the candles are arranged, and the carriages which support them; the dipping vat stands at one end of this frame. A double rail-way, one placed above the other, extends along the frame; and by means of a windlass, the connected carriages, each supporting a row of sticks, are advanced towards the vat, when they arrive there, the candles are dipped, and placed upon the lower rail-way, and carried back, to be again returned. There is a contrivance for weighing the candles, which consists of a long lever extending from front to back, along the upper part of the frame, and supported on fulcrum like a scale beam; several other matters of detail are also noticed by the patentee, as a wicking frame, &c.; in point of detail, however, the description is defective, leaving too much to be re-invented by any one who should attempt to construct the machine with no other aid than that which is afforded by the specification.

The claim is to the before described machine, and particularly to the rail-ways, the balance beam, the carriages, the sliding frames, the slides with catches, the wicking frame, and the lever for hoisting and weighing.

The objection to this form of claim is, that after including the whole machine, it particularizes certain individual parts, which, if the whole arrangement is new, is altogether unnecessary; whilst if the whole is not new, the general claim would endanger the validity of the patent.

SPECIFICATIONS OF AMERICAN PATENTS.

Specification of a patent for Coating Lead Pipes with Tin. Granted to THOMAS EWBANK, city of New York, May 18, 1832.

To all whom it may concern, be it known, that I, Thomas Ewbank, of the city of New York, have invented a mode of coating lead pipes with tin, in a more effectual manner than has been heretofore done, and by which the danger attending the use of such pipes for the conveyance of water, and other liquids, is obviated, whilst their cost is but little enhanced; and that the following is a full and exact description of my said invention.

I take the lead pipes, *after they have been drawn to the required size*, and I coat them with tin, either on both sides, or on the inside only, as may be desired. To do this I prepare a bath of melted tin, in a vessel of a suitable form and size, which may vary according to the size of the pipe to be tinned. I regulate the heat of this bath, so that the tin shall continue in a fused state, without becoming sufficiently heated to melt the lead. This may be ascertained either by the use of a thermometer, or by testing it by a piece of lead, or by such a mixture of lead and tin as will fuse at a given temperature: with a little experience, however, a workman will not find any difficulty in accomplishing this object without such aids. When the pipe is to be tinned on the inside only, I cover the outside with lamp-black and size, or with any other article which will prevent the ac-

tion of the tin upon it; I then blow powdered rosin into the pipe. When it is to be tinned on both sides, the rosin is to be blown, or otherwise passed into the pipe, and the outside also is to be sprinkled with it, and it is then ready for the process.

The melted tin should be kept covered with rosin, fat, or other suitable article, to prevent its oxidation, and to aid in the tinning. All that is necessary is then to pass the pipe through the melted tin, which, when the pieces are not of considerable length, may be easily managed by hand; or when of considerable length and weight, a rope and pulley, or any other suitable mechanical contrivance which the workman may prefer, may be resorted to.

I am aware that the coating of lead pipes with tin, simply, is not new, the same having been heretofore done, but in a manner less perfect than that which I have just described. The lead has been tinned in sheets, and afterwards made into pipes, or the pipes have been made and tinned, and afterwards drawn to the intended size. By neither of these processes, however, is the intended security obtained with the same certainty as by my process of tinning the pipes *after* they are otherwise finished. The coating of tin is thus rendered more perfect, and those fissures are avoided which the former processes can scarcely fail to produce.

I do not, therefore, claim as my invention the mere tinning of pipes made out of lead, but what I do claim is the tinning such pipes after they have been drawn to the proper size, as is hereinbefore set forth.

THOMAS EWBANK.

Specification of a patent for a mode of detaching horses from a carriage, either when running away, or whenever it may be desirable to effect that object, rapidly. Granted to ROBERT BEALE, city of Washington, District of Columbia, May 12, 1832.

Be it known, that I, Robert Beale, of the city of Washington, in the District of Columbia, have made an improvement in carriages, by which the horses may be suddenly disengaged when running away, or whenever required to be detached from the carriage quickly; called the safety carriage; which is described as follows.

The swingletree is attached to the cross bar by an iron fixture called a jointed clasp, formed as in the annexed figure; the knee part, marked A, resting against the back of the cross bar. This jointed clasp is held up against the underside of the cross bar by an iron shutter, or hinged clasp, formed thus, turning on a joint, or hinge, secured to the underside of the cross bar. To the end of the hinged clasp is attached an iron rod, or bolt, B, with an eye at its end. This rod, or bolt, passes through an opening in the cross bar, and has an iron spring key inserted through the eye, resting on the upper side of the bar, which secures

the jointed clasp from dropping; or the rod may be fixed permanently to the cross bar, projecting far enough below it to pass through a slot or mortise in the end of the hinged clasp, with a spring key inserted through the end of the rod, or bolt, to prevent the hinged clasp falling. To the end of the spring key is attached a cord which leads inside of the carriage, where it hangs loosely. Should the horses take fright, and become unmanageable, the cord is then to be pulled suddenly, which will draw the spring key from the eye of the rod, or bolt, let the hinged clasp fall, and with it the jointed clasp attached to the swingletree, and will disengage the horse from the carriage.

