

An Obscure Phenomenon in Psychology.

A few months ago a writer in this journal gave us a collection of facts illustrating the existence of what he called a "mental atmosphere." Such facts are of much more psychological importance than they are usually deemed. Indeed, most scientific writers fear to speak of them, lest censure for too great credulity be their reward.

This was long the case with mesmerism, until it was investigated by Dr. Carpenter, and then it proved a valuable means of furthering the study of mental phenomena, and led to the discovery, or at least the correct understanding, of the automatic cerebral action. This interesting function of the mind is closely connected with more recondite powers by which the brain, or rather the action of the brain, its rhythmical workings, become in some yet unknown manner in accord with workings of other brains, so as to lead to the rise of the same idea in two minds. If, with Fechner (still the best authority on all psycho-physical questions), we regard thought action as the manifestation of a series of vibrations subject to mathematical laws akin to those which govern the senses of sight and hearing, then the explanation which suggests itself to these instances of persons *en rapport*, or *clairvoyant*, is that the thought vibrations are detected by the consciousness as isochronous with those in another mind, somewhat as a musical ear will detect concord between the pitch of two sounds, when ordinary persons cannot.

But we care less just now to substantiate this theory than to illustrate the facts for which we are seeking explanations. Two remarkable and well attested instances have been laid before the profession in the last few months, in the pages of the *Chicago Medical Journal*, in the numbers for June and September.

The first is related by Dr. George W. Kittell, of Shabbona, Ill. A young lady cut her head severely with a pane of glass, imbedding a number of small fragments in the wound. It was not attended to properly at first, and in a few months "the pieces of glass actually removed, from the crown of her head to the soles of her feet, were numbered by thousands." This looks very much like one of those aggravated cases of hysterical dementia which, in their love of self-inflicted suffering, have always been the puzzle of the wise and the wonder of the vulgar. In this wretched condition she survived from 1865 to December 1872, when death from exhaustion super-vened.

The part of Dr. Kittell's description we wish to call attention to is the following:

"One curious phase in her history should be noticed. I refer to clairvoyance.

"In this case it was not produced by mesmerism, but by chloroform, and she became more and more susceptible to its influence. In the latter stages of the case, this state came on occasionally from over excitement.

"Before the accident which introduced the case, she was given chloroform for the purpose of having a tooth extracted. The doctor who administered it had not always kept that moral rectitude, in some particulars, which becometh a physician. Shortly after the inhalation commenced, she began to upbraid him for his conduct. The doctor was frightened, and accused a man, the only one beside himself who knew the circumstance, of telling. The man protested he was innocent, for he really was. When Miss Low returned to consciousness she knew nothing of what she had said, or of the occurrence she had related.

"My first knowledge of this effect of chloroform on her came in this way: After removing some glass one day, and while she was still under the influence of the anæsthetic, I was called out for a private interview. The weather being pleasant, we stepped into the orchard and sat down under a tree. When I returned she remarked 'you thought yourself very 'cute when you went into the orchard to talk; but I heard it all.' I then asked her to tell what she heard, and she related our conversation correctly. She had not left the bed in my absence, and could not see the orchard, as it was on the other side of the house. In fact, she was apparently unconscious the whole time; and when she had fully recovered from the influence of the chloroform, she knew nothing of what had been done or said. I had known her to say strange things while anæsthetized, but till now had not understood it.

"Sometimes, after having taken chloroform, she would rise in her sleep and go miles, in her night clothes, to find articles that had been lost. She never had any knowledge of these nocturnal expeditions in her waking state, except the proof afforded by the presence of missing articles, and the condition of the bed in the morning.

"Her clairvoyant state was another existence to her. When in this state she would tell anything that had transpired at other times, while in the same condition. I have given her chloroform in enable her to find lost articles, which she could always do. Some little thefts, and sometimes bigger ones, were made known in the same way.

"When very sick she was often delirious, sometimes for hours, which led many people to suppose she was insane, and some said she was possessed of the devil. It was from this fact that the horse thieves escaped punishment; many would take oath in court against her sanity. She was the principal witness; and popular prejudice, backed by some physicians for no laudable purpose, carried the day.

