

**MACHINE FOR CARDING BUTTONS BY ELECTRICITY.**

Machinery is every day taking the place of the workman in the industrial arts; everything is done automatically, even the most complicated operations, which one would suppose could only be accomplished by hand. Inventors now have another source besides mechanics to which they can appeal, namely, electricity, which enables them to solve many problems which, without it, would remain unsolved. We have an example of this in the curious machine represented in our cut, and which makes use of the properties of the electro-magnet. It is designed for stamping shoe buttons in lots of three or four dozen, on cardboard sheets, for commercial uses.

The buttons are placed on an inclined plane, A, shaped like a fan and provided with grooves which at the lower end are large enough to receive only a single button at a time. The inclined plane is kept in state of vibration, causing the buttons to descend; but at the lower end of the grooves they are stopped by a grating, B, mounted on a cross bar. The cardboards destined to receive the buttons are held one behind the other by little hooks on two leather bands, DD, mounted on actuating pulleys like an endless belt. These slip along the table (the front part of which has been broken away to show the construction), and carry with them the cardboards. In this manner these are brought underneath the inclined plane and over the electro-magnet, E, the pole of which, M, is shaped like a comb, with its teeth so arranged that each one of them will be located immediately under a groove through which the button is delivered.

The machine operates in this manner: Power is applied through the grooved pulley shown at the left. By means of cams on the shaft of this pulley the cross bar and the grating, B, are raised at equal intervals to allow a row of buttons to pass through, when they immediately fall again.

The buttons are received by the cardboard, which passes underneath them, and at that moment a current is passed through the electro-magnet, E, each tooth of the pole, M, attracts the metal loop of the button which is opposite to it, and holds it in a vertical position with its head raised and with its loop pressing against the cardboard. The cross bar, C, which is actuated by the eccentric, F, under the action of a strong spiral spring, descends at that moment and presses on the heads of the buttons, forcing the loops through the cardboard, where they thus become firmly fixed.

The electric current is then broken and the leather belt advances a certain distance, determined by the space it is desirable to have between the rows of buttons. The belts are actuated by the ratchet, H, mounted on the shaft of the pulleys, DD, which operate at certain regular intervals as soon as the cross bar, C, commences to rise.

When one card is filled, by a special arrangement the ratchet is made to revolve several teeth at a time, so as to carry the next card without delay under the grooves which carry the buttons.

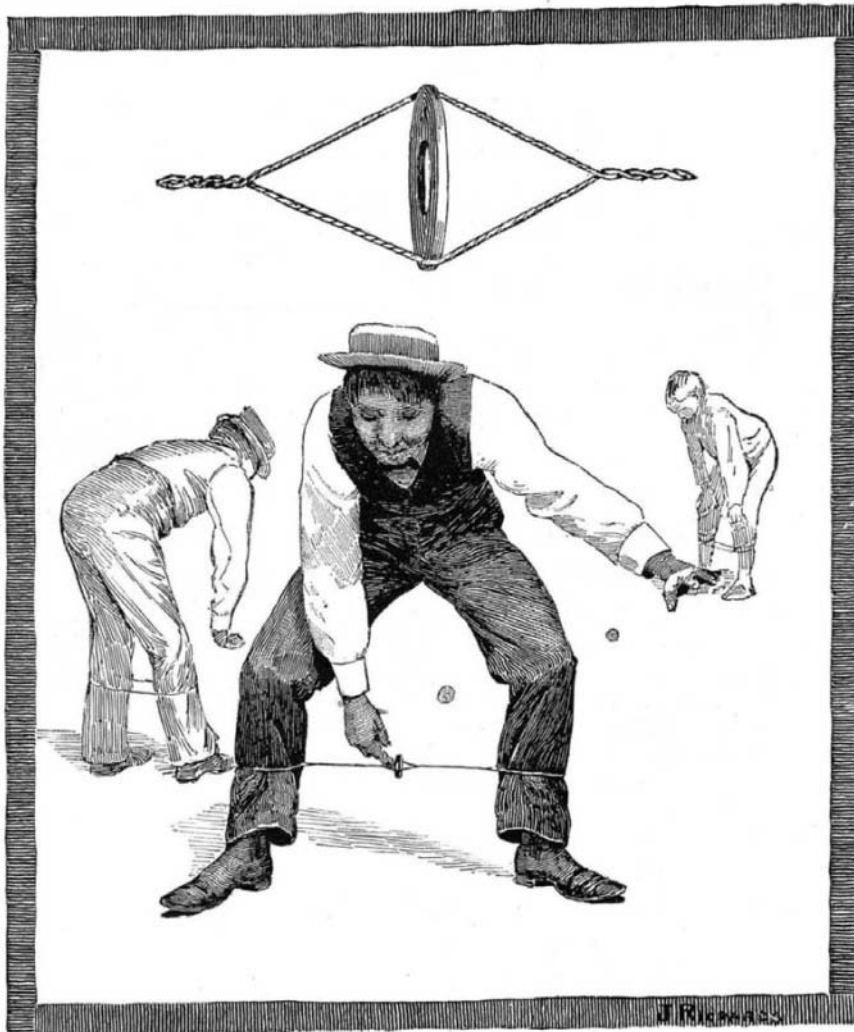
One workman is employed for placing the buttons in A, and according as the leather belts advance, to place the cardboards at the back part of the table and to remove those at the front part that have been already filled.

