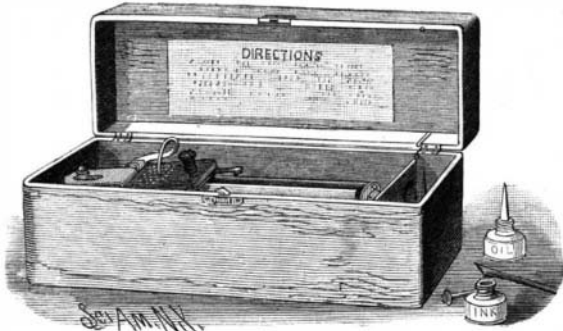


THE MORRIS TYPE WRITER.

We illustrate in this issue the Morris type writer. It is a machine designed to supply the want so much felt for a portable and low priced machine which in quality of work and rapidity of execution should yield to none of the higher priced and heavier ones. The machine was invented by Mr. Robert Morris, of Kansas.



MORRIS TYPE WRITER IN CASE.

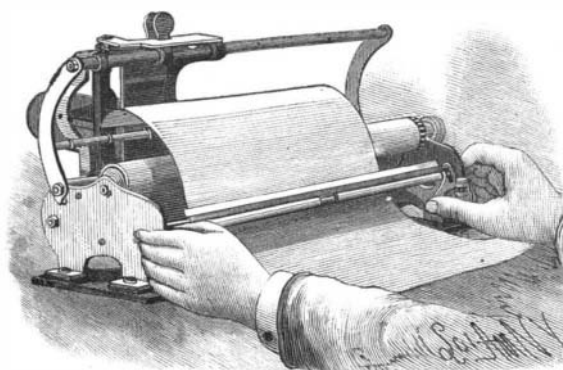
In 1885 he constructed or had constructed a number. These he sold, and although they were by no means the finished product we illustrate, yet so valuable were the features they embodied, that they worked successfully and to the satisfaction of their purchasers. In 1886 the inventor introduced them in the East, and after several hundred had been sold here, the manufacture was intrusted to the Hoggson & Pettis Manufacturing Company, of New Haven, Conn. The entire management was placed in the hands of this firm, and they at once set about improving the model, and by a process largely of simplification arrived at the present form.

The present model is in many respects an advance on the old one. As the machine from the first did good work, still better is to be looked for from the improved construction designed by the experienced firm who are its proprietors and who superintend its manufacture, on which a high grade of skilled machinists are employed.

The general features of the type writer are well brought out in the cuts. A swinging and reciprocating platen carriage carries the type, which are made of India rubber. When depressed sufficiently, one of the type is pressed against the paper which rests upon a roller. In order to guide the type to its place a guide pin is provided. This projects upward and enters a countersunk hole in the platen. There are as many of these holes as there are letters and characters. Each hole corresponds to a particular character, and the platen cannot be depressed without the pin entering the proper hole. The countersinking guides the pin, and the effect of the arrangement is that each letter can only be printed accurately in place and in alignment with the rest. In the view of the machine showing the platen turned back, the series of guiding holes can be seen to the right of the type.

Immediately above the type on the upper face of the platen the characters are engraved, and a finger points out the letter that will be printed on depressing the platen.

Underneath the type is an inking pad. At every depression of the platen the type are pressed upon this,



ADJUSTING PAPER IN MORRIS TYPE WRITER.

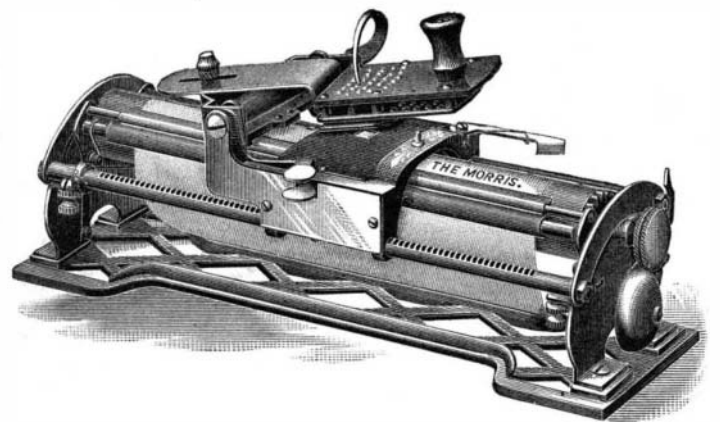
so as to keep them charged with ink. Through the center of the pad an aperture is formed, large enough to permit one type to pass through, and through this the impression is given. The depression of the platen by a rack and pinion movement advances the type an exact distance for each impression.

The operation from the illustration and description will be clear, and will be seen to be simple, rapid, and effectual. The operator holds the little knob with the fingers of the right hand. The platen is moved thereby until the proper letter comes under the indicator, when the platen is pressed downward. The guide pin enters the countersunk hole, the type descends exactly in its proper place, and the impression is made. At the same time the other type are brought in contact with the inking pad, so as to keep them in condition for printing. The platen after printing is pressed up to its original level by a spring. As it rises, the feed motion acts and the carriage advances one letter space. Between words or at the ends of paragraphs, different spacing can be produced by the operator. The thumb and finger pieces, seen projecting forward from the front of the carriage, are provided for executing these movements.

As the carriage bearing the platen approaches the end of its course, it rings an alarm bell to notify the operator. Forty-five characters, including the alphabet, numerals, punctuation, per cent, and dollar marks, are contained on each sheet of type. Different and interchangeable styles are provided for use on the same machine. The strength of the rubber backing is not, however, relied on to secure accurate placing of the type. Their faces project

the milled head on the right of the machine. A stop motion is provided to secure perfectly accurate feed.

