BAD PAVING IN NEW YORK.

Broadway, the great thoroughfare of New York, for the past two months has been practically closed to vehicles, by reason of its occupation by the street railroad company in laying down the required paraphernalia for cable propulsion in place of horses. This job is now nearly completed, and has been executed in the most substantial manner. The city authorities have undertaken to relay the stone pavement between the outer rails of the cable road and the curb stones. We regret to say they have adopted the same old good-for-nothing system which previously existed; to wit, bedding the stone blocks in soft sand. The result is

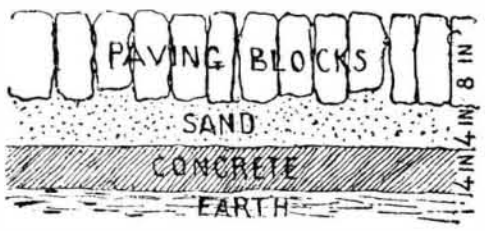


Fig. 1.

the evenness of the pavement only continues for a short time after it is laid down; the stone blocks rise in some places and sink in others, and the general surface takes on an appearance like the waves of a choppy sea. The pavement must then be taken up and relaid. This is a method considered best by the politicians who misgovern the great city. It brings to them a perennial flow of money from the city treasury on which they fatten while the tax payers suffer.

Fig. 1 shows how the pavement looks when it is first laid down. Fig. 2 shows its appearance after it has been in use for a short time.

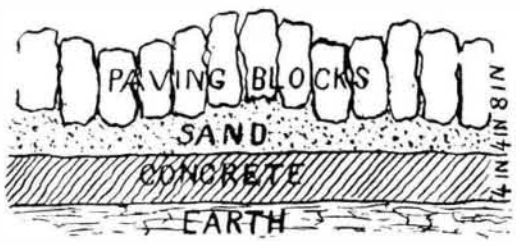


Fig. 2.

A writer in the New York *Tribune* says:

"Why it is possible for this new work to get so quickly out of order is easily explained. The blocks are of all sorts and sizes. They are too roughly cut to make close joints, and, being set in a bed of sand, have no firm foundation.

If the block is a thick one, it is pounded down to the proper level; if it is a thin one, it is left to rest lightly on the sand, so that it will come up to the proper level. Tar is then poured into the joints and a thin layer of gravel spread over the surface to be worked into the joints by passing wheels. This tar that is poured into the joints becomes brittle as soon as it sets, and the first weight that strikes the blocks cracks it. Water works its way down into the sand, the concrete holds it there until a heavy wheel presses down the thinner blocks, and the water and sand are forced up through the joints to the surface. After the first block is loosened it becomes just so much easier for passing wheels to start the rest. The pumping process is continued, and in a short time a whole section of pavement is loose and sucks down into the soft sand, forming a pronounced hollow in the street.

The result is obtained quickly on the Broadway work, because of the large joints and the rough character of the surface made by using all sizes and shapes of blocks. The joints are already in bad condition over large areas of surface, and as soon as frost comes the damage that will result will be enormous. It has already been large, and will keep on growing even without the aid of frost, for the reasons already set forth.

All the pipes of various kinds under Broadway are below the concrete. The gases that escape or generate are unable to work to the surface because of the layer of concrete. They therefore follow the pipes to a manhole and an explosion occurs, which is another bad defect in the system adopted for the new pavement.

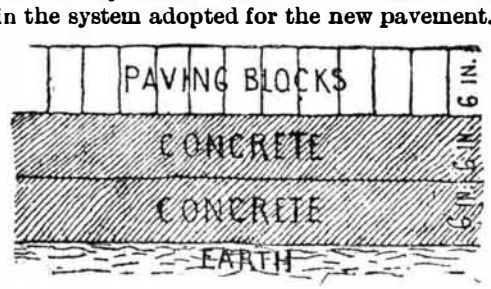


Fig. 3.

In connection with this, it is instructive to note the manner in which pavements are laid in English and Continental cities, as shown in Fig. 3. The blocks, in the first place, have to be of even size, and cut roughly into shape. They are then set with close joints on a solid bed, with perhaps a thin layer of sand as a cushion, and a pavement is made that does not show the effects of wear in years

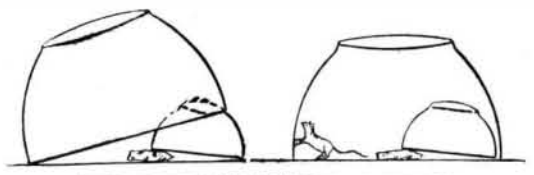
In making such a pavement six inches of concrete are first put in and allowed to set. Then another layer six inches thick is put down, and on top of that the paving blocks are set in wet cement, making a thoroughly durable and lasting roadbed which cannot be stirred nor loosened by the wheels of passing vehicles, no matter how heavy. The gas, water, sewer, and other pipes are all carried in a large tunnel where they can be reached without tearing up the pavement or disturbing the street. Opportunity is also furnished for gases to escape naturally, and explosions under manholes are unknown."

Strychnine for Snake Bite.

A curious instance of one poison killing another is reported from Yackandandah, Victoria, where Dr. Mueller has recently administered strychnine in cases of snake bite. A solution of nitrate of strychnine in 240 parts of water, mixed with a little glycerine, is prepared, and twenty minims injected hypodermically at intervals of ten to twenty minutes, according to the virulence of the attack. In some cases a grain of strychnine has been given thus within a few hours. The two poisons are antagonistic, and the characteristic effects of the strychnine only show themselves after the venom has been neutralized. The first independent action of the drug is evinced by slight muscular spasms and the injections must then be discontinued, unless after a time the snake poison reasserts itself. So long as the latter is active the strychnine can be applied in quantities which would be fatal in the absence of the virus. Out of the hundred patients treated this way, some of whom were at the point of death, there was only one failure, and that arose from the stoppage of the injections after one and a quarter grains of strychnine were administered. Any part of the body will serve for the injection, but Dr. Mueller chooses a part near the snake bite.

A MOUSETRAP.

A correspondent says it costs nothing, does not get out of order, is effective and ever ready.



A Substitute for German Silver.

With a view to obtain, if possible, a cheaper and better article than German silver, that would be suitable for electrical purposes, Mr. A. H. Cowles has been for some time endeavoring to procure alloys of copper and manganese. He found that while pure metallic manganese could with difficulty be reduced by the ordinary methods, it could be cheaply reduced in the electric furnace. This fact has facilitated the production, after a long series of experiments, of a substitute for German silver, which is styled "silver bronze."

The difficulties attending the casting, etc., of a pure manganese bronze have been surmounted by introducing into the alloy a small percentage of aluminum. The addition of 1¼ per cent of this metal to the alloy converts it from being most refractory in the casting process to being most satisfactory in this respect. The addition of aluminum also produces an alloy of much greater non-corrodibility than either German or nickel silver. Silicon and zinc are also introduced with good results.

The "silver bronze" alloy, which has been specially prepared for rod, sheet, and wire purposes, is of the following composition:

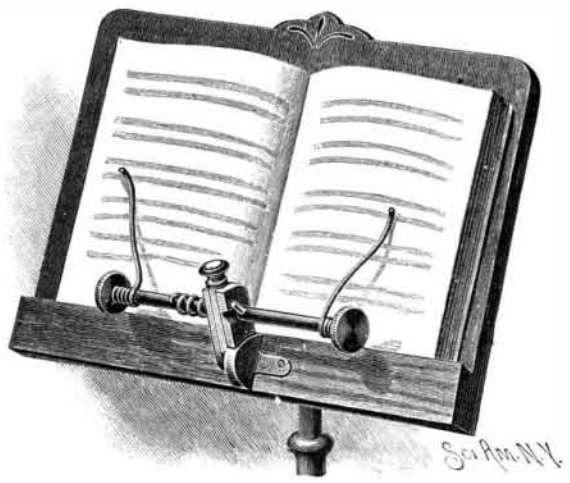
Manganese	18·00	per cent.
Aluminum	1·20	" "
Silicon	5·00	" "
Zinc	13·00	" "
Copper	67·50	" "
	104·70	

This alloy has a tensile strength of about 57,000 lb. on small bars, and 20 per cent elongation. It has been rolled into thin plate, and drawn into wire of 0·008 m. in diameter.