"To relate all that she said and did, while clairvoyant, would make a long and interesting chapter. The most interesting occurrences of this kind must be omitted because of their length. If any doubt is entertained as to the truth of these statements, any further proof desired will be gladly furnished by the author."

An example, not dissimilar in kind, but furnished by a

young man in perfect health, is given in the number for September, by Dr. Henry M. Lyman, Professor of Chemistry in Rush Medical College, Chicago. The person was Mr. Brown, known as the "mind reader," twenty-one years of age, sound in body and mind. He exhibited his peculiar power by finding, blindfolded, any object which Dr. Lyman secreted in an adjoining room. To do this, he was obliged to be in physical contact with the person who had secreted it. He did not pass into a condition of trance, but claimed to be guided by a sort of subjective appearance of light. His power varied with the temperature and with his own feelings. It depended also on a distinct knowledge of the whereabouts of the article, on the part of the person who conducted him.

Though neither of these examples present novel features, they are valuable because carefully established by competent observers. The deductions from them clearly include the position that the function of cerebration can be stimulated and directed by other means than those ordinarily considered exhaustive. The thought vibrations are not bounded by the superficies of the body, nor by the peripheral extremities of the nerves, but are continued beyond in space, doubtless under some law of decreasing intensity, until, perhaps, they are metamorphosed into some other form of motion, or else become extinguished.

Certain brains, usually but not always in abnormal conditions, are impressed by these vibrations with sufficient force to cause the cerebral action to rise to the level of conscious thought, and hence this singular power of "reading the thoughts of others." The physiological laws which are here involved are those especially which explain the phenomenon of consciousness; and as these are of very extended bearing in other branches of psychology, we shall defer entering upon them until some future occasion.—*Medical and Surgical Journal.*

The New Daily Newspaper.

Inter Ocean, of Chicago, congratulates itself on its already large daily circulation, having increased 25,000 copies during the past ten months, and adds that its regular edition fills eighty large mail sacks. Our contemporary modestly disclaims the honor of its success and virtually ascribes it to the favor of the people; but it seems to us, at least so far as our own experience extends, that the people are not in the habit of converting journalistic enterprises into success unless there be overwhelming reasons, which in fact prevent their doing anything else. Hence, even at the risk of offending its modesty, we are obliged to take issue with *Inter Ocean*, and to assert that, unless it had been edited and managed in the very admirable manner which has characterized it in the past and at present, its popularity might still be an affair of the future. At all events, we congratulate our contemporary upon its prosperity, and cordially wish it the brilliant career to which, from its excellence as a journal, it is fairly entitled.

DECISIONS OF THE COURTS.

United States Circuit Court—District of Massachusetts.

RUBBER WRINGER PATENT.—JAMES B. FORSYTH vs. CHARLES M. CLAPP et al. SHEPLEY, J.

Without at this time stating the conclusions to which the court arrived in relation to several questions presented in this case, it will be sufficient for the disposition of the cause to state the decision of the court upon the question of infringement. For a proper consideration of this question, it is necessary to consider the state of the art at the time of the alleged invention of Forsyth.

Rubber rolls for wringers were first made in the form of tubes or hollow cylinders extended on to a plain shaft. Then attempts were made to secure the roll more firmly to the shaft, first by winding the shaft with wire and afterward with twine. An effort was made to secure a more lasting union to the shaft by forcing the tube upon a heated shaft. Next followed a mode of making the shaft itself of two or more parallel rods. The rubber rolls first made with a number of holes corresponding to the number of rods were forced on to these rods which were then connected at their extremities. Canvas was also interposed between the shaft and the roll and cemented to both. Various other devices appear to have been resorted to for the purpose of fastening more firmly the tube to the shaft. The purpose of all these inventions was to make a more perfect connection of the elastic roll with the metallic shaft.