All inquiries concerning this machine may be ad-



THE MORRIS TYPE WRITER—GENERAL VIEW.

dressed to the Hoggson & Pettis Manufacturing Company, New Haven, Conn.

Four Things Worth Knowing.

Chas. Reiss gives in the *American Jeweller* the following useful receipts:

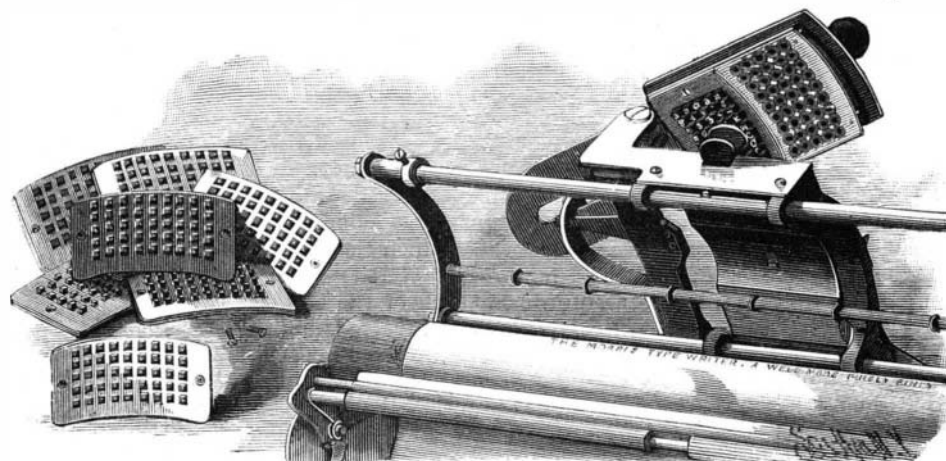
Immerse steel or iron in a solution of carbonate of potash for a few minutes, and they will not rust for years, not even when exposed to damp atmosphere.

To restore the luster of dead silver work, gilt clock cases, etc., dissolve one ounce of cyanide of potash in one quart of pure water, empty it into a bottle, and label it "poison." When to be used, place the article in an earthen vessel, cover it over with the solution, and in five minutes the lusterless appearance will be removed. Preserve the fluid for future use.

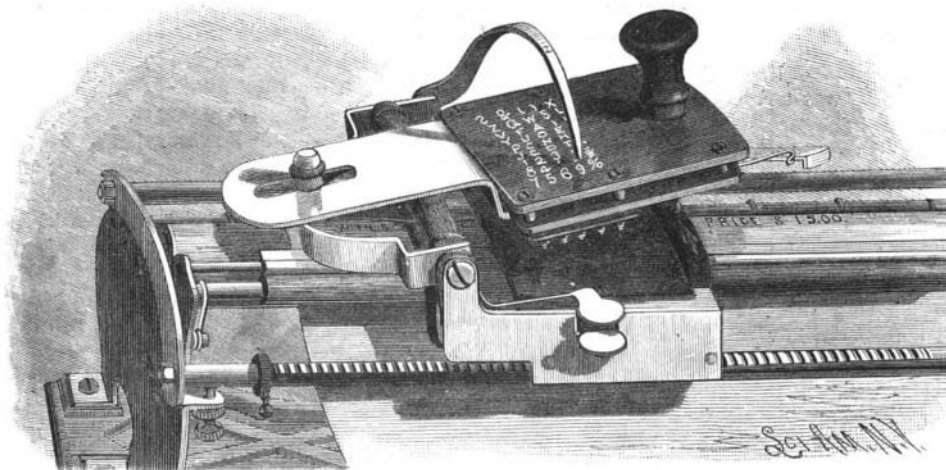
The following method for bluing small steel pieces evenly will prove satisfactory: You first blue the object without any special regard as to uniformity of color. Should it prove to be imperfect, take a piece of clean pith, or a piece of dead wood that will not crumble too easily, and whiten the surface with rouge without letting it be too dry. Pieces when thus prepared, if cleaned and blued with care, will assume a very uniform tint.

To prepare a beautiful gold beetle colored bronze, use the following method: Mix equal parts of chromate of potash and table salt. After the powder is finely mixed, let it pass through a sieve, then put this powder into a crucible and cover it with a layer of salt. Cover the crucible and allow the contents to boil half an hour. After cooling, wash out the contents carefully with water, and the mass on being rubbed will show a beautiful bronze.

Platinum can be made to adhere to gold by soldering, in the following manner: A small quantity of fine or eighteen carat gold should be sweated into the surface of the platinum at nearly a white heat, so that the gold shall soak into the face of the platinum. Ordinary solder will then adhere firmly to the face obtained in this manner. Hard solder acts by partially fusing and combining with the surfaces to be joined, and platinum alone will not fuse or combine with any solder at a temperature anything like the fusing point of ordinary gold solder.



UNDER VIEW OF PLATEN AND SHEETS OF TYPE OF MORRIS TYPE WRITER.



PLATEN AND CHARACTER PLATE OF MORRIS TYPE WRITER.

through holes in a metallic plate, so that they cannot move laterally. The type plate is always in full sight, never being covered by the operator's hand. Its area is so small that all the characters are kept easily within the limits of most distinct vision. The guide pin, after passing through the guide holes, strikes the upper plate of the platen carriage. This contact takes place every time a letter is printed, and insures a perfectly even pressure, so that all the characters are printed with equal distinctness. Every portion of the machine, except the type plate and rolls, is of metal, with interchangeable parts throughout. Its weight is four and a quarter pounds, and with its box and appurtenances, seven pounds.

It will be noticed that it is not a ribbon printing machine, but that it does its work by direct contact between paper and type. The feed of the paper is managed by the rotation of the bed roller, effected by



THE MORRIS TYPE WRITER IN USE.