

## Science and Art.

## New Alloy for Journal Boxes.

The following is the substance of a patent granted to Thomas Forth, of Cincinnati, Ohio, on the 1st of May, 1855:—

Take seven and a half (7½) pounds of pure copper and melt it in a crucible; then gradually add, in small pieces, ninety-two and a half (92½) pounds of zinc, which when all melted and the two metals thoroughly mixed, the alloy is to be run into molds for journal boxes. The claim for this composition is the alloy in the exact proportions stated, which is asserted to make a superior and cheap composition for journal boxes. The alloy is simply a brass with the zinc greatly preponderating, and half a pound added or taken from the proportions given, of course, obviates the patent.

Having recently had quite a number of inquiries regarding the composition of "Babbitt metal," and presuming they come from new subscribers, we feel called upon to publish the recipe, although we have given it in a former volume:—

Take 24 pounds of copper and melt it first in a crucible, then add gradually 24 parts of pure tin and eight of antimony. Great care must be exercised in adding the tin to the copper. This composition is rendered softer by the use of a greater quantity of tin. Many persons suppose that the above metallic alloy is the subject of a patent by Mr. Babbitt; it never was patented. The patent was for lining iron journal boxes with soft metal.

## The Æolian Harp.

A correspondent desires us to give him some particulars of this instrument, and directions how to construct it; and as the summer is coming on, and its melancholy music may find many who will enjoy it during the hot season, we give the desired information for the benefit of all our readers:—

This instrument consists of a long narrow box of very thin pine, about six inches deep, with a circle in the middle of the upper side, of an inch and a-half in diameter, in which are to be drilled small holes. On this side seven, ten, or more strings of very fine catgut are stretched over bridges at each end, like the bridge of a fiddle, and screwed up or relaxed with screw pins. The strings must all be tuned to one and the same note, (D is, perhaps, the best,) and the instrument should be placed in a window partly open, in which the width is exactly equal to the length of the harp, with the sash just raised to give the air admission. When the air blows upon these strings with different degrees of force it will excite different tones of sound. Sometimes the blast brings out all the tones in full concert, and sometimes it sinks them to the softest murmurs.

A colossal imitation of the instrument just described was invented at Milan in 1786, by the Abbè Gattoni. He stretched seven strong iron wires, tuned to the notes of the gamut, from the top of a tower sixty feet high, to the house of a Signor Moscati, who was interested in the success of the experiment, and this apparatus, called the "giant's harp," in blowing weather yielded lengthened peals of harmonious music. In a storm this music was sometimes heard at the distance of several miles.

## Improved Mowing Machine.

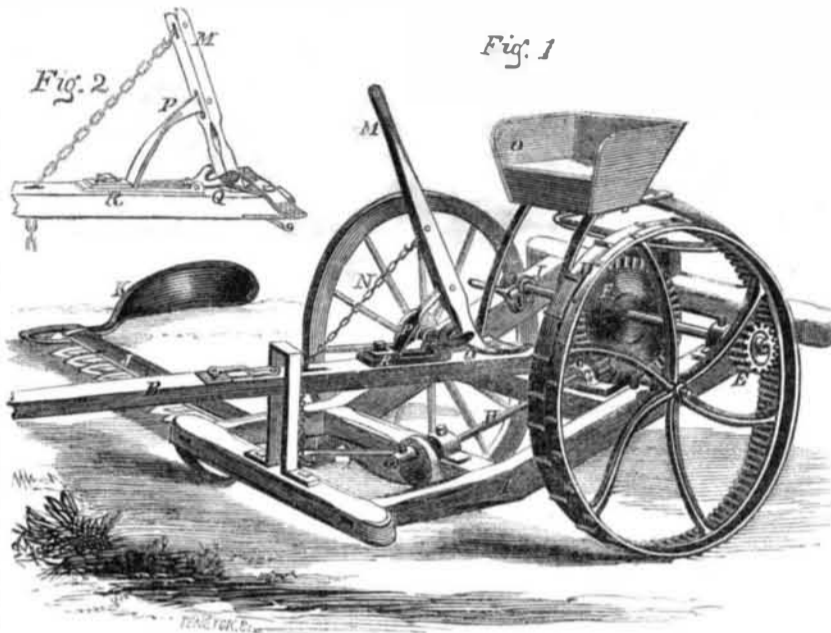
This mowing machine is possessed of the valuable peculiarity that in any position of the cutters they are perfectly balanced on the axle by the weight of the driver on his seat, O, and the draught-pole is so attached that when the machine is "backed," the sickle is raised from the ground, and it can in consequence turn freely at the end of the swath.