The difficulty which Forsyth thought he saw, and which he claimed had not been obviated by any of the other devices, was not so much the separation of the roll from the shaft, at the lines or points of connection, as the tenacity of the strain on the rolls when in use to a destruction of the body of the roll itself. His theory was that, while the connection of the shaft with the homogeneous body of the roll constricted on to the shaft, was sufficient for all practical purposes in the use of a wringing machine, the real difficulty to be overcome was that the particles of rubber in contact with the shaft separate and tear away from the rest of the rubber composing the body of the roll. He acted upon the hypothesis that, while the various connections of the roll with the shaft were sufficient to withstand the strain, a portion of the body of the roll would break away from the portion remaining in contact with the shaft by the process of disruption or rending asunder of the body of the roll itself. He commenced, thereupon, a series of experiments, the object of which was to substitute for the homogeneous rolls in use a roll with a tougher, stronger, and less elastic substance in the interior than in the exterior portion of the roll. After trying various methods to accomplish this result, by the addition of fibrous or non-elastic material to the stock of which the interior of the roll was composed, he finally constructed a roll with fibrous material arranged in the interior portion of the tubular roll in a manner which, in an expression approximately descriptive, he calls radially. A sheet of cloth, with a thin layer of vulcanizable compound on each side of it, is first cut into long strips, "bias" or diagonally across the threads or fibers of the cloth. Several of these long strips are placed upon each other and pressed together until the layer of vulcanizable compound are cemented and permanently united. The sheets thus formed are cut into strips or bands of suitable width to admit of their being easily wound on a mandrel, or the shaft of a roll, in such a manner that the fibers of the cloth will radiate from the mandrel or shaft. As shown by the drawing accompanying his specification, it is obvious that each thread would thus extend from the interior to the exterior of the fibrous portion of the roll in a curved radial line, the threads crossing each other, and such threads being nearer together at the core or axis, and separated further from each other as the distance from the core or axis increases. The roll is then made up to the desired size by winding rubbersheets around it coated with cement, when it is placed in molds and subjected to the vulcanizing process, the use of its soles and plastic state filling up all crevices around and between the layers and incorporating the parts together. In this way it is claimed that "the tenacity of the roll and the degree of adhesion of the parts are much increased," and the position of the fiber is better adapted to resist any tendency of the roll to become loose and turn on its shaft when subjected to a strain.

Charles McBurney had invented and manufactured at the works of the Boston Belling Company a tube substantially, if not precisely, like the tube of Forsyth. No appreciable material distinction can be discovered between the modes of making the McBurney and the Forsyth tube, or in the tubes themselves when made on a mandrel. McBurney's tubes and their mode of manufacture are represented by exhibits ten to fourteen, inclusive. These tubes were made of all sizes, from three quarters of an inch to an inch and a half thickness of tubing, and sold in tubes to consumers. The purchasers cut them in sections or rings for stuffing boxes. Such a tube constricted on to a shaft would be Forsyth's roll. Forsyth does not describe any particular mode of connecting the tube with the shaft. He leaves that to be effected by any of the old and well known processes in use. All that can with any show of reason be claimed for his roll is the combination of an old tube with an old shaft in a mode which was old to accomplish a new and useful result.

Treating it as a valid patent for this new combination of an old shaft with an old tube by old means of connection, for the purpose of considering the question of infringement in the light of the state of the art as existing when he made his roll, we now proceed to examine the construction of the Moulton roll as made up and used upon a wringing device.

Ribbons of the desired width at right angles to the length of the strands. The ribbons are folded in the center, and a metallic wire is inclosed in the fold and wound spirally about the shaft, under great tension, from end to end between the journals, the wire being fastened to the shaft at each extremity. A cylinder or sleeve of rubber is applied over the surface, and the whole is subjected to a vulcanizing process until the whole mass of the roll is thoroughly compacted together. The wire is so tightly wound under pressure that it, in fact, becomes a part of the shaft. The fibrous threads are, in fact, loops which pass in for one side and out at another in the metallic shaft, their ends extending strictly radially into the body of the roll.

