### Varnish for Gelatine Negatives.

Collodion, by itself—even the ordinary porous collodion employed in negative work—answers admirably, says the *British Journal of Photography.* As a protection against damp its effect is simply marvelous; for, should the moisture penetrate it and reach the gelatine film, it possesses sufficient elasticity to withstand the strain put upon it. It exhibits little tendency to absorb silver from the damp printing paper, and in the event of actual moisture being accidentally present when in contact with the paper there is no fear of adhesion. For portraiture the film will bear working on with the pencil in retouching, though from its hardness and smooth surface it is usually desirable to use a "medium" to give a "tooth" which will take the pencil.

In preparing a special collodion for the purpose we should select a good, tough—not necessary "horny"—sample of pyroxyline, and use it of the strength of not more than four grains to the ounce, with two or three drops of castor oil. The best protective medium we have used consisted of a collodion made from celloidine, which gives a remarkably clear and structureless film, and may be used stronger than ordinary pyroxyline. Five grains of celloidine and two drops of castor oil to each ounce of solvents will answer well. There is a slight advantage in employing a small excess of ether over alcohol in dissolving—say nine parts of ether to seven of alcohol—both being as free from water as possible, and the negative very thoroughly dried before application.

### ELECTRO-MASSAGE.

A large portion of electrical treatment that hitherto could only be carried out by specialists by using elaborate apparatus, by the proper use of a new mode of treatment, by employing the apparatus shown in the engraving, can be intrusted to the hands of those who are not so skilled.

By means of this simple machine the manipulator transfers the mechanical motion used in rubbing the patient into an electrical current, and the current as it is generated is transmitted through the part while being rubbed, and it fulfills the requirements of a treatment including rubbing, kneading, pounding, flexing, etc., combined with the application of the electric current.

The instrument consists of a metallic roller covered with chamois leather or other suitable material, an electro-magnet, and a permanent magnet set in a strong frame, which holds the instrument together. The roller, besides acting

DR. BUTLER'S ELECTRO-MASSAGE INSTRUMENT.

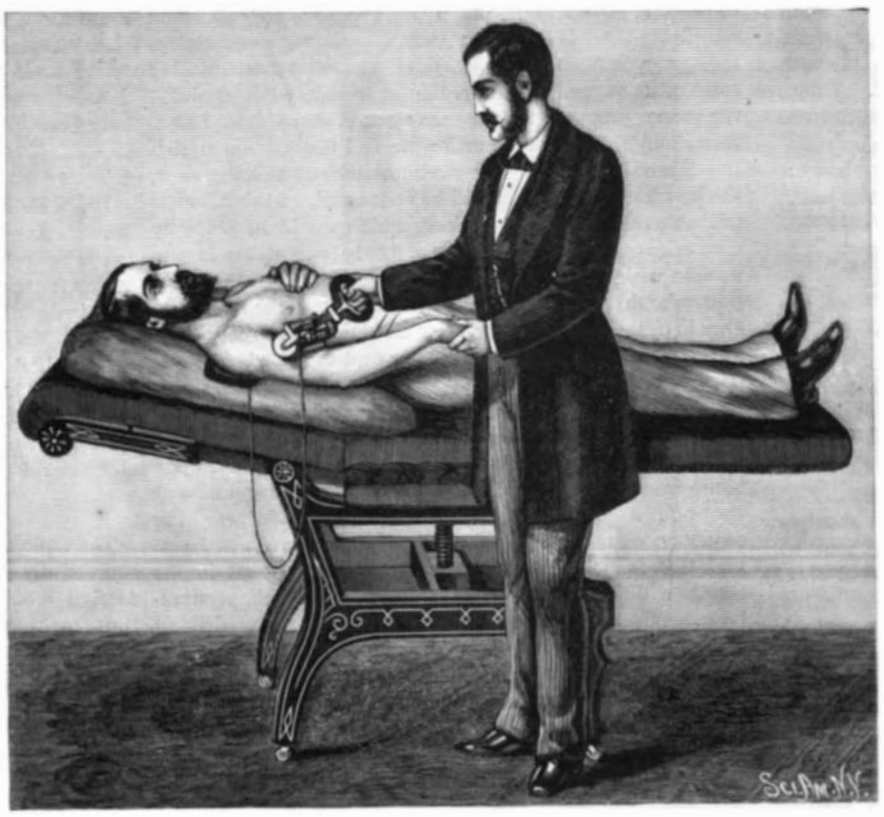
as the driving wheel of the machine, is so arranged that it also acts as one of the electrodes by which the current is transmitted, and is connected by gearing with the electro-magnet so as to cause the poles of the latter to revolve opposite those of the permanent magnet which forms the handle of the instrument. Each revolution of the roller produces twenty-five revolutions of the electro-magnet, which is magnetized and demagnetized at each revolution, and thus induces a current of electricity which is ample for all purposes for which it is intended. The circuit is completed by connecting any required electrode by the binding post at the side of the instrument, the roller acting as the other electrode; both are brought into contact with the surface of the body of the patient, and as the roller is moved about over the surface, the current is established and transmitted through the part over which the roller is made to revolve.

