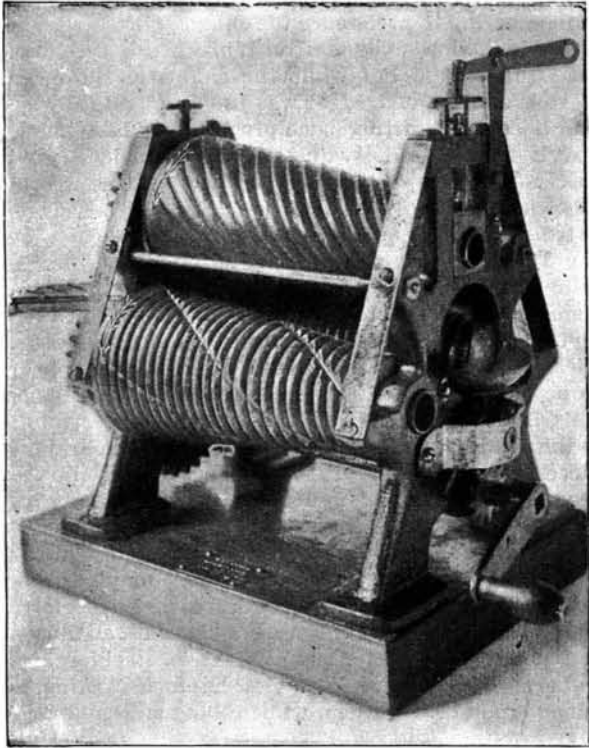


SUCKOW'S MACHINE FOR SQUEEZING PUDDLERS' BALLS AND THE MANNESMANN SEAMLESS TUBE MACHINE.

To the Editor of the Scientific American:

Strange it is but nevertheless true that humble original inventors in about one instance out of a hundred receive any credit or just compensation for years of their unproductive toil while alive, although they may witness in their declining years, with reduced strength and infirmities, the very invention at first sneered at brought forward and imitated successfully by



SUCKOW'S METAL SQUEEZING MACHINE.

other parties, of course under another name or names, without any redress, further than possible eulogy after their death. Numerous instances have appeared in your publications and elsewhere from time to time verifying this assertion, among them J. Crompton, the Englishman, originator of the spinning jenny; B. Thimonnier, the Frenchman, originator of the sewing machine; J. Ressel, originator of the screw propeller, etc., all of whom died poor and neglected. I inclose a photograph of the original working model of a machine of my invention, and one of which was purchased from me in 1882 on pretense of introduction after explaining further scope of the invention. I called it a "squeezer," and the invention with process you published with drawings and specifications complete, excepting the eleven claims, in the SCIENTIFIC AMERICAN SUPPLEMENT, June 30, 1877. In your issue of September 27, 1890, you also published and illustrated the so-called Mannesmann process for making seamless tubes from solid blocks of metal, with the portraits of the so-called inventors, as copied from *Über Land und Meer*. Please compare my specification with the Mannesmann process. As an American, I feel anxious to know if this technical wonder, as some papers call it, and which now plays such an important part in the iron and steel industries, is in practical operation here, and if not, why not? And why do the Mannesmanns entirely ignore a civil communication in their own native language, forwarded to them a year ago? Further comment I don't deem necessary.

ED. SUCKOW.

Jamestown, N. Y., October 10, 1893.

[A comparison of the Suckow with the Mannesmann machine certainly seems to indicate that the earlier American inventor came very near to the result by which fame and fortune were subsequently realized by the German inventors. Although the earlier patent was primarily for different purposes, and the machine was incapable without change of making the Mannesmann products, the earlier Suckow machine so strongly suggests the principal idea of the Mannesmann as in itself to afford a most probable answer to the question of our correspondent. Inventors who have become practically and financially successful do not look around for others who possibly anticipated them in their ideas but neglected or failed to improve their opportunities.—ED.]

FOR sticking glass labels on drawers, the best cement to use is a thick solution of shellac in benzole, in which gutta percha in the proportion of 1 in 12 has been dissolved.

Microbes on Post Cards.

The latest scare in microbes has been started by Professor Uffelman, of Rostock, who infected a letter with cholera bacilli and put it into a post bag. When the letter was taken out, 23½ hours later, the bacilli were still alive. Bacilli were also found living on post cards twenty hours after infection. The micro-organisms were found to die rapidly when placed upon coins. A fly charged with cholera bacilli was afterward placed on some beef. A little later the meat was found to be swarming with bacteria. A finger was infected with cholera bacilli and dried. One hour later the finger was rubbed on some roast meat, and numerous bacilli developed subsequently. The moral of all these experiments is obvious.

PIANOS AND ORGANS AT THE FAIR.

Among the many exhibits of pianos and organs in the Manufactures and Liberal Arts building at the World's Fair, Chicago, there is none perhaps which at once attracts attention and holds the same more than that of the Mason & Hamlin Organ and Piano Company. The exhibit occupies a fine position just at the right of the main entrance to the musical section of the Liberal Arts building on the south side, and includes about twenty instruments in all. Here may be seen grand and upright pianos, the celebrated Liszt organs, and many styles of smaller organs. The *piece de resistance* is a two manual pedal base Liszt organ, with a highly decorated pipe top. This instrument is sold largely for churches, convents and lodges throughout the country. Although a reed organ, it is built on the plan of a pipe organ, the stops running throughout the registers. There is a full set of foot pedals, and altogether it is a most complete instrument. There is one of these instruments, also, in the Art Palace at Chicago. An interesting organ also is the India model, which is inclosed in a case of cedar, and in which there is no glue, the parts being riveted, so as to withstand the effects of the great heat and of dry climates.