There is a radical and obvious difference in the function of the fibers in the two rolls. Their similarity consists in the fact that the fibers in one are arranged in curved radial diverging lines, extending in a direction toward the periphery of the roll, and in the other in radial lines extending in the same direction. In both the effect of the fibers is more or less to diminish the elasticity of the interior portion of the resilient roll; but in the Moulton roll, as made by the respondents, not to any material or scarcely appreciable extent. Their difference consists in the function they perform. The inner ends of the fibers in the Forsyth tube touch or nearly touch the shaft. They do not fasten the rubber compound to the shaft, or aid in fastening it. The ends of the fibers themselves are not fastened to the shaft except so far as they are cemented by the vulcanizable material. The vulcanizable material holds the ends of the fibers up to the shaft instead of the fibers performing that function for the vulcanizable compound. The inner ends of the fibers in the Forsyth roll were attached to the rigid portion of the roll resting upon the shaft, and the outer ends extended from this rigid portion toward the circumference of the roll, thus tending to secure the adhesion of the part of the roll to each other, at which he aimed, as well as to limit the mobility of the rubber in which they were aimed. If McBurney's tube, or Forsyth's, be constricted upon a shaft which is too small, or insufficiently cemented or connected to the shaft by any of the then existing modes of connection in an imperfect manner, so that the shaft turns in the tube, that result would not be owing to the fact that the fibers of Forsyth failed to perform perfectly their function of confining the rigid portion of the roll to the more elastic portion of it, and of limiting the mobility of the rubber in which they are buried. So, when the roll is subjected to strain by the passage of the sliver of cloth between the rolls of a wringer, causing the outer surface to be compressed in one place and expanded in others, the fibers in the inner portion of the Forsyth roll do undoubtedly tend to prevent the body of the roll from being separated from the shaft; but they do not effect this result by reason of their attachment to the shaft preserving the connection between the shaft and the rubber, but by reason of their acting at the same time to preserve the form of the inner and more rigid portion of the tube, and keep up the adhesion of such parts with the outer portions where the mobility and resiliency is greater. Perfectly as the fibers may perform this function, a tube imperfectly cemented to the shaft may perform this function, for that reason alone, in the Forsyth roll. Now, the loops or bows in the Moulton fibers enter the shaft, and the ends of the fibers extend like "staples" (which they resemble in form) into the body of the roll, for the purpose of securing the interior of the resilient body to the shaft. The fibrous loop is to be taken as a whole, and not as the fibers which extend from the interior toward the exterior of the rubber roll would operate in a radial direction, if the shaft without the loops. By none of the methods in use at the date of Forsyth's patent, of making the connection between the shaft and the rubber, was the connection made any more tenacious by presenting the ends of the fiber to the surface of the shaft. In some of them the presence of the ends of the fibers lessen the adhesion by as much as it displaced the rubber. The principal function of the fibers in the Forsyth tube, as the respondents state, is to make the inner portion of the tube more rigid, and to tie the more rigid to the more elastic portion of the tube. Now, in the Moulton roll, as manufactured by the respondents, the principal function of the fibrous loops is to tie the rubber to the shaft, and they do not create any material rigidity in the interior portion of the tube. The method of fastening in the Moulton roll is an invention of its own kind, and of itself, being necessarily constructed and built up with the roll and constituting the inner portion of the roll. It is not adaptable to Forsyth's tube, nor is Forsyth's tube capable of having Moulton's fastening applied to it. Because Forsyth borrowed from McBurney his method of constructing the interior of a tube with fibers of cloth arranged in radial curves, it would be the height of injustice to allow him to monopolize any use of fibers for any purpose whatever in a wringer roll, if the ends of the fibers extend in a radial direction into the body of the roll. His renewed patent, examined in the light of the invention described in the original patent, if valid, must be limited to such a mode of introducing the fibers of a woven texture radially into the tube for the purpose indicated, without regard to the mode of fastening to the shaft.

The court will look beyond the mere form of words in the claim of a renewed patent, and even if the words of the renewed patent do not embrace anything not described or suggested in the original, never less, the court will ascertain whether there is any substantive invention adequate to support a claim ingeniously worded, not so much for the purpose of describing what the patentee really invented as of grasping within its terms some contrivance not within the knowledge or contemplation of the public, and for that reason, not by reason of inadvertency or mistake, not embraced in the claims of the original patent.