This machine includes in itself an electric generator, a rubber, kneader, a manipulator, and a set of electrodes, all in one. Any person of ordinary intelligence can be taught to use it under the direction of the attending physician. It is portable, being quite capable of being carried in an overcoat pocket.

The inventor finds in practice that it has far exceeded his expectations, inasmuch as by its use he gets greater tonic effects than from the employment of both faradism and massage separately. It fulfills most of the requirements of the induction current in general practice and every-day cases. As the current is generated by motion, no acids or liquids of any kind are necessary. The instrument is at all times ready for use, a matter that will be appreciated by all who use electricity.

This treatment has been used with great success in cases of nervous exhaustion, debility, neuralgia, rheumatism, paralysis, etc., and we are informed that it is recommended by the medical profession generally.

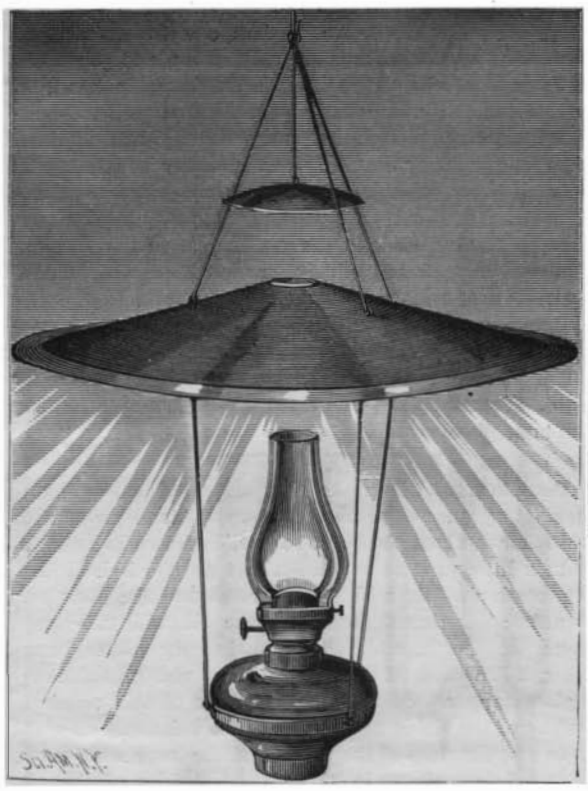
This invention has recently been patented by Dr. John Butler, of New York city. Communications in regard to the instrument may be addressed to the New York Dynamo-Electric Manufacturing Company, 907 Broadway, New York city.



PRACTICAL APPLICATION OF ELECTRO-MASSAGE.

### NEW REFLECTOR FOR SUSPENDED LAMP.

We give an engraving of an improved reflector for suspended lamps recently patented by Mr. John J. Smokey, of



SMOKEY'S LAMP REFLECTOR.

Natchez, Miss. It is designed to increase the effectiveness of lamps by throwing down the greater portion of the light and preventing the shadow of the body of the lamp. The lamp is suspended by chains from a wire loop which also supports the reflector, and above it a small concave plate for receiving the heat that escapes through the opening in the center of the reflector.

The reflector is made in the form of a low cone from two to five feet in diameter according to the size of the room to be lighted, and is placed from nine to thirteen feet from the floor. It is made from tin, brass, or copper, and nickel plated to give it a bright and permanent reflecting surface. The device is inexpensive and adds greatly to the efficiency of the lamp.

