

SPIRIT SLATE WRITING AND KINDRED PHENOMENA.—II.

BY W. E. ROBINSON.

A favorite trick of mediums at séances is to procure a message from the unseen on the blank piece of paper which has been placed between two slates. The medium holds the slates high above his head, and on taking the slates apart the paper is found covered with writing. This again calls for the use of an extra, or false flap, as shown in Fig. 1. (See our last issue.) A piece of paper with writing on it is placed downward on one of the slates and covered with the false flap. Of course, it now looks like an ordinary slate.

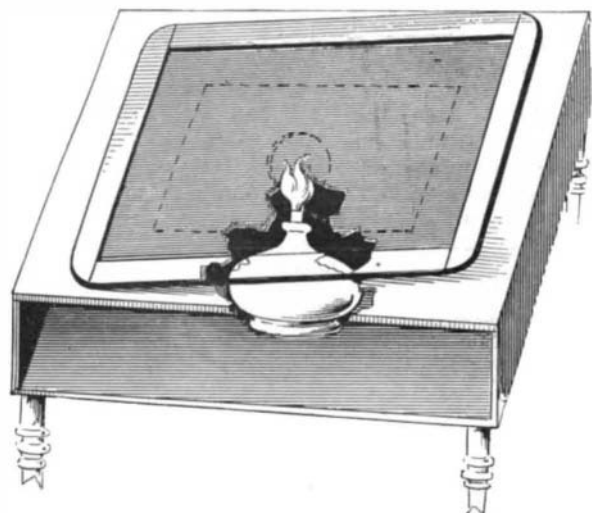


Fig. 4.—FALSE TABLE FOR DEVELOPING COMMUNICATIONS WRITTEN WITH SYMPATHETIC INK.

On this is placed the plain piece of paper, and over it is placed the second slate. The slates are now held up, and, on being lowered to the table, they are reversed, thus bringing the blank piece of paper under the false flap and the one with the writing on it on top of the flap which has fallen from the slate. On the removal of the top slate, the writing is found on what is supposed to be the original blank paper.

If the paper is to be privately marked by those who attend the seances, so as to make sure that the writing really appears on the piece of paper selected, another method must be employed, and the aid of the so-called "sympathetic ink" is invoked. Sympathetic inks are of various kinds, some appearing through the aid of a reagent and others through the agency of heat. The latter method is usually employed by mediums. The writing is done with dilute sulphuric acid, which is made weak enough so that the paper will not be destroyed. The heat required to develop the writing is obtained from a spirit lamp, which is concealed in the top of the table. The lamp is set directly under a trap in the table top. When the slates are placed on the table, they are laid over the trap, which is opened and the slates allowed to become well heated. The trap is then closed, and the prepared paper, upon coming in contact with the hot slate, is covered with writing.

Another method to produce spirit writing is to place a wide mouthed bottle over the trap. A piece of paper is put into the bottle, which is corked and sealed, and the writing makes its appearance after setting the bottle over the small trap in the table so that it receives heat from the alcohol lamp.

Unfortunately for the medium, he does not always have an audience that is willing to take the manifestations on faith. Some of the people who come to the seances insist on bringing their own slates. The medium takes the slates, which are tied and sealed by skeptics, and has no difficulty in obtaining writing upon them. The result is that it furnishes the most positive proof of spirit power to the unbeliever. Let us suppose that the spectator brings a thoroughly clean slate and holds one end of the slate in one hand and the medium the opposite end, and both persons clasp their disengaged hands. In a short time the slate is turned over and a few words are found written in a scrawling hand. The secret of this phenomenon will be readily understood by referring to

Fig. 5. A piece of slate pencil is fastened to a thimble and this is attached to the medium's fore-finger of the same hand which holds the slate. The thimble is fastened to an elastic which goes up the sleeve, so that, the instant the writing is concluded, the thimble is pushed off with one of the fingers and disappears up the medium's sleeve. There is always considerable danger of detection to the medium in using this device;

so that the method shown in Fig. 6 is adopted by some mediums. A tiny piece of slate pencil, no bigger than a pencil lead, is placed on the tip of the forefinger, and over it is secured a piece of flesh-colored court plaster. The finger is painted with aniline or other colors, so that the line of demarkation between the court plaster and the flesh is eliminated. After the court plaster has set, a small aperture is made in it, so as to allow the point of the pencil to come through far enough to be able to mark on the slate. The writing is done with this prepared finger. The message must be written backward, so that when the slate is reversed it will appear in its correct position. The message must necessarily be short, on account of the limited distance which the medium's finger can travel.

