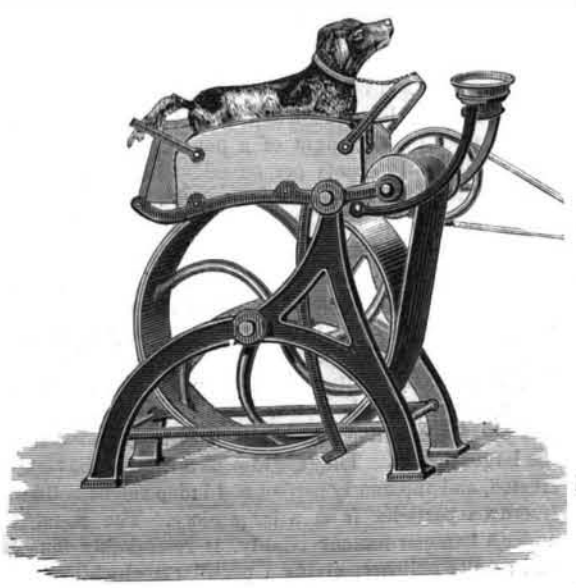


Fig. 1.—NEW ANIMAL MOTOR.

but a small percentage of the actual power was realized, besides making it extremely uncomfortable for an animal.

Mr. Richard, of Paris, has invented a very neat, practical and useful motor, which was exhibited at the last Agricultural Exhibition and at the Exhibition of Sciences Applied to Industries. The annexed cuts—for which we are indebted to *La Nature*—give a very good illustration of this novel motor. The animal, in this case a dog, is placed in a box or crib resting upon a shaft supporting the entire upper part of the machine. In Fig. 1 the animal is represented at rest, and the weight of the animal, maintaining its center of gravity, does not act upon the main driving wheel. But as soon as the box is in the position indicated by dotted lines in Fig. 2, that is, as soon as the tangent forms an acute angle with the vertical, the weight of the animal is sufficient to turn the wheel in the direction indicated by the arrows. The animal will naturally try to advance up the inclined surface, and will rotate the wheel by this action, as its weight continually acts upon the wheel. A fixed platform, E, is arranged below

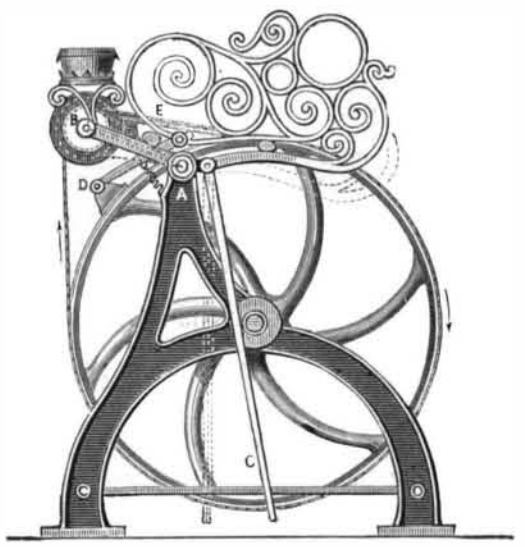
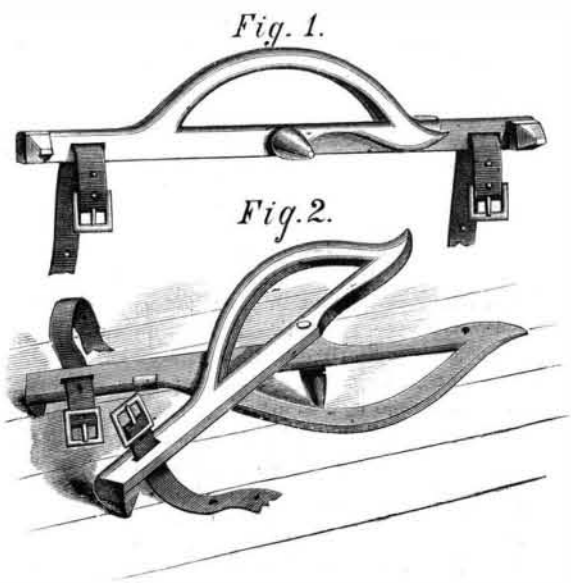


Fig. 2.—VERTICAL SECTION OF MOTOR.

at the side of the endless belt as a resting place for the animal, and a cup containing water is arranged in front of the box, so that the animal can drink while resting. Mr. Richard is a manufacturer of military uniforms, and runs a large number of sewing machines with his improved quadruped motor.

A NOVEL COMBINATION.

Americans are famous for making novel combinations, and it would seem that the last combination that would naturally suggest itself would be a shawl strap handle and a bootjack. Nevertheless we are able to present our readers with an engraving of an exceedingly simple and practical device that is peculiarly adapted to the double duty it is intended to perform. The device will be understood by reference to the engraving. Two similar castings are pivoted together, so that they may be arranged as shown in Fig. 1, when the device answers as a shawl strap handle. By turning the parts on these pivots, as shown in Fig. 2, the device forms a complete bootjack.



MARSDEN'S STRAP HANDLE AND BOOTJACK.

This novel combination is the invention of Mr. Mark W. Marsden, of Connersville, Pa.

New Brunswick Red Granite.

An inexhaustible supply of fine red granite, equal if not superior in quality to the famous "Scotch" granite of Aberdeen, exists in Charlotte County, New Brunswick. Several attempts to develop quarries have been made during the past decade, but, owing to lack of transportation facilities and other hinderances, they have generally resulted in failure. Latterly there has been a considerable revival of effort in the work of getting out and cutting the granite, and a still greater impetus is expected from the completion this summer of the railway from St. Johns to the frontier at St. Stephen and Calais, Maine.