The electrical resistance of "silver bronze" is stated to be higher than that of German silver, and the hope is entertained that we have in it a material the resistance of which will be such that it will afford the electrician better and cheaper wire for the rheostat than any other alloy.

A SIMPLE AND CONVENIENT MUSIC HOLDER.

The device shown in the illustration may be attached to any kind of a music rest, and will hold the leaves so that they cannot be accidentally displaced. It has been patented by Mr. Clarence E. French, of No. 6 Commerce Street, Jacksonville, Texas. The base of the device has a flange by which it may be attached to the lower front edge of a book rest, and in a recess in one side is a series of teeth adapted to hold the main portion of the rest in the desired position. A standard is pivoted to the base, and has a shoulder fitting its upper semicircular surface, while a shaft with milled ends extends transversely through the standard, spring fingers extending upward from the shaft to press upon the leaves of a book. The spring fingers are curved outwardly at their upper ends, so that they will not tear the leaves, and they are coiled around the shaft at their lower ends, the coils increasing their spring action. The fingers are pressed against the book

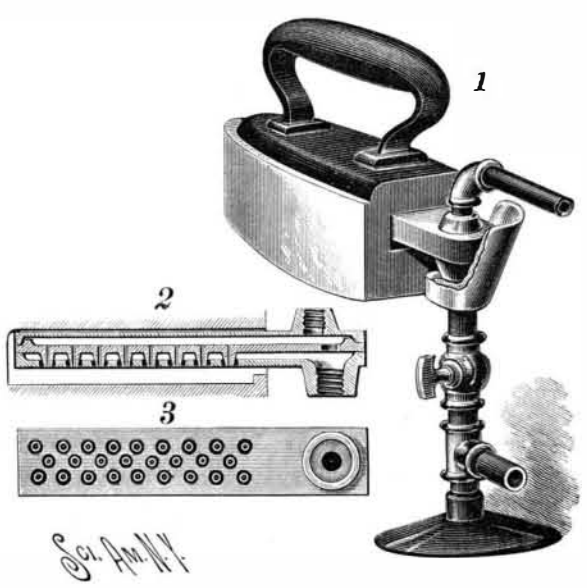


FRENCH'S MUSIC HOLDER.

by a spiral spring around the shaft near the standard, to which one end of the spring is secured, the other end being secured to the shaft, the spring also pushing the shaft endwise to bring a stud in the shaft against the standard. Dovetailed in the front of the standard is a slide having at its lower end a pawl adapted to engage one of the teeth in the base, and at its upper end is a button normally pressed upward by a spring to hold the pawl in engagement with the teeth. When the device is not in use it is turned outward, and the stud in the shaft engages a notch in the standard to hold the fingers away from the rest. When the music is placed in position, the shaft is moved slightly endwise to release the stud from the notch, when the spring around the shaft turns it to cause the fingers to press upon the leaves. By adjusting the slide and pawl the standard may be held at any desired angle to bring the requisite pressure on the book, the fingers being short and light, so as not to obstruct the view of the music.

AN IMPROVED FLAT IRON AND HEATER.

The illustration represents a flat iron and a burner for heating it, the iron being so constructed as to retain a maximum amount of heat and always be kept in a clean condition. The improvement has been patented by Mr. Wendell Hess, Jr., of Tibbits Avenue, Troy, N. Y. The tubular standard is connected with a pipe for the introduction of air to the burner, and at the top of the standard is a cap plate and shield, the inner end of the burner resting on the cap plate. Fig. 2 represents a section through the heater, Fig. 3 being a bottom plan view. One end of the bottom section has a collar surrounding an opening in the plate, the burner being attached to the standard by a thimble screwed into the collar. A collar surrounds an open-



HESS' FLAT IRON AND FLAT IRON HEATER.

ing in one end of the top plate, with which the gas supply tube is connected. In the chamber formed in the burner the gas and air commingle to promote a combustion which will afford a high degree of heat. The iron has an interior chamber into which the heater is introduced, the chamber being open at one end only, and the iron resting upon the upper face of the heater while it is being heated. But a small portion of the heat can escape while the iron is in position on the heater, and the proper degree of heat is quickly obtained.