A Course in Railway Mechanical Engineering.

Cornell University has always been in the lead in the introduction of novel and eminently useful courses, and now one more course has been added. It is called the Graduate School of Railway Mechanical Engineering, and, of course, it comes under the Sibley College of Mechanical Engineering, of which Dr. Thurston is the Director. The school was organized in February, 1898. Its purpose is to concentrate and systematize the work in the mechanical engineering of railway machinery previously constituting a subordinate part of the existing courses, and to offer special instructions to students who have completed a general course in technical institutions of high rank, and, furthermore, to members of the engineering profession desiring special knowledge in this field. For all such, in addition to instruction in this department of engineering, immediate practical value courses of work are also available in other departments of the college and of the university. The courses in the school will have special relation to the design, construction, operation, and maintenance, and the test trials of locomotives and other kinds of machinery employed in railway operation. They will be particularly adapted to the needs of the engineer seeking to find his way into the departments of construction of railways, and ultimately into the positions of superintendent of shops and of motive power. In addition to the courses offered in Sibley College as purely professional, there will be found in the scheme of the special courses leading to advanced degrees opportunities of pursuing work in economics, in law, and in allied professional and scientific departments. The school will so arrange its work as to connect closely with the undergraduate work of Sibley College. Students in the undergraduate courses may begin to specialize in their junior year and to increase considerably this specialization in their senior year. The principal of the school is Prof. H. Wade Hibbard. He has been well known in the railroad world since his graduation from Brown University, thirteen years ago.

FATE OF STERNWHEELERS DESIGNED FOR THE YUKON.

Of the forty sternwheel steamers designed for navigation of the Yukon River and which have attempted the ocean passage, only about eight, or one in five, have been successful. The larger number of these ves-

been great, as they are always accompanied by an ocean steamer, upon which the passengers in time of danger have been transferred, or else the boats have been so near port as to enable them to return before being completely disabled. There are now about sixty sternwheelers navigating the Yukon, most of which have been constructed in the lower ports, their timbers then being taken apart and carried to St. Michael's and there set up.

The last attempt to sail sternwheelers by the ocean route was made at Astoria, Oregon, some weeks ago, when two, in every respect equal in size and power, started for Alaska, filled with passengers and weighed

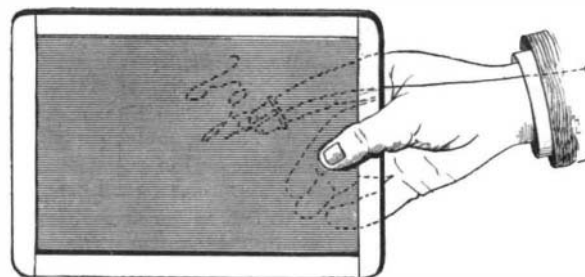


Fig. 5.—WRITING ON THE SLATE WITH THE PENCIL THIMBLE.



