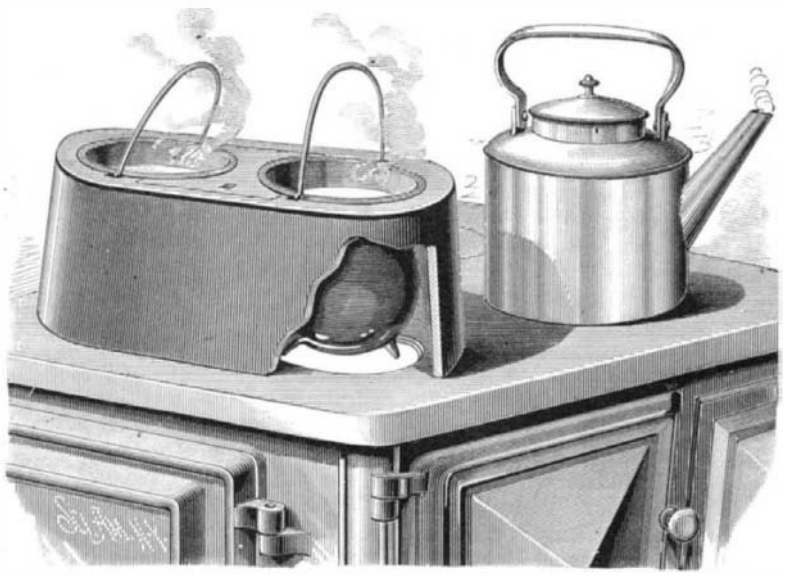
NEW STOVE ATTACHMENT.

The engraving shows an improved attachment for cooking stoves recently patented by Mr. James L. Wilson, of Calhoun, Ga. The object of the invention is to increase the heating power of the fuel by supporting boilers or kettles so as to expose more of their surface to the action of the fire.

The engraving shows the attachment applied to an ordinary wood or coal stove having the usual oblong orifice for receiving a clothes boiler or other heating vessel. The invention consists of a hollow oblong metallic box resting on the stove over the boiler holes and having its lower end open. In the top of this box is an opening closed by ordinary stove hole plates and fitted to the usual furniture of the stove. The engraving shows two pots or kettles suspended by the ears; of course any other heating or cooking vessel can be suspended in the same way. It will be seen that nearly the entire body of the vessel is received by the box and subjected to heat, so that the heating is quickly effected, saving both fuel and time.

Further information may be obtained by addressing the inventor as above.



WILSON'S STOVE ATTACHMENT.

Malonic Acid.

This acid was discovered in 1858 by Dessaigues, who obtained it by the action of bichromate of potassium on malic acid. In 1864 it was obtained synthetically by Hugo Mueller and by Kolbe. Ed. Bourgoin has recently improved upon all the previous methods, and thus describes his method in *Bulletin de la Société Chimique de Paris:* 100 grammes of chloracetic acid was dissolved in twice its weight of water, and the solution saturated with about 110 grammes bicarbonate of potassium. To this was added 75 grammes of pure pulverized cyanide of potassium. When this had dissolved he heated it carefully on a water bath; a brisk ebullition took place, accompanied by the evolution of heat. The liquid, at the close of the operation, was perfectly colorless. Double the volume of concentrated hydrochloric acid was added, the precipitated chloride of potassium removed, and the liquid saturated with a current of hydrochloric acid gas, an operation attended with a considerable elevation of temperature. More chloride of potassium is formed, and some chloride of ammonia, which was deposited on cooling. They are received on an asbestos filter. The liquid was evaporated on a water bath, the residue extracted with ether, which yielded on evaporation 70 grammes of perfectly pure malonic acid.

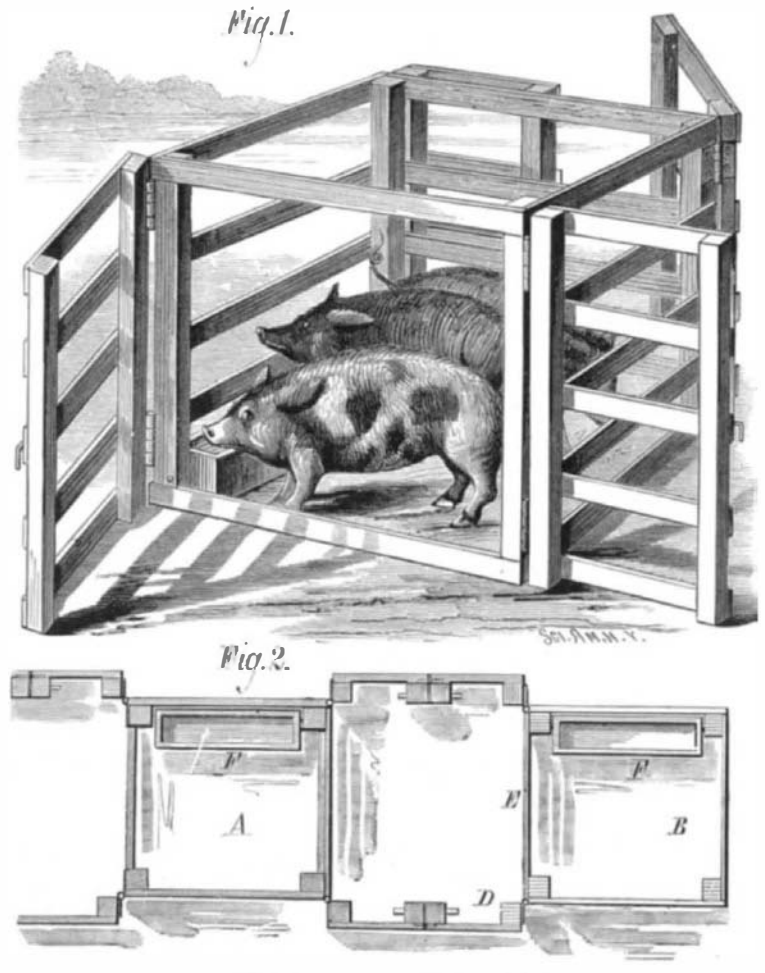
IMPROVED CATTLE PEN.

The engravings show a portable cattle pen made in sections that may be readily transported, and these sections are provided with hinged sides so that they may be easily joined together, forming a series of connected pens.

Fig. 2 is a plan view showing the manner of connecting the sections together. Each section consists of a quadrangular fence composed of vertical posts and horizontal rails or stiles. If desired, vertical palings may be employed instead of horizontal rails or bars. The sections are each provided with a trough, F, which is hinged or pivoted so that it may be turned up out of the way when not in use. Each section is provided with gates, D, on one or more sides, divided in the middle and arranged to swing outward. In the pen shown in the engraving the section, A, has two pairs of gates on two opposite sides, and the sections connected with it have gates on only one side.

The sections may each be used separately as a small pen, or they may be connected together to form a large inclosure. In the latter case the section, A, is arranged in the middle, with its gates on opposite sides opened outward, and the sections, B and C, are placed at the ends, with their gates, G, opened outward, so as to meet the gates of the middle section. The gates are connected to each other by means of the hooks and staples, which are also used for fastening them when closed.

This invention was recently patented by Mr. John C. Chew, of Logan, Iowa, who should be addressed for further information.



CHEW'S CATTLE PEN.

The Milling Industry in America.

Mr. Josef J. van den Wyngaert, who was commissioned by the Prussian Government to make a report concerning the Millers' Exhibition in Cincinnati, is said to have expressed the following opinions on the American industry of milling: In the different mills he had visited in the Eastern part of the United States he had found many excellently constructed, but also many primitive ones, built 30 or 40 years ago.

America had undoubtedly been the most advanced country on earth in regard to milling, and when anything was said at that time about American mills in Europe, as a matter of course only the best and most excellent ones were meant. Since then things have changed. While America, as well as England and France, had come to a standstill, Germany and Austria had excelled remarkably in the progress of this branch of business. The construction of mills in these two countries is to-day much better than that of American mills, and it was only in the last few years that America had made efforts and adopted the improvements of the Germans and Austrians, and taking them for a basis had made further progress. Thus the roller system, for instance, for the grinding of grain, had been transplanted from Germany to America. We had first met with it in Naples, and introduced it into Germany in 1874, from whence it had only in the very last years found its way into America.—*Oesterreichische Ungarische Mueller.*

Method of Determining the Fatty Acids Contained in Oils.

M. Carpentin takes a small flat-bottomed flask or a medicine phial holding about 250 c.c. Into this phial are measured 50 c.c. of the sample of oil, and 100 c.c. of alcohol at 90 per cent, and 3 or 4 drops of tincture of turmeric are added. The phial is then corked and violently shaken. The phial is then placed under a Mohr's burette containing a solution of 40 grms. pure sodium hydrate per liter of water.

As 40 grms. soda saturate 282 of oleic acid, 1 c.c. of the liquid, containing 0·04 grm. soda, corresponds to 0·282 grm. of oleic acid. If another fatty acid has to be determined this number is modified accordingly. The alkaline liquid is carefully dropped into the phial, which is shaken. When a red coloration appears it is corked, agitated for a considerable time till the yellow color reappears, the alcohol having extracted a fresh quantity of acid out of the oil. These operations are continued until the red color becomes permanent. The number of c.c. and the fraction of a c.c. consumed are then multiplied by 0·282 grm., in order to find the quantity of oleic acid present in the sample examined.

Painting a White Hearse Body.

Very little has been said in our columns of late on painting a white hearse, it being the only class of carriages painted in that delicate color. One reason why more hearses are not painted this color is for want of knowledge of its use, and how to apply it. We have seen several jobs finished this way, but they were very poorly executed.

To paint white, oil should be discarded after priming, and in the priming it is not advisable to use all oil in lead. Half oil and half turpentine, with a small quantity of driers, is preferable. Litharge is safest for under coats. After the body is primed, allow it to stand the usual time, and second coat with same color. When sufficiently dry, putty with white lead, putty made with rubbing varnish. Glaze or sheet all over smooth as possible, and if necessary, putty all screw holes and other bad places the second time, so as to have no places to reputty after job is in filling.

To make filling for white work, mix same as ordinary, using all dry lead. Apply this rather stouter than English or other powdered material. Rub carefully with pumice, which will give you a white ground or foundation. When rubbing, keep pumice stone clean, to avoid scratches; also wash clean, particularly in corners. Filling mixed as described is hard to remove from such places; let it stand until the following day, and sand off with fine paper. The job is now ready for color.

Mix your color from best grade of white and fine hard drying body varnish into a thick paste, and reduce with turpentine to whatever consistency your brush requires. Half elastic brushes are best for this work, as the color would be apt to curl or drag under camel hair blenders. Apply two coats of color, and add more hard drying varnish to whatever color is left, and apply with the same brush. Let this stand until dry, when rub down with fine pumice, and apply second coat with more hard drying added. Each coat of rubbing should have some of the white added. Place four coats on, and on the last coat, instead of using fine finishing varnish, you may use same as under coats and polish on it.

Polishing a body is very difficult and tedious, and a large number of our painters know very little about it. When the last rubbing coat is on, let stand for two weeks if possible, and rub with fine pumice, careful not to rub through. Wash clean and chamois dry. Next, rub with rotten stone and sweet oil, with a piece of clean chamois, leaning very heavy, but careful not to heat the varnish. Should the varnish become warm under the rag, stop until cooled.

When the rubbing is finished, sprinkle flour or pulverized slippery alum over the job, and it will remove any particles of oil or moisture that may remain. Most painters prefer flour; this can be taken off by using camel hair duster. After dusting, take a silk handkerchief and rub lightly, leaving your job white and clean. If properly cared for this body will outwear some of our best oil-coated jobs, with no risk of it turning yellow, and seldom cracks, unless sufficient time was not allowed between coats.—*Carriage Monthly.*

To Distinguish Artificial Honey from Bees' Honey.

We have long been aware that much of the honey sold in this country was innocent of any relationship with bees or their work, but we had hoped that the Swiss were more fortunate, that the famous Alpine honey was what it claimed to be. We learn from the *Swiss Bee Journal* (*Bienenzeitung*) that this is not the case, and that not only is glucose the adulterant, but also common molasses and sirup.

Dr. Planta-Reichenau says that the consumption of honey in Switzerland is so enormous that genuine bees' honey cannot be procured in sufficient quantity to meet the demand, hence an artificial product, called "table honey," is extensively employed. In the manufacture of this artificial honey starch sirup and colonial sirup are chiefly employed. The former is imported from France under the name of "glucose crystallisée," and is used for the finest quality of table honey, while the poorer and cheaper kinds are made by mixing it with cane sirup or molasses. Water, flour, and starch are seldom added because so easily detected; the same is true of glycerine.

A determination of the amount of ash does not suffice to distinguish it from real honey unless it is made entirely from best beet or cane sirup. The specific gravity furnishes no better criterion of its genuineness. Adulteration is more easily detected by mixing it with alcohol. A solution of 20 parts honey in 60 of water, when mixed with alcohol, gives a heavy white precipitate of dextrine, if glucose has been added, while natural honey only becomes milky under the same circumstances. The safest method is to determine the sugar. The grape sugar is determined directly in a weighed quantity of honey; an equal weight of the same honey is boiled with two per cent sulphu