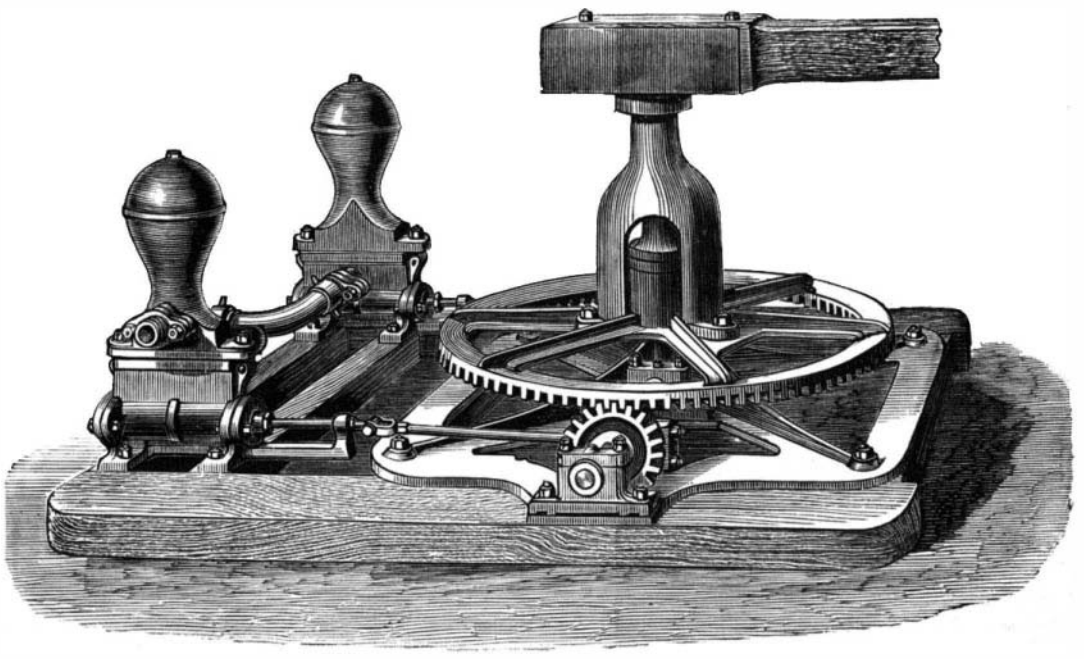
HORSE POWER PUMP.

We are constantly receiving inquiries, from farmers and others, as to the easiest and most economical way of bringing water from a moderately distant point into a dwelling or barn. Probably the cheapest plan and one of the most efficacious is to use a windmill to actuate a suitable pump, and some of our correspondents have availed themselves of this means; others, however, have found local objections to the windmill, and, possessing horses, have asked us for a method of devoting the power of their animals to the purpose of raising water.

One of the simplest and most compact machines designed to meet this requirement is illustrated in the annexed engraving. The beam to which the horse is harnessed turns by its vertical shaft an inverted crown wheel, which actuates two smaller pinions, the rotary motion of which, changed by simple means into reciprocating, works the pistons of the two pumps. This apparatus is an English invention, and is manufactured by Messrs. Hayward, Tyler & Co., of London. It is light and portable and easily constructed, while it is capable of raising a large body of water. Such an apparatus would be useful on any large farm for supplying stock with water, or for irrigating purposes. Any of our manufacturers of pumps and horse powers may get an idea from this illustration which they can modify to suit special requirements, by omitting one of the pumps or by substituting some other kind of pump, or by changing the mode of gearing. It would seem as if there would be a good demand for something of the kind which is compact, simple, and not too costly.