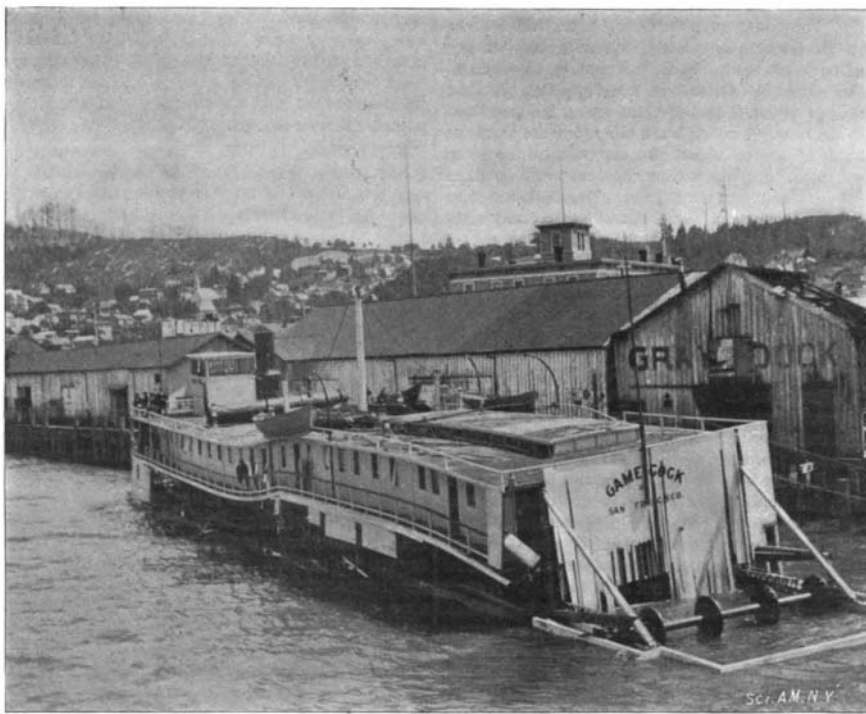
Fig. 6.—THE PREPARED FINGER.

down with freight. They had been built in Portland and were advertised as being staunch and seaworthy. They were about 125 feet in length and were rated at 300 tons. They were fitted with all the conveniences for travel, electricity, hot water, etc., and each one had over a hundred passengers. They were named the "Game Cock" and "Stag Hound," and cost altogether \$125,000. They were accompanied by the steam collier "Elihu Thomson" and left port with every prospect of a fine voyage. It was only a few hours afterward these same steamers returned in the condition shown in the photograph. The great swells off the Columbia River bar had proved fatal. At the first essay both boats were wrecked and were only prevented from sinking by the fact that before starting every particle of space had been utilized for storing wood for the boilers. By great good fortune the two succeeded in reaching port, where they were photographed for the SCIENTIFIC AMERICAN.

A Brave Deed.

Few readers are aware that our warships carry boiler makers who are often called upon to perform perilous repairs, and, in cases of emergency, these men go inside of the boiler or furnace, which but a few minutes before had been filled with boiling water or red hot coal. There is no task too dangerous for these men to do. One of them undoubtedly saved the "Castine" from destruction in the harbor of San Juan. The "Castine" went into action under full speed. The furnaces were heated to the highest degree, forced draught being used. Without warning, a fierce hissing noise was heard inside one of the furnaces. A socket bolt in a back connection at the farthest interior extremity of the furnace had become loose, springing a leak. The steam was pouring in upon the fire, threatening in a few minutes to put it out and stop the progress of the vessel, if it did not cause a terrific explosion. All in the boiler room knew that, unless this hole was stopped, disaster was at hand. One of the boiler makers, named Huntley, ordered the forced draught turned off and the fires banked. Taking a plank, he threw it into the furnace on the top of the wet, black coal with which the fire had been banked and then climbed far back to the place where the steam was rushing from the loosened socket. For three minutes he remained inside the furnace. His friends drew him out of the door: the forced draught was turned on, and in a few minutes the ship was proceeding on her way as though nothing had happened. In view of such deeds as this, there is little wonder that the engineering corps in our navy is receiving the highest praise on every side.

THE faintest stars visible to the naked eye are of the sixth magnitude; the faintest telescopic stars are reckoned of the sixteenth or seventeenth magnitude.



STERNWHEEL RIVER STEAMER WRECKED BY GROUND SWELL IN ATTEMPTING OCEAN PASSAGE TO ALASKA.

sels have sailed from Seattle and kept to the inside route, along the coast. Several attempts have been made also from Portland and San Francisco, but with the most disastrous results. The experience almost invariably has been that frail, light draught steamers of this character cannot withstand the great ocean swells, and, in a vast majority of cases, collapse. Fortunately the loss of life in these catastrophes has not