### The Bray of the Mexican Donkey.

The New Orleans *Democrat* recounts the many good qualities of the Mexican burro that has lately been introduced into that city as a child's horse, who, it seems, can banquet on splinters and scraps, carry immense loads, and is faithful, uncomplaining, docile, and tireless; but "we regret to say," continues the *Democrat*, "the burro brays. Amazing as is his strength, his stamina, his amiability, his courage, these things are as nothing compared to his bray. That such a tremendous and far-reaching sound should emanate from so small a source constitutes the eighth wonder of the world. When the little blue burro—they are nearly all blue—concludes to celebrate his scanty period of relaxation by a good, healthy, whole-souled bray—when he humps his little back, and shuts his appealing little eyes, and lets his ears lie along his back, and then gathers himself into one ecstatic note, it is enough to make one envy the sainted dead and long for the cold and silent grave. The sleepers for a mile around start up with the sweat of terror on their furrowed brows, children fall down in fits, the sick believe they have heard Gabriel's horn, and the very atmosphere shudders like a human creature. Burros don't often bray, because they haven't much time for braying; but they bray sometimes, and that is what keeps them so low in the scale of animated nature. Without his bray the burro would be little short of an angel. As he is, however, he is an animal to be admired at a distance and in the abstract."

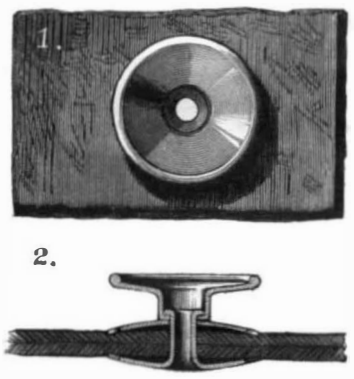
### Toughened Glass.

From the results of a large number of experiments it is found that the elasticity of toughened glass is more than double that of ordinary glass, and that toughened sheets bend much more readily than ordinary sheets. Single toughened glass has a resistance 2·5 times, and demi-double toughened glass a resistance 3·1 times that of ordinary double glass. Polished toughened sheets, of thickness varying from 0·006 meter to 0·013 meter, have a resistance 3·67 times as great as that of ordinary sheets of the same thickness, and the resistance of rough toughened sheets is 5·33 times that of ordinary rough sheets.—*De la Bastie.*

### IMPROVEMENT IN BUTTONS.

The annexed engraving represents an improved button recently patented by Mr. Oscar Ericsson, of Sioux Falls, Dakota Ter., and designed for various uses, but more especially for men's garments. It is strong, quickly and conveniently attached, and is inexpensive.

The head of the button has a tubular shank, which rests on a concaved and serrated clamping disk, and is clamped in place by the elongated shank of a similar disk placed on the opposite side of the fabric. This shank, as will be noticed, enters the end of the tubular portion of the button, and is set down after the manner of an eyelet upon an inter-




ERICSSON'S IMPROVED BUTTON.

nal flange, holding all three of the members securely in place, and clamping tightly the cloth of which the garment is composed.

### MISCELLANEOUS INVENTIONS.

Mr. William W. Batchelder, of New York city, has patented a novel article of manufacture which he calls a "continuous match," for the reason that the entire length or body of the match is made of the explosive compositions, which are so arranged as to flash at will without continuously burning.

The same inventor has heretofore patented devices for lighting the gas in which the lighting was effected by the union of two kinds of composition arranged in sticks side by side, which would not explode when separated in bulk, but when scraped up and mixed formed a pulverulent charge, which was exploded by friction.

The present invention comprises a novel and simplified device for carrying out this principle, which is designed to utilize a peculiar continuous match, which is constructed on the above-described principle Mr. Batchelder has applied the same device to cigar lighters. He has also devised and patented a novel attachment to be applied to a gas-burner for the purpose of lighting the gas or to be used in any other connection desired.

Mr. Charles H. Starin, of Brooklyn, N. Y., has patented an improved ash-sifter, which consists in a box with an inclined top provided at the lower end with a hinged door, and at the upper end with a chute closed by a balanced gate, through which the ashes are dropped upon an inclined sieve or grating, down which they slide, the ashes dropping into a box below the sieve and the cinders accumulating in the lower end of the box.

An improved combined ruler and rotary blotter has been patented by Mr. Arthur R. Hall, of Prompton, Pa. This invention relates to that well known class of blotters which rotate in a case and are sometimes made with a paper cutter in front and a ruler strip on the rear of casing. It consists in making the case of a strip of sheet metal extend in the rear to form a handle, and made with a straight-edge in front supported on two side flanges.