### Improved Saw Gummer.

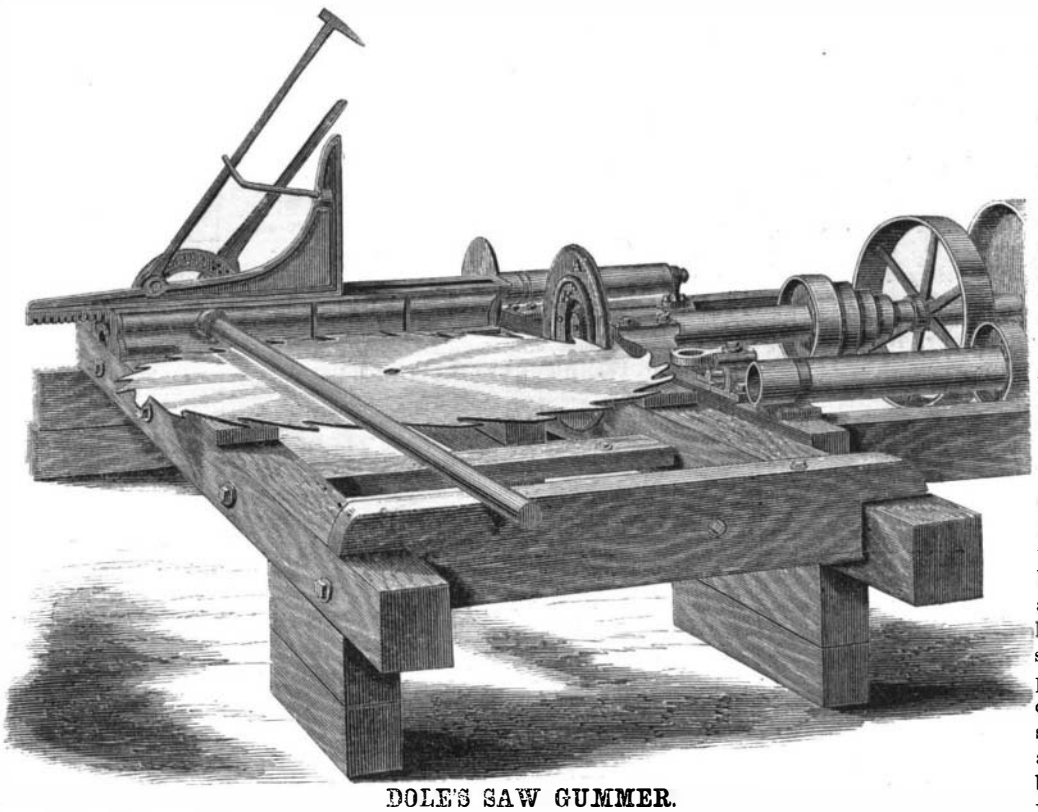
This engraving represents a new method of "gumming" circular saws, or, in other words, cutting out the throat of the tooth so that the dust will have a free opportunity to escape without clogging and binding the saw.

The tool is designed to be applied to the mandrel the saw itself works on, so that by merely removing it, and substituting the gummer, the operation can be performed without any other special fixtures.

The gummer itself consists of a grindstone or emery wheel, A, made of vulcanized rubber and emery, in the shape of a ring. This ring is clamped between two iron plates, B, and firmly held by screws, so that it cannot shift or change its position. Thus constructed it is applied to the saw mandrel and secured thereon, as the saw itself is, with a nut.

The saw, when operated on, is laid on the carriage or timbers of the mill—as shown in the engraving—which renders it easy of access during the job.

Many persons using this gummer speak highly of its qualities, and the proprietors are prepared to fill orders for them. It was patented on Nov. 15, 1864, by L. A. Dole. For further information address Dole, Silver & Deming, manufacturers, Salem, Ohio.



DOLE'S SAW GUMMER.

### The Largest Farm in the World.

I observe a note in your last issue, of an 8,000-acre farm, in Bureau county, Ill., and of Mr. J. S. Alexander's farm in Morgan county, Ill., both of which will pass for fair-sized Illinois farms. But the farm which is, no doubt, the largest cultivated farm in the world, and, I believe, the best, is owned and cultivated by M. L. Sullevant, Esq., formerly from the vicinity of Columbus, Ohio, now of Champaign county, Ill. He owns and presides over 70,000 acres of the best land on this hemisphere, 23,000 acres of which are under fence, and in actual improvement and cultivation; the balance is used for herding.

I will venture the opinion that there cannot be found five acres of unserviceable land on Mr. S.'s entire 70,000 acres. Their productiveness is unsurpassed. Almost all of Mr. S.'s farming is conducted by labor-saving machinery, so that it is estimated that, throughout, one man will perform the average labor of four or five, as conducted on small farms. He drives his posts by horse-power; breaks his ground by Comstock's "spaders;" mows, rakes, loads, unloads, and stacks his hay by horse-power; cultivates his corn by improved machinery; ditches any low ground by machinery; sows and plants by machinery, so that all his laborers can ride and perform their tasks as easy as riding in a buggy.

I had the pleasure of being present when he harvested a thousand acres of his wheat; this was done with ———'s "Header's"—about eight or ten men and twenty horses cut and safely stacked away about 200 acres a day, and performed the work better than I ever saw it by the old modes. To give all the improved modes of farming employed by this king of agriculture, would require more space than you would like to spare. Notwithstanding all this labor-saving machinery, Mr. S. employs from one to two hundred laborers, some two hundred horses and mules, and a large herd of working oxen.

Not having the exact data before me, I will not venture to give the enormous returns, in bushels or tuns, of the products of this great farm. Some estimate may be made from the magnitude of the farm, taken in connection with the fact that the quality of the soil is unequaled by the very best Sciota bottoms.

Mr. Sullevant's annual profits are becoming enormous, and put to shame the oft-repeated nonsense about economy of "small farms," which had its origin with English landlords, who wish to keep the small farmer with his nose upon an eternal grindstone. Time will soon clear away this error, and farming (except for garden vegetables) will be ruinous unless upon a scale large enough to employ modern agricultural machinery to advantage.—*Cor. Cin. Inquirer.*

### HART'S CRAVAT HOLDER.

The starched lawn neckerchief, and the heavy Italian silk tie, which swathed the neck in voluminous folds, have given place to a simple bow worn in front of the collar, leaving the neck free and adding much to the convenience and natty appearance of this portion of the masculine costume. The trouble has been that the closing neck button of the shirt had to perform the treble office of securing the binding, the collar, and the cravat, producing too much strain on one button.

*Fig. 1.*

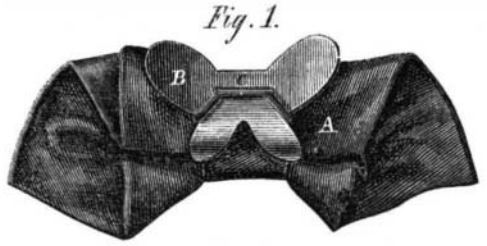
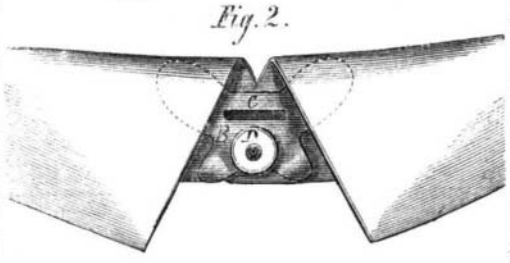



*Fig. 2.*




The device here illustrated is intended to relieve this dependence on the button and to keep the bow in shape. Fig. 1 shows a back or inside view of the knot and holder. A is the bow or knot, and B the holder. A slot, C, in the holder, which is of metal, silvered or enameled, receives the elastic loop, which then passes over the lower branches of the holder. These lower branches pass on either side of the button, D, and the upper branches pass under the collar. Fig. 2 shows the holder without the knot. By this device the knot or butterfly is held securely in place, but can be easily exchanged for another. The form and use of the holder can be readily understood by the two figures.

This very convenient invention was patented May 8, 1866, by Wm. H. Hart, Jr., and is manufactured by Hurlbut & Lavery, sole agents and manufacturers, No. 21 Bank street, Philadelphia, to whom all orders should be addressed.

### A Cheap Furnace for Chemical Experiments.

A correspondent who is an amateur chemist, sends a drawing and description of a cheap furnace, which he says he has used successfully for two years. He takes a piece of eight-inch stove funnel, twelve or fourteen inches high, and furnished with a cap at the top, which can be removed at pleasure. At the bottom a small hole is cut in the side to receive the pipe from a blower, and the whole funnel is lined inside with pipe clay mixed with sand.

Three inches from the bottom the lining is increased in thickness and receives some bits of wire, which form a grate. The blower is eight inches diameter and three wide, having four fans made of sheet iron, tin, or even pasteboard, as is also its case, and is driven by a small pulley belting from a larger one designed to be turned by hand. The whole arrangement can be secured to a board, that portion under the furnace being protected by sheet-iron.

In such a furnace our correspondent says he has melted cast iron and manganese in a few minutes. He prefers coke to coal, as giving a more intense heat. His suggestions appear to be valuable to amateurs who do not wish to incur the expense of a complete apparatus.



FROM THE STEAM PRESS OF JOHN A. GRAY & GREEN.