

## NOTES OF THE PATENT DECISIONS OF THE COURTS.

The Cawood patent for an "improvement in the common anvil or swedge block, for the purpose of welding up and reforming the ends of railroad rails when they have exfoliated or become shattered from unequal wear," has again been construed and its validity sustained by the Supreme Court of the United States in five suits brought by Turrell against the Illinois Central Railroad Company and four other companies respectively.

The drawing annexed to the Cawood patent represents a bed sill on which is placed an anvil or swedge block of cast iron, across the face of which there are recesses or dies shaped like the side of the rail to be repaired. A solid and fixed block, cast as part of the anvil, is also represented with its side face shaped to the side of the rail when placed in its natural position, and a movable press block held down upon the anvil by dovetailed tongues and grooves, and operated by two eccentric cams, moving it back and forward, towards and from the fixed block. The face of the movable block is also shaped to fit the side of the rail next to it, and the blocks grasp the rail on each side while its ends are being reformed, the movable one having sufficient travel to allow the rail to be extricated without altering its vertical position.

The mode of use is as follows: The rail and the piece of iron to be welded on having been heated, the former is swung from the fire into the open space between the blocks, when, by half a turn of the cams, the blocks are closed upon it. The welding piece is then laid on top of the rail and leveled up by a swage held by the smith. The claim of the patent is for "the movable press block, having its edge formed to the sides of the rail, in combination with another block with its edges of a similar but reversed form (the movable block to be operated by two cams, or in any other convenient manner), for the purpose of pressing between them a T or otherwise shaped rail."

Viewing the claim as interpreted by the description and drawing, it is not difficult, the court thinks, to discover what the patentee supposed he had invented. It was not any kind of movable press block combined and operated in any way, with any kind of fixed block, to effect any useful result. His avowed purpose was to form a mechanism for welding up and reforming the ends of exfoliated and crushed rails, or, rather, to hold them in a convenient position for such welding and reforming, at the same time preserving their shape. His manner of accomplishing this result was evidently considered by him as of the very essence of the invention. The rail, when on the anvil, is to be confined on three of its sides, as in a mould; on one side it is to be supported by a fixed block, part of the anvil itself, shaped reversely so as to fit the shape of the rail; on the other side it is to be supported and held in place by a movable block with a face adjusted to the shape of the rail on that side, the movable block being capable of advance toward the fixed block, and of retrogradation after the rail is placed on the anvil; the rail is also, when in place, to be supported under its base by the anvil. It thus has a bottom support and two side supports.

The court, having thus construed the patent, then proceeds to examine the devices which the railroad companies claimed anticipated Cawood's invention. These devices were the angle-iron machine, the bayonet machine, and the Church machine.

The angle-iron machine does not contain the principle of the invention described in Cawood's patent. There are points of resemblance between these machines, but there are also very substantial differences. While the purpose of the Cawood machine is to aid in mending rails already made, the angle-iron machine is to assist in welding together, at right angles with each other, two iron bars, making a fillet in the interior angle to strengthen the rail when made. To effect this, the fixed block on the anvil has necessarily a peculiar construction, unlike that in the Cawood machine. It is beveled or rounded off at the top of the face opposite the movable block, so as to give room for the formation of the fillet. And not only is the face of the fixed block unlike that of the fixed block in the Cawood machine, but its function is entirely different. It is to furnish support for one of the two bars designed for the formation of the angle iron. One entire limb of the angle iron is laid upon the top of the block, unconfined laterally, and there exposed to the hammer, the block being the anvil. The iron is thus left free to spread out in both directions, instead of being prevented from spreading laterally by the press block, as in the Cawood machine. Again, in the angle-iron machine, no provision is made for a bottom support for the rail.

The bayonet machine used at the Springfield Armory before and since 1850, for forging parts of bayonets, is, in form and substance, nothing but a hinge vise with a peculiar shape of the jaws, intended to facilitate operations upon the shank and socket of a bayonet, while the Cawood machine is an improved anvil, not a vise.

The Church machine, patented in England in 1846, while employed for strengthening and flattening the rails for railways, is totally incapable of performing the work of the Cawood machine. It is not an anvil. There is no fixed block cast as part of an anvil. There is a stationary die, part of a frame, against which one side of the rail is placed to resist the lateral pressure exerted upon it by a sliding lateral die on the other side of the rail, and above is a horizontal bar, which is forced downwards by a series of jointed levers, carrying another die upon the upper surface of the rail. There was nothing, therefore, in any of the three patents above named which anticipated the Cawood invention.

The court further holds that Cawood's claim for moving the blocks by cams, or "in any other convenient manner," entitles him to move the blocks by any means adapted to the work the machine was intended to perform.

The court, in conclusion, decrees that "The Illinois Central," "The Etheridge," "The Whitcomb or Cