

## Scientific Museum.

### New Plastic Compound for Useful and Ornamental Purposes.

The following is the description of an invention, for which patents have recently been obtained in France and England, by Henri J. Scoutetten, of Metz, France, for an account of which we are indebted to "Newton's London Journal." It refers to the manufacture of a paste, composed of vegetable and mineral substances, the number and quantity of which varies according to the purpose for which the paste is required. Thus gutta percha, caoutchouc, pitch, resin, wax, gum-lac, oxyd of iron, golden sulphur of antimony, ultra-marine, chrome, zinc white, &c., may be used.

Manufacture of the paste:—A steam engine serves to furnish steam to two superposed hollow cylinders. These cylinders are themselves moved by the steam, crush the substances which enter into the composition of the paste, and form a homogeneous mass. Double-bottomed cauldrons, equally heated by steam, receive the matter, which, according to circumstances, may be heated dry or in hot water. When the paste is made, it is put into molds and compressed, in order to produce the objects required. These molds are composed of gutta percha containing a twentieth part of caoutchouc; this process of molding affords results hitherto unknown. Each mold should be bound with iron. This paste may also be composed chemically. In this case the gutta percha, caoutchouc, and pitch, are dissolved in the sulphuret of carbon. When the solution is complete and the combination well effected, the solution is purified, the sulphuret of carbon is drawn off, and a mass is obtained, which may be heated dry in close vessels. If it be desired to make pipes, boot soles, straps, &c., add to the above substances, held in solution in the sulphuret of carbon, carded cotton, all the portions of which are penetrated or exactly coated with the material. It is then purified, as in the former case, and a mass is obtained, which is heated dry and passed under rollers. Under other circumstances, and according to known processes, the cotton is replaced by linen, canvas, silk, wool, or any other textile substance. The paste, thus prepared, may be colored by adding one or more of the oxyds indicated. When it is desired to render paper or stuffs impermeable, the caoutchouc and the gutta percha must be separately dissolved in sulphuret of carbon, in the proportion of 8 of gutta percha to 100 of sulphuret of carbon, well purified. The solution is left to rest during eight days, and the white of eggs is added to it. When the impure matters are deposited, it is poured forth to obtain an almost colorless liquid. Paper or stuff may be then steeped in this liquid, and drawn from it by passing the fabric between cleansing rollers, which equalize the layer of the matter. These stuffs become fit for all impermeable clothing. The paper, rendered impermeable, is suitable for photography; it is a substitute for parchment; and it serves for the preservation of valuable papers, to prevent their falsification, erasures, and the action of chemical agents. As to the applications of the paste, they are innumerable; they comprise a complete molding material, either for objects of art or utility; and in many cases may replace leather, pasteboard, plaster, carvings in wood, &c. The objects may be bronzed, gilt, or silvered.

### England's Tribute to American Manufacture of Arms.

A commission of English officers attached to the Engineer and Ordnance Departments are now in this country engaged in examining the system of manufacturing arms pursued in our public and private establishments. By the order of the President and Secretary of War, all the public workshops have been freely thrown open to them, and every facility for examination granted. At Springfield the commission have been delighted at the appearance of the National Armory, and the economy and method of manufacture at this great establishment. A full set of machinery modeled from those now

in use there, has been ordered for the English Government, and is now constructing at the Ames Manufacturing Co.'s Works, at Chicopee. Another set is also building at Windsor, Vt., modeled from the machinery of Robbins' Pistol and Carbine Works at that place.

### What our Country Pays for Guano.

The "Genesee Farmer" says:—"The quantity of guano which will be brought to the United States this year will be about 200,000 tons.

Two hundred thousand tons of guano pur-

chased at fifty-five dollars a ton, (the present price in New York,) will take out of the country eleven million dollars for imported manure. For a comparatively new country, this is a startling fact. All the corn and corn meal exported in the last fiscal year amounted to less than two and a half million dollars. When will our people see the folly of wasting so much of the elements of crops in all their cities and villages, and in almost every rural district, and then sending to the west coast of South America for ten million dollars' worth of manure?"

## MACHINERY FOR NAPPING CLOTH.

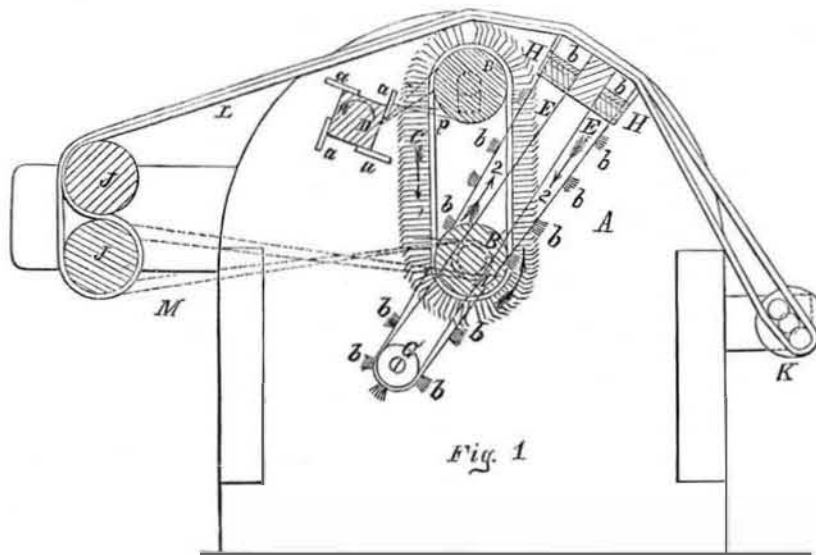
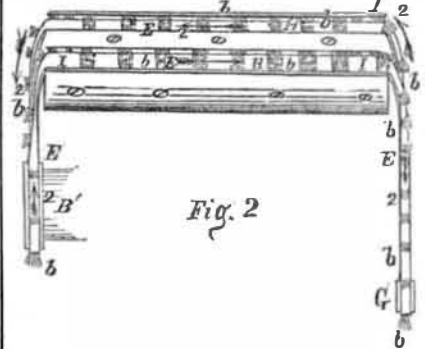


Figure 1 is a vertical longitudinal section—the plane being through the center of the machine; and fig. 2 a detached view of the transverse belt of a machine for the above-named purpose, for which a patent was granted to Joseph Weight, of Lawrence, Mass., on the 30th of June last. The letters of reference indicate like parts on both figures.

The nature of the improvement consists in the employment of an endless card sheet, in combination with a transverse card belt, constructed, arranged, and operating as follows: A represents a box or case of suitable form, and having two transverse rollers, B B', placed within it at about its center, the top roller, B, being near the top of the box or case, figure 1. These two rollers, B B', are placed one above the other a suitable distance or space being left between them. The top roller, B, should be so arranged as to be raised or lowered, and



consequently its journals may fit in sliding bearings. C is an endless card sheet which passes around the two rollers, B B'. The card is constructed in the usual manner and therefore requires no particular description. D is a fly roller having leather strips, a, attached to and projecting from it. E, figs. 1 and 2 is an endless belt, having cards, b, upon its outer surface. This belt passes around one end of the roller, B', and around a pulley, G, attached to the inner side of the box or case, A, opposite to the end of the roller, B', around which said belt passes. H H are transverse boxes or grooves at the upper part of the box or case, A, in which boxes or grooves the belt, E, fits. At both ends of each box or groove there is a roller, I, over which the belt passes. J J are two rollers placed at one end of the box or case, A, one roller directly over the other, and K is a roller placed at the opposite end of the box or case, fig. 1. L, fig. 1, represents a piece of cloth having its ends secured together and passing around the rollers, J J and K, the piece of cloth bearing upon the upper part of the endless card sheet, C, and endless trans-

verse card belt, E. M is a belt which passes around a pulley, N, at one end of the roller, B', and around a pulley at one end of the roller, I, seen in dotted lines in fig. 1. P is a belt which passes around one end of the upper roller, B, and one end of the fly roller, D.

OPERATION—Motion is communicated to the roller, B', in any proper manner, and the endless card sheet, C, moves in the direction indicated by the arrows, 1, and the endless transverse card belt, E, moves in the direction indicated by the arrows, 2, while the piece of cloth, L, is moved over the card, C, and endless transverse belt, E, by means of the belt, M, passing around the pulley at one end of the roller, J, and the pulley, N, at one end of the lower roller, B'. The belt, E, moves in reverse directions across the machine, as denoted by the arrows, 2, and keeps the cloth properly stretched, as regards width, and cards, b, on the belt, E, act against the cloth, and with the endless card sheet, C, raise the nap on the cloth. The fly roller, D, as it rotates, cleanses the card sheet, C.

The above machine works practically well, and renders the use of teasels unnecessary. The endless transverse belt, E, not only assists raising the nap, but also keeps the cloth, C, in proper position while passing over the card sheet, thus dispensing with the use of numerous guide rollers.

More information may be obtained by letter addressed to the patentee.

### A Railroad Anecdote.

The following from the Bristol "Times," (England,) is both instructive and amusing:

"We heard an anecdote from a gentleman who recently traveled by train from Bristol to London, which displays the quick witted promptitude of some people. There was in the carriage with him a fellow-passenger, a stranger to him, but who, while looking out of the window soon after the train passed Swindon, had his hat blown off. Without hesitating a moment, or pausing a second in perplexity, he took from the roof-straps over his head a new leather hat-box, and threw it out of the window after the hat. All looked astonished at this appearance of foolish willfulness, and our informant ventured to ask him if he thought it a wise act, because he had lost his hat, to throw away his hat-box also. "Certainly," replied the other, "my hat was a new hat, and if some workman or policeman picks it up, he will either put it on his greasy head or carry it along to the next station in his hand, until, on a wet day like this, it is ruined. Now, when

he sees the hat-box near it, he will have sense enough to put it into it, and my name is on the hat-box, so that I can have both sent up to London after me;" and so saying, he deliberately put on his traveling cap, and made himself quite easy on the point. Our informant, on returning to town, was curious enough to enquire at Swindon if these calculations were successful, and learned that it was just as he had anticipated. The hat and band-box were found, and the name being seen, they were forwarded on to London to the owner."

### Plated Ware.

The city of Newark, N. J., is highly distinguished for its intelligent manufacturers and skilful mechanics. It is the Birmingham of America, so far at least, as the manufacture of jewelry is concerned. Of the many different kinds of goods manufactured there, Messrs. Hattersly & Dickinson have earned a high reputation for beautiful plated ware. In our list of patent claims for July 4, page 350, one is for a design for a tea and coffee pot, granted to this firm. We have just had an opportunity of examining this design, as applied to a tea set of plated ware, and consider that it is one of the most beautiful and elegant we have ever seen. The frosted work is composed of vine leaves, with richly laden clusters of the grape, tastily disposed on every piece of the set, both in wreaths and in single pendant branches.—This firm had a beautiful case of plated ware in the Crystal Palace.



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