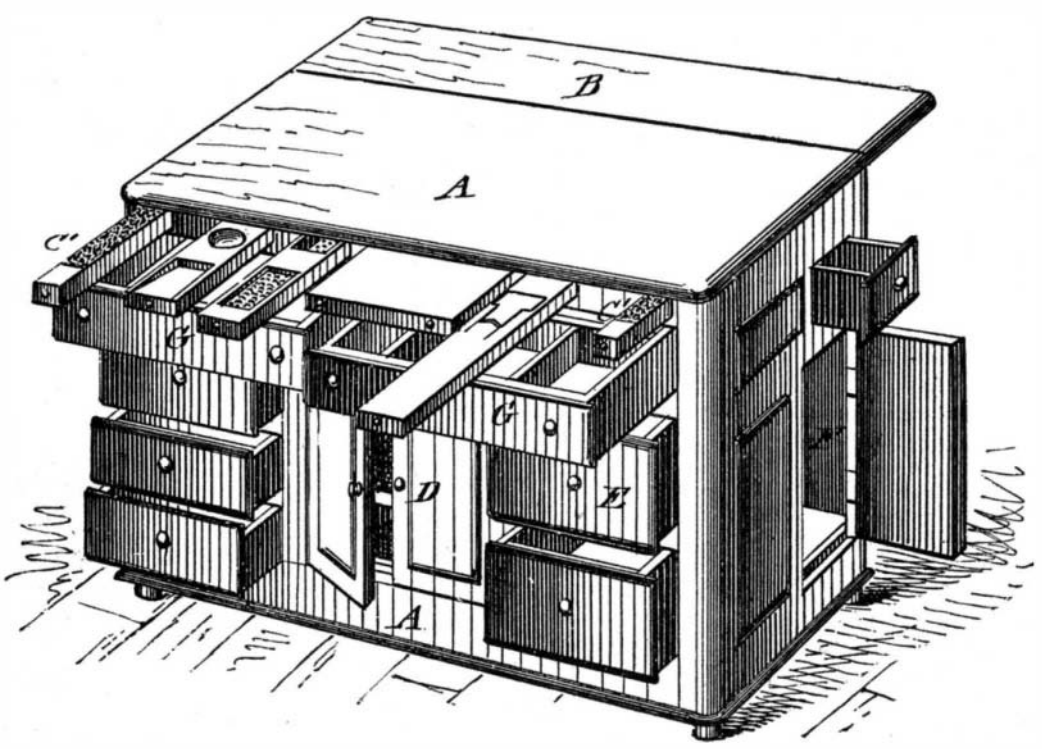
HAYWARD & CO.'S HORSE POWER PUMP.

IMPROVED KITCHEN FURNITURE.

Mr. George Holt, of Minneapolis, Minn., has recently invented an article of kitchen furniture which shows considerable ingenuity in economizing space, and contains places for nearly all the articles required for use in culinary operations, the utensils, etc., all being arranged so as to be ready at hand.

A represents the top or table; B is a hinged leaf at the rear side, supported on suitable slide pieces; and C is an ironing board that is placed in front corner slides, C', which are also made use of for sharpening knives. The central front part of the cabinet is arranged for shelves, D, forming a dish cupboard with hinged doors. At both sides of the shelves, D, are drawers, E, for miscellaneous articles—flour, sugar, meal, towels, etc.; and above the shelves, D, and drawers, E, are two drawers, G, of smaller hight, but with inside partitions, one drawer being for forks, knives, and spoons, the other for spices, etc. Below the top, and between the slides, C', are arranged various sliding devices, as a bread board, a vegetable cutter, a knife scourer, a grater, and others, which are drawn out as required, being pushed in after use. The space at the rear part of the cabinet is divided by a central partition into longitudinal chambers, F, for storing various larger articles of kitchen use, as tinware, potato mashers, etc., while longitudinal drawers, F', occupy the remaining available space.

Patented October 5, 1875. For further particulars address the inventor as above.



HOLT'S KITCHEN CABINET.

Progress of the Sewing Machine in Europe.

At the annual soiree of the employees connected with the extensive works of the Howe Sewing Machine Company, Glasgow, Scotland, recently held, the chairman stated that the British islands alone had taken a third of the machines (61,123) which the company had made in 1875 The little kingdom of Belgium, with her 5,000,000 of industrious people, took twice as many machines in proportion to population as Great Britain; but France, with her 36,000,000 of people, as yet took but half as many as Great Britain, with 33,000,000. Germany, with her 40,000,000 did no better. Italy and Spain, the former with 26,000,000 and the latter with 17,000,000, as yet purchased but a few hundred machines per year. Entire Scandinavia was an explored region; while Russia, with her 85,000,000 of active and rapidly progressive people, as yet received but the tenth part of what were now sold in Great Britain.

A little strong soap lather mixed with the starch will prevent flat irons sticking to linen.

Useful Recipes for the Shop, the Household, and the Farm.

To give black walnut a fine polish so as to resemble rich old wood, apply a coat of shellac varnish, and then rub it with a piece of smooth pumicestone until dry. Another coat may be given, and the rubbing repeated. After this, a coat of polish, made of linseed oil, beeswax, and turpentine, may be well rubbed in with a dauber, made of a piece of sponge tightly wrapped in a piece of fine flannel several times folded, and moistened with the polish. If the work is not fine enough, it may be smoothed with the finest sand paper and the rubbing repeated. In the course of time the walnut becomes very dark and rich in color, and in every way is superior to that which has been varnished.

To separate honey from wax, put honeycomb and all in a tin pan upon a moderately warm stove, adding a tablespoonful of water to each pound of honey. Stir occasionally with a piece of wire until the contents of the pan are in a liquid condition. Do not allow boiling to begin. Remove the pan from the fire and set it aside to cool. The cake of wax, to which all impurities will adhere, may then be carefully lifted off with a knife.