It is very interesting to watch this machine in operation. It was constructed by Mr. Olagner, at the button factory of Messrs. Rosenwald. At the last exposition at the Palais de l'Industrie in Paris, visitors were always interested in watching a reduced working model, operated by a small Forest gas motor. Not far away was located another motor of the same system, which actuated the dynamo that furnished the current necessary for the electro-magnet of the machine. Of course, in ordinary practice all the power required is given by 1 motor.—*La Nature.*

THE death rate from chloroform is, according to a recent estimate, 1 in 1,600.

**Cable Grips.**

The office recently opened at 18 Broadway by the trustees of the Brooklyn Bridge, for the reception of models and diagrams of improved cable grips, has been well patronized. A record of all the inventions submitted is preserved in a special book. One of the most amusing communications received is that from a



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The ingenious toy here shown consists simply of a perforated disk, which can be easily whittled out of a piece of thin board, and a piece of strong cord of such a length that when the ends are tied together it will form a loop, through which the legs can be passed, as shown in the drawing. At opposite points on the edge of the disk are cut two small notches to receive the cord, as shown in the upper cut. The performer passes his legs through the loop, inserts the two lengths of cord in the notches of the disk, and then tightly twists up the cord. He now lets go of the disk and suddenly forces his legs apart. The untwisting of the cord rapidly revolves the disk, which will drop to the floor and run away for 50 or 100 yards according to the strength and skill of the manipulator.

Of course, the direction in which the cord is twisted will govern the direction in which the top will run, whether forward or backward. The force applied in untwisting may be increased by aiding the legs by placing the hands upon the knees. A very little practice will enable a boy to accurately gauge the direction in which the top will run and the distance. The disk should be of such a size that it will pass, without touching, between the two sides of the loop when they are parallel, as shown in the left hand figure. If made larger, the disk will not be free to drop from the cord when the latter has been completely untwisted.

**Architects, Clients, and Builders.**

It is a principle of law and equity that an agent is not allowed to make any profit out of the agency, without the knowledge and consent of his principal, beyond his proper remuneration; and any sums of money so obtained by an agent from any other source must be accounted for to the principal, who may claim it as money received to his use. Where, therefore, an engineer (and this case again equally refers to an architect) entered into a sub-contract with the contractor without the knowledge or consent of

convict at Sing Sing. He suggests a circular track at each terminus of the bridge, so that the cars could continue on their course from one track to the other. Short cars, he adds, might be used to make the plan feasible.

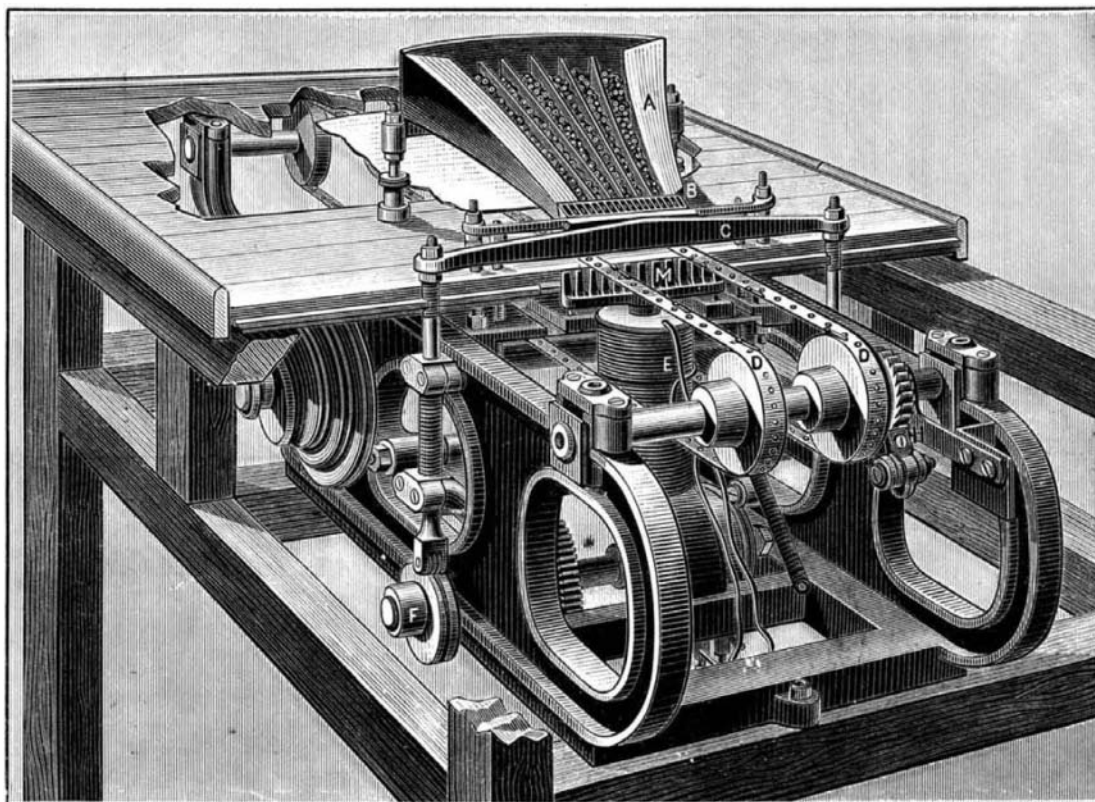
Permission has been granted to the Westinghouse Air Brake Company to equip a car with their compressed air brake and a newly devised grip working on the same principle. The trial trip will probably be made within a few days. The experiment is at the company's expense. The compressed air apparatus has met with so much success when applied to

the employer, it was held that any surreptitious dealing between the contractor and the engineer was a fraud, and entitled the defrauded employer, if he came in time, to have the contract which was entered into without his knowledge or consent rescinded, and to refuse to proceed with it in any shape. So, on the other hand, the architect should not, without the knowledge of the builder, enter into a contract or engagement with the employer. If, besides the contract between the employer and the builder, there is a contract between the employer and the architect, not communicated to the builder, that the outlay shall not exceed a given sum, and the builder is, by the contract, subject to the orders of the architect as to what works he shall execute, this agreement is not binding upon the builder, and such restriction of the architect's authority by contract, as agent for the employer, cannot in any respect prejudice the builder's rights.

And in order to enable the employer to claim the benefit of a proviso that the architect was to arbitrate in all matters between him and the builder, it is essential that the fact of such a contract as above mentioned, between himself and the architect, should have been communicated to the builder, and distinct notice of such an engagement given to him previously to his entering into any contract, as otherwise the architect would be put in a position of undue bias.

If, however, the builder was aware of the agreement between the architect and his employer, and of the fact of the architect's interest in consequence, the builder would be bound.—*Alfred Emden, in the Architect, London.*

FROM the commencement of the cholera epidemic in Spain to the last day of July, the number of cases or cholera reported by the Spanish officials was 114,740, of which 83,973 proved fatal.



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surface roads, that it is expected to meet the requirements of travel on the bridge.

Governor Leon Abbett, of New Jersey, has submitted a grip very similar to that of the Westinghouse Company. These grips differ from that now in use on the bridge in being automatic in their action, while the present one is worked entirely by hand.