The tugs are open in front, thus, to allow the breeching to slip off freely. This breeching is made from a single strap of leather, with rings sewed to the ends, to hook over the tugs.

The shutter, or hinged clasp, may have its end turned up at right angles, and formed like a catch, or hook, and secured by a spring, fastened to the side of the cross bar, the cords being attached to the end of the spring. The shutter may, indeed, be held up in a great variety of modes, but the before described are sufficient to show the principles of my invention.

When it is desired to retain the swingletree, and let the horse go off with traces only, then a hinged clasp must be put on each end of the swingletree, with the jointed clasps secured to the ends of the traces, and the cords attached to the spring keys run through pulleys and are joined to the cord which leads inside of the carriage.

In the two-horse carriage, the shutters, on hinged clasps, are hung on the under side of the wheppletree, and the cords attached to the spring keys run along on the top of the wheppletree in a straight line, then pass around pulleys, and are joined to the single cord which leads inside, or outside, of the carriage. The pulleys are to cause the cords to run freely, and to draw the spring keys, or pins, from the eyes of the rods, or bolts, in a straight line.

An iron tube, with a flanch on one end, is fastened to the end of the pole. Over this is put a thimble, having a ring on each side, to which the breast straps are attached. This thimble slips off the end of the pole, when the horses are disengaged.

The mode of detaching the horses from the two-horse carriage is similar to that described for a single horse carriage.

In a four-horse carriage the leaders are disengaged from the pole in the same manner, by a jointed clasp, hinged clasp, spring key, and cord, as described for a two-horse carriage. The jointed clasp may be held up against the cross bar by a pin inserted through the jointed clasp into the hind part of the cross bar, to which pin the cord is attached.

The jointed clasp may also be secured by a spring fastened on the hind part of the cross bar, the cord being attached to the end of the spring. Springs, or friction levers, are secured to the carriage, and brought in contact with the hub in order to decrease the motion of the carriage when the horses are liberated, or before they are liberated.

This invention may be applied to field artillery, and it will enable the men to limber or unlimber the gun in less than half a minute. It may also be applied to wagons of every description, to ploughs, and harrows, and all kinds of agricultural implements drawn by horses, when required to be taken in haste from the carriage to feed, &c.

A forked piece of iron is suspended over the hound and front axle-tree to prevent its turning on the body bolt.

What I claim as my invention, and which I wish to secure by *letters patent*, is the before described apparatus for suddenly disengaging horses from carriages.

For a further illustration of my invention I would refer to the models and drawings of the same deposited in the patent office.

ROBERT BEALE.

ENGLISH PATENTS.

Patent granted to GEORGE LOWE, for an improvement in the manufacture of Gas for Illumination.

Mr. Lowe may lay claim, and justly, not to one only, but to a series of four inventions, each ingenious and useful, and in combination very valuable.

His first object is to purify the gas—his second, to evolve a greater quantity of a superior quality from the very same proportion of material, and in the very same period of time—his third object, to show the means of securing his first without new efforts—and his fourth is very similarly connected with the second, and includes the application of the whole apparatus to the attainment of the great end.

His stove is of three retorts, the section of each being a parabola. The furnace is as usual; but if, mechanically, his invention be ingenious, it is also chemically profound. He proposes to introduce atmospheric air, heated to 700 degrees of Fahrenheit, or even hotter still, either above, or over the surface of the fuel in the retorts, to bring it in contact with the sulphuretted hydrogen gas cooled from the coking coals in the retort during the process of their decomposition, and with the other gaseous and vaporous exhalations from lime-dreg water, ammoniacal liquor, and other fluids introduced under the furnace. By the combination of the atmospheric air (heated as we have said) with these gaseous evaporations, and their consequent ignition, he produces a sulphuric acid, which, mixing with the pure gas intended for illumination, as it passes the mains, &c. purifies it of those deleterious matters which have hitherto so lessened its brilliancy, equability, and utility. To effect these purposes he has a vessel with lime-dreg water, and one with ammoniacal liquor under the furnace; he has a flue or passage beneath, or at the side of the furnace for the entrance of the atmospheric air, affording the