

containing incandescent carbonaceous fuel, substantially as and for the purposes described. 2nd. The method hereinbefore described in treating natural gas to produce a fixed gas, the same consisting of heating natural and hydrocarbon vapour in a chamber containing incandescent carbonaceous fuel, substantially as and for the purposes described. 3rd. The method hereinbefore described of treating natural gas to produce a fixed gas, consisting in heating natural gas in a chamber containing incandescent carbonaceous fuel, and adding a volatile hydrocarbon to the gas in said chamber, substantially as and for the purposes described. 4th. The method hereinbefore described of treating natural gas to produce a fixed gas, the same consisting in heating natural gas and a volatile hydrocarbon in a chamber containing incandescent carbonaceous fuel, and passing the gases thus combined through a second heating-chamber, substantially as and for the purposes described. 5th. The process above described of treating natural gas of varying quality, and converting it into an illuminating-gas of the desired candle-power, by passing the natural gas in connection with a jet of steam up through and in direct contact with an incandescent bed of coke, anthracite coal, or similar substance which forms the bed of fuel in any water-gas apparatus or generator, and simultaneously spraying on top of the bed of fire any suitable hydrocarbon by means of a stream of natural gas or its equivalent under pressure, and then passing the combined gases thus formed through a superheater, substantially as described and for the purposes herein set forth. 6th. The process described of manufacturing gas which consists of converting natural gas of varying quality into illuminating-gas of the desired candle-power, by passing the natural gas together with steam through a body of incandescent or highly-heated fuel, whereby decompositions and recompositions are effected and the natural gas is converted into a fixed illuminating-gas. 7th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into illuminating gas of the desired candle-power, by passing the natural gas together with steam through a body of incandescent or highly-heated fuel, whereby decompositions and recompositions are effected, and the natural gas is converted into a fixed gas, and mixing with such gas, hydrocarbon vapour for forming an illuminating gas. 8th. The above described process of manufacturing gas, which consists in converting natural gas of varying quality into illuminating gas of the desired candle-power, by passing the natural gas together with steam through a body of incandescent or highly-heated fuel, whereby decomposition and recomposition are effected and the natural gas is converted into a fixed gas, and simultaneously carbureting such gas by injecting into it a suitable proportion of hydrocarbon by a jet of natural gas or its equivalent. 9th. The process above described of converting natural gas into illuminating gas, by mingling with it in the gas-scrubber, a combined jet of crude petroleum or naphtha and steam introduced under heavy pressure, and then passing the product through a bed of incandescent coal, coke, or similar substance, and from thence to a superheater, substantially as described and for the purposes herein set forth. 10th. The process above described of manufacturing gas which consists in converting natural gas of varying quality into an illuminating gas of the desired candle-power, by passing the natural gas through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel, and decomposition and recomposition are thereby effected and the natural gas is converted into a fixed gas, and simultaneously carbureting such gas by injecting into it a suitable proportion of hydrocarbon by means of a jet of natural gas, steam, or its equivalent, as herein specified. 11th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into an illuminating gas of the desired candle-power, by passing the natural gas through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel and decomposition and recomposition are thereby effected, and finally passing the mixture of gases thus formed through a heated fixing-chamber or superheater, whereby the natural gas is converted into a fixed illuminating gas of the desired candle-power. 12th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into an illuminating gas of the desired candle-power, by first carbureting the natural gas by mixing it with any suitable hydrocarbon, and then passing the natural gas thus carbureted in connection with steam through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel and decomposition and recomposition are thereby effected, and the natural gas and steam and hydrocarbons are converted into a fixed illuminating gas. 13th. In connection with the above described process of converting natural gas into an illuminating gas, by passing it through a bed of highly-heated fuel, the method of introducing the natural gas to the bed of fuel by first passing steam through the bed of fuel, and afterwards passing through said fuel the natural gas and shutting off the steam, as herein described and for the purpose set forth. 14th. The process above described of manufacturing gas, which consists in converting natural gas of varying quality into an illuminating gas of improved candle-power, by passing natural gas together with steam through a body of incandescent or highly-heated fuel, whereby it comes into intimate and direct contact with said fuel and decomposition and recomposition are thereby effected, and then passing the gases thus formed through a heated fixing-chamber or superheater and natural gas and steam become converted into a fixed illuminating gas of improved candle-power. 15th. The process above described of manufacturing gas, which consists of converting natural gas of varying quality into illuminating gas of the desired candle-power, by passing the natural gas through a body of incandescent carbonaceous fuel which has been highly heated by internal combustion, whereby decompositions and recompositions are effected, and the natural gas is converted into a fixed illuminated gas. 16th. The process above described of manufacturing gas, which consists of converting natural gas of varying quality into illuminating gas of the desired candle power, by passing the natural gas together with steam through a body of incandescent carbonaceous fuel, which has been highly heated by internal combustion, whereby decompositions and recompositions are effected and the natural gas is converted into a fixed illuminating gas.