Perhaps the most interesting feature of the exhibit is the piano plate, showing the now celebrated improved method of piano stringing invented and patented by Mason & Hamlin in 1882, and used exclusively by that company ever since. The strings of the piano by this system are held much more securely than in the piano as ordinarily constructed, and as a result the piano remains in tune much longer and is far more durable than in pianos in general. Among the upright pianos is one in dark mahogany, with Ionic upper pillars and the base in colonial style; another is in white and gold, with finely handpainted panels, finished by what is called the Daws enamel process, in Louis XIV. style. One of the handsomest uprights is the one in mahogany, with delicate handpainted satin wood panels. This is in marquetry style. There is a parlor grand in mahogany and the usual concert grand in its finest style. The parlor grand has hand carvings on antes and legs.

The little baby organ, which sells for \$27, stands in the front, and as one man expresses it, is "perfectly able to speak for itself." The workmanship throughout the entire Mason & Hamlin exhibit is of the first grade.

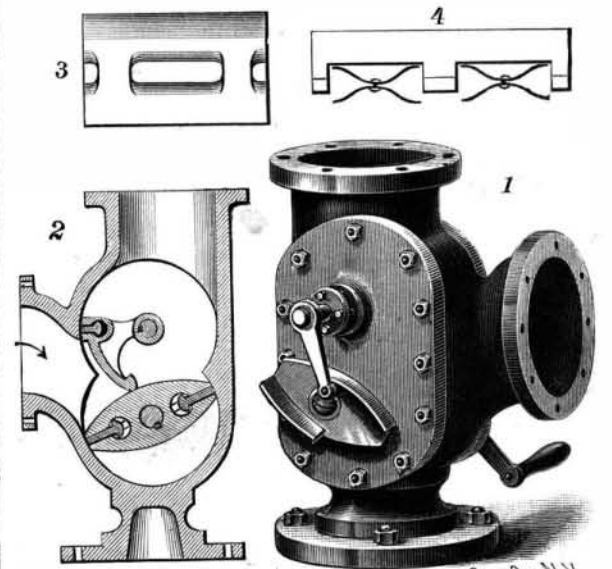
Mason & Hamlin have received highest awards at the Exposition on both pianos and organs; their patented and improved method of stringing received especial mention, it being declared by the judges that by virtue of their device the Mason & Hamlin pianos remain in tune much longer than other pianos.



THE WORLD'S COLUMBIAN EXPOSITION—EXHIBIT OF THE MASON & HAMLIN COMPANY.

A DURABLE AND EFFICIENT PUMP.

The pump shown in the illustration is of comparatively inexpensive construction, and is designed to pump rapidly and work easily. It has been patented by Mr. Luigi Nasi, of No. 317 Bush Street, San Francisco, Cal. Fig. 1 represents a perspective view and Fig. 2 a vertical section, Fig. 3 a plan of the pump valve, and Fig. 4 one of the packing slides in the piston and valve. The inlet is at the side and the outlet at the top of the casing, and the driving shaft extends centrally through the lower of its two cylindrical chambers, the shaft having a hand driving crank, or a pulley for connection with other source of power. The piston is preferably ellipsoidal, as shown, although other forms may be employed, and at its ends are longitudinal slots which receive the packing slides. Centrally in the upper chamber is a shaft carrying a valve which extends forward toward the inlet, a curved wing of the valve, with thickened lower end, riding upon the piston. The main end portion of the valve is slotted and bored in the same way as the piston ends, to carry a similar packing slide. On the outer end of the shaft carrying the valve a crank with a handle may be used to start the pump when the water is first introduced; or the shaft may have at one end a crank carrying at its free end an inwardly extending stud to engage flanges on opposite sides and ends of



NASI'S ROTARY PUMP.

an ellipsoidal cam, shaped like the piston, and rigidly secured upon the piston shaft. In the latter case, when the piston strikes the valve wing and raises the valve, the flanges of the cam engage the stud of the crank and continue the movement of the valve. After the pump is started the crank may be removed and reliance placed on the back water pressure to hold the valve down in close contact with the piston, as after the pump is once filled it will work continuously without the valve-actuating mechanism.

Whistling Fireworks.

One of the features at the Crystal Palace (London) fireworks display recently was whistling pieces, which in burning give a wild, screaming noise. There is some mystery about how this noise is produced. Messrs. Brock themselves are unable to say, and do not know anybody who can tell them. The firework consists of a stout paper tube 2½ inches in length, and with a bore of about ⅜ inch. About 2 inches of this little tube are stuffed with pierate of potash, leaving ½ inch or so empty. When lighted by means of a fuse it does not explode, but burns away with great violence, and with the uncanny shriek which gives the thing its interest. Pyrotechnists have tried many other compositions and many other kinds and forms of tubes, but pierate of potash is the only thing that will give anything but the faintest trace of a whistle.

Pure Iron.

Professor Arnold, of the Sheffield Technical School, recently produced, with the aid of aluminum, a sound ingot and bar containing 99.81 per cent of pure iron. So far, no absolutely carbonless iron has been obtained commercially. An analysis of Professor Arnold's bar by Mr. R. A. Hadfield showed the following composition: Carbon, 0.07 per cent; silicon, 0.04 per cent; sulphur, 0.03 per cent; phosphorus, 0.015 per cent; iron, 99.81 per cent; total, 100.035 per cent. Its specific gravity was 7.863; limit of elasticity, 18 tons per square inch; breaking load, 23 tons per square inch; elongation, measured on 2 inches, 49.25 per cent; reduction of area, 69.60 per cent; fracture, silky