A good durable whitewash is made as follows: Take half a bushel of freshly burnt lime, slake it with boiling water; cover it during the process, to keep in the steam. Strain the liquid through a fine sieve, and add to it 7 lbs. of salt previously well dissolved in warm water; 3 lbs. of ground rice boiled to a thin paste and stirred in boiling hot; ½ lb. of powered Spanish whiting; 1 lb. of clean glue, which has been previously dissolved by soaking it well, and then hanging it over a slow fire in a small kettle, within a large one filled with water. Add 5 gallons of hot water to the mixture, stir it well, and let it stand a few days covered from dirt. It must be put on quite hot. For this purpose it can be kept in a kettle on a portable furnace. About a pint of this mixture will cover a square yard.

A process of tinning iron tacks is to triturate chloride of zinc with a large quantity of oil and heat it in an oscillating vessel. As soon as this has reached the proper temperature, throw in the tacks and the necessary quantity of metallic tin, and after a few seconds dip them out with wire gauze and cast them in water.

The removal of sand, etc., adhering from the molds to iron castings, generally accomplished by filing, is said to be effected far better by means of steel brushes. They are made of thin strips of steel, in the form of ordinary scrubbers, and also in that of whitewash brushes, and are reported to remain sharp for a long time, and to be far more convenient in use than the file.

Bronze powders: Bright yellow, copper 83 parts, zinc 17; orange, copper 90 to 95, zinc 5 to 10; copper red, copper 97 to 99, zinc 1 to 3.

A correspondent of the *Country Gentleman* reports excellent results for the following recipe for staining wood: 1. Wash the wood with a solution of sulphuric acid and water, made in the proportion of 1 oz. to a pint of warm water. Mix when wanted; put on warm and wash evenly over every part. 2. Stain the wood thus prepared with tobacco stain, using a piece of flannel or sponge, rubbing it in lightly. To make the stain, take 6 lbs. common shag tobacco, cover with water and boil, letting it simmer slowly away till of the consistence of sirup. Strain for use. 3. When entirely dry, brush it over with the following mixture: ½ lb. beeswax, ½ pint linseed oil, 1 pint boiled linseed oil. This may be omitted, and the wood simply varnished and polished instead. When it is desired to give the tone of light oak or maple, the solution of sulphuric acid should be much weaker, and only a light coat of the stain used. When a dark tone is preferred, two coats of the stain should be put on.

Linseed oil has been sold for pharmaceutical use mixed very largely with cod oil. The adulteration is detected by mixing 1⅛ ozs. of the oil with 0·4 oz. of nitric acid, and agitating. The liquid is then put by till the acid and oil separate; and if the oil has a darker brown color and the acid turns yellow, proof of adulteration with cod oil is manifest.

The following is a method of giving cast iron the appearance of bronze without coating it with any metal or alloy. The article to be so treated is first cleaned, and then coated with a uniform film of some vegetable oil this done, it is exposed in a furnace to the action of a high temperature, which, however, must not be strong enough to carbonize the oil. In this way the cast iron absorbs oxygen at the moment the oil is decomposed, and there is formed at the surface a thin coat of brown oxide, which adheres very strongly to the metal, and will admit of a high polish, giving it quite the appearance of fine bronze.

If wool be dyed black according to the following recipe, the dye, it is said, does not rub off, the fibers remain loose, and the wool has a desirable reddish cast: Boil the thoroughly washed wool well for an hour and a half in a bath composed, for 100 lbs. of wool, of 2½ lbs. of chromate of potash, 2½ lbs. of alum, ½ lb. of blue vitriol, and 2 lbs. of commercial sulphuric acid, and dye it, without rinsing, in fresh water, with 20 lbs. of logwood and 20 lbs. of Brazil wood. It is advantageous for the color to allow the wool to remain in the mordant for 12 hours.

Professor Charles A. Seely has invented a new mode of filtration. At the bottom of an open glass tube, say 1 inch in diameter, he places a piece of felting paper, and over this a piece of India muslin, which is secured around the tube by a rubber ring. The tube is filled with the liquid to be filtered, and is closed at the top with a rubber stopper, through which runs a piece of rubber piping. The tube is connected with the two bottles, so arranged that the water in the upper one flows down into the lower one, forcing out the air, which in turn runs through the rubber pipe, forcing out the liquid through the filtering material.

Washing the face night and morning in ½ pint of water to which the juice of 1 lemon has been added is said to be a good remedy for freckles.

The secret of raising fine quinces, according to a correspondent of *Inter-Ocean*, is to purchase the orange variety, and set the trees from six to eight feet apart in rich soil. Bandage the stem with two or three wrappings of old cloth as far down in the ground as possible, as the roots start from near the surface. Let the bandages run six or eight inches above the ground, then pack the soil a couple of inches around the bandages. This should be renewed every spring.

Waterproof glue may be made by boiling 1 lb. of common glue in 2 quarts of skimmed milk. This withstands the action of the weather.