No. 26,573. Washing Machine.

(*Machine à Laver.*)

Narcisse Leger, St. Isidore, Ont., 2nd May, 1887; 5 years.

Claim.—1st. In a washing machine, the combination of the spindle D, having the claws *c* secured to its end, with the bevel pinion E and the bevel wheel F journaled in the standards C and G, substantially as herein shown and described. 2nd. The combination of the spindle D, having the claws *c* fixed to its end, the shoulder *f* and the groove *e* formed in it, with the spring H, pinion E having in its eye a key fixed to slide in the groove *e* and the bevel wheel F having the hand lever *d* and journaled in the standards C and G attached to the hinged cover B, as shown and described.

No. 26,574. Process and Apparatus for Drying Various Materials. (*Procédé et Appareil pour Sécher Divers Objets.*)

John H. Lorimer, Philadelphia, Penn., U.S., 2nd May, 1887; 5 years.

Claim.—1st. The herein described process for treating a textile material to be tinted, bleached, or disinfected, which consists in causing the material to be passed back and forth through a closed chamber, and exposed to strong currents of air impregnated with a coloring, bleaching, or disinfecting re-agent in a gaseous, or finely divided condition, which substances are drawn or forced directly through the material to be treated, substantially as and for the purpose specified. 2nd. The herein described process for treating a material to be tinted, bleached, or disinfected and dried, which consists in causing the material in a wet or moist condition to be passed back and forth through a closed chamber, and exposed to strong currents of air, impregnated with a coloring, bleaching, or disinfecting re-agent, which substances are drawn or forced directly through the material to be treated, and the action being continued sufficiently long to thoroughly dry the said material, substantially as and for the purpose specified. 3rd. A close drying chamber, through which a drying medium is caused to circulate, in combination with two endless aprons adapted to lie close together to hold the material to be dried and arranged to pass back and forth within the drying chamber, the aprons being brought outside the chamber at two places, one to form the feeding and one to form the discharging parts thereof, whereby the goods to be dried may be placed upon the aprons, and then conveyed through the drying chamber, and after being dried discharged again, guiding rollers for the aprons, and suitable devices for injecting into said drying medium, a fluid or gas which is conveyed to the material to be dried and caused to act thereon, the drying medium being the vehicle by which the fluid or gas is brought into contact with the material to be treated and dried, substantially as and for the purpose specified. 4th. The combination of the inclosed drying chamber, having openings for the admission of the endless belts, and provided with openings with a fan or blower to cause a circulation of air through said drying chamber, the two endless belts or aprons, guiding rollers therefor to guide said aprons back and forth in said drying chamber and in the path of the air currents and convey the said aprons outside or exterior to the closed chamber at two places for the feed and discharge, and suitable devices for injecting into said drying medium a fluid or gas, which is conveyed to and through the material to be dried and caused to act thereon, the drying medium being the vehicle by which the fluid is brought into contact with the material to be treated and dried, substantially as and for the purpose specified. 5th. A close drying chamber, through which a continuous vertical column or current of dry air is passed, in combination with two endless aprons of open-work adapted to lie close together to hold the material to be dried, and arranged to pass back and forth through the continuous vertical current of dry air, exposing both sides of the material to be dried in alternation to the said current of dry air, and guiding rollers for said aprons to guide them back and forth within the chamber, and bring them out through openings therein for the feed and discharge, the construction being such that the material is fed into the machine and delivered from it in an atmosphere which is cool and comfortable to work in, and is carried through a hot atmosphere within the close chamber and in which the dry air is passed directly through the sides of the said material to be dried while in the custody of the apron, substantially as and for the purpose specified.

No. 26,575. Starting Device for Tramway and other Vehicles. (*Appareil de Mise en Marche des Voitures de Tramway et autres.*)

John Gilmore and William R. Clark, London, Eng., 2nd May, 1887; 5 years.

Claim.—1st. The combination, with a draw-bar of train, car, or other vehicle, of a rocking bar, a pawl carried in any suitable part of the frame, the said pawl engaging with a ratchet wheel or for forming part of carrying wheel or wheels, substantially as described. 2nd. The guiding of such a pawl by means of a pivoted cam guide, so that it engages with the ratchet wheel in the upward travel and back clear of the ratchet wheel on its downward travel, substantially as described. 3rd. The combination, with the draw-bar so fitted, of a locking apparatus operated by a for treadle at the pleasure of the driver, which automatically locks the bar, so as to throw the ratchet starting gear out of operation until released by the action of the driver, substantially as described.

No. 26,576. Hollow Ware, such as Vases, Boxes, etc. (*Utileuses tel que Vases, Boîtes, etc.*)

William H. Hoyt, Stamford, Conn., U.S., 2nd May, 1887; 5 years.

Claim.—1st. As a new article of manufacture, hollow-ware, made of vegetable pith, substantially as described. 2nd. A vase or other hollow article, made of the pith of corn stalks, the pith being cut in