Comparing the two rolls, as we have done in some more essential particulars, and without recapitulating other points of difference, enough has already been stated to show that, so radically different is the structure of the rolls, and the function of the fibrous material, and its mode of operation, that the Moulton roll, as manufactured by the respondents, is clearly no infringement upon anything secured to Forsyth by his renewed patent, even giving to the invention claimed in that patent the fullest scope claimed for it in the evidence of Forsyth himself and the expert testimony introduced by him.

Bill dismissed.
[William Whiting and James E. Mawndier, for complainant.
Benjamin R. Curtis and George L. Roberts, for defendants.]

Recent American and Foreign Patents.

Improved Cigarette Machine.

Joseph De S. Rutseco, Paris, France.—In using this machine, the tobacco is placed in a receiver above a distributing apparatus, which causes a gaged quantity of tobacco required for a cigarette to drop down to a compressor beneath, by the compressing action of which the tobacco, being rolled up is inserted afterward into a paper tube ready to receive it, by means of a peculiar device. The paper sheets are laid into a rectangular box of the like section to the surface of the cigarette paper. A piston is constantly acting on the heap of sheets, and compels them to lean against a plate which is called "a hand," forming one end of the box, and intended to catch them one by one, and carry them to the rolling rod, whereby the same are formed into tubes. The paper sheet is rolled up within a cylindrical tube or mold, split through one of its generating lines, which split one edge of said sheet enters, and is caught by the rolling rod, that is set rotating within the said mold. The lower end of the rolled up sheet is, together with the mold, carried up to the compressor containing a roll of tobacco which is then, by another rod, driven into the paper tube. The mold moves anew and presents the rolled sheet containing its tobacco, and having its lower end folded up, to the action of the upper end folders, when the cigarette is completed, and the mold returned to its starting point, or under the rolling rod. On its entering the mold, the rod drives out the made cigarette, and gets hold of a new sheet, which undergoes the very same operations as the foregoing one. From what has been said, the making of a cigarette consists of three different operations, effected simultaneously with three different molds, so as to obtain a threefold speedy manufacturing action. The first operation consists in taking a sheet, rolling it, and folding the lower end thereof. The second operation consists in introducing the tobacco into the paper tube thus formed, and the third and last operation consists in folding the upper end.

Improved Spring for Chairs.

William T. Doremus, New York city.—This invention has for its object to furnish an improved spring for use upon articles of furniture, which shall be readily adjusted to give it any desired tension. The invention consists in an improved spring, formed by the combination with each other of the two rubber blocks, between which is placed the middle part of a U-shaped bar. Another U-shaped bar is passed between the arms of the bar above mentioned, and thus passes around both the rubber blocks. A yoke passes along the upper side of the upper block, and the various parts of the spring are connected and held in place by two bolts which pass through the yoke through notches in the ends of the rubber blocks and through the middle part of the U bar. By this construction, by tightening and loosening the nuts of the bolts, the tension of the spring may be regulated as required. Suitable construction adapts the spring for use in connecting chair seat to its pedestal.

Improved Harrow.

Milas K. Young, Glen Haven, Wis.—This invention consists of a couple of pulverizing bars in front, four, more or less, bars with knives or teeth behind them, and a wide pulverizing bar behind the toothed bars, all connected together a few inches apart by chains, to be drawn sidewise over the surface. The toothed bars are arranged obliquely to each other to give side draft to the teeth or cutters, to some extent. The knives incline from the front backward so as to rise upon the clods, etc., and cut them by pressing downward; but they can be made to point forward and downward and be used like a colter by reversing the bars.

Improved Means for Propelling Vessels.

John O'Neil, New York city.—This invention relates to improvements in the class of propellers for med of oscillating paddles; and it consists, chiefly, in the arrangement of the upper pivot for the slotted stems of the paddles to shift forward or backward of the vertical plane of the crank, so to hold the paddles in such manner that they dip vertically into the water and thus save the loss of power due to beating it obliquely.