Fig. 1 is a perspective view of this machine, in which A is the frame, B is the draught pole that can move up and down in the guides on the front of the frame, and it is hinged to the frame at a point behind the axles, C, on which the frame is suspended. D is a driving wheel

which also serves to support the frame, and it has teeth on the inner side of its periphery which gear into E, and thus the rotation of D gives motion to the bevel wheels, F G; a rod, H, carrying the latter, and having on its other end an eccentric, gives the proper reciprocating motion to the cutters in the sickle, J, by means of the rod, I. K is a board or casting for guiding the grain or grass in its

fall to the ground. L is a clutch for throwing the wheel, F, in and out of gear; it has two eye pieces upon it, and there being a small rim on the axle, it holds the axle securely in the position desired. M is a lever hinged to the frame, and having a chain, N, passing from it over a pulley, let into a slot in the draught-pole, and then attached to the front of the frame; by this the driver can lift the frame

## NISHWITZ'S MOWING MACHINE.

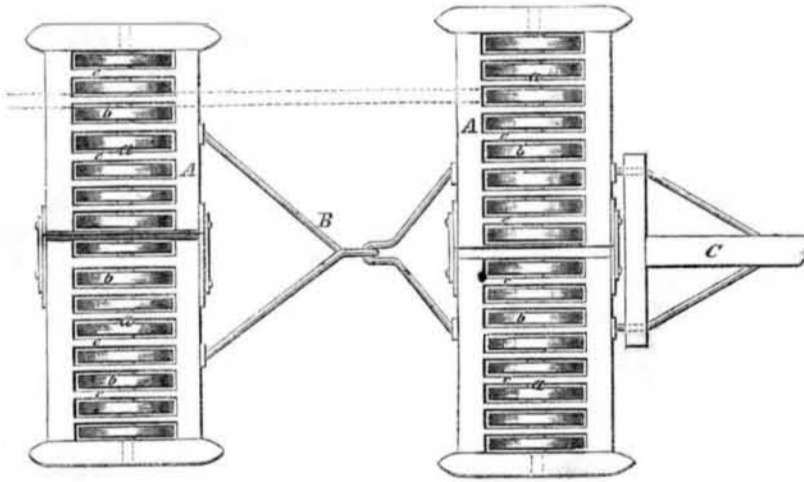


and sickle to any desired height from the ground, and when it is in the proper position the pawl P (seen better in Fig. 2) secures it by catching in one of the teeth upon the rack, R. When it is desired to release the pawl, the driver places his foot upon the lever, Q, and that lifts up the pawl and allows the frame to fall to its lowest position. From this description it will be seen that the frame is perfectly balanced, and that the force exerted on the

draught pole in "backing" will be thrown on the back of the frame, and thus raise the sickle free from the ground.

This is a light and very convenient machine, and will, we have no doubt, fulfill the purposes for which it is intended by the inventor, F. Nishwitz, of 134 First street, Williamsburg, L. I., who will furnish any further particulars. A patent was obtained on it Feb. 16, 1858.

## THOMPSON'S SEED ROLLER.



Our engraving is a top view of a roller that is intended for rolling seeds into the earth, after they have been planted in or thrown upon it by any suitable means.

A A represent two frames that are jointed together at their centers. To the underside of each frame are attached axles, a, one at each side of the joint, and on these are placed wheels having their rims of a suitable shape to act as rollers, b. Between each of the wheels is a slat, c, and the rolling wheels of the fore frame, A, are opposite the slats of the back frame and vice versa, as will be seen by referring to the dotted lines in the illustration; this insures all the ground being rolled which is within the compass of the machine. The two frames, A, are connected together by a jointed reach, B, and a pole, C, is fixed to the fore one for the horses to be attached to. The drag merely throws a light covering of earth over the seed which is often displaced by the winds, leaving them exposed, and the harrow covers portions of the seed too deep, and

others not at all, while this roller, conforming as it does, to all the inequalities of the ground (by being jointed) covers all the seed equally and with the same pressure. Advantageous as jointed roller frames are acknowledged to be, they are seldom used, because in moist ground they are liable to become clogged from the damp soil adhering to them, and thus preventing their perfect action; but this roller is free from this disadvantage, for the slats, c, take off all the soil at the point where it is most easily detached, namely, in a horizontal line just above their axis of rotation, and thus keep the rollers clear, and all the soil thus dropped from the fore rollers is pressed into the ground by the succeeding frame. All the small clods are crushed and pressed into the ground, and in every way it answers the purpose for which it is designed.

It was patented Dec. 9, 1856, by the inventor, Anson Thompson, of Glen Falls, N. Y., who will be happy to give any further information.

## Filling Teeth with Tin.

MESSEURS. EDITORS—In No. 21, this Vol., SCIENTIFIC AMERICAN, my attention was specially attracted by the article headed "Tin versus Gold for Teeth," in which testimony in favor of the former over gold was adduced. To this I also wish to add my testimony. In 1839 I had my teeth examined by a good dentist, who filled all the cavities (fifteen), with but one exception, with gold. This exceptional tooth was filled with tin, and was considered so much decayed that the use of gold was held to be extravagant, hence the employment of tin foil for the purpose. One of the teeth then filled with gold is now entirely gone, and several others have had their filling renewed, but the one filled with tin is as good as it was on the day the operation was performed. I am satisfied, both in regard to the durability and comfort experienced, by the use of tin, as a substitute for gold in filling teeth. I do not express an opinion as to the cause; I merely relate my own experience. Tin is, undoubtedly, a superior non-conductor to gold, and perhaps its expansion by slight oxydation may tend to render it more durable, and at the same time fit more accurately in the cavity. D. S. HOWARD.

Corpus Christi, Tex., April, 1858.

## Wealth of the United States.

The aggregate wealth of the United States amounts to \$12,000,000,000, and the population is 24,000,000 souls. The wealth divided by the population gives \$500 to each person, young and old; and counting five persons to each family, it would give the handsome little fortune of \$2,500 to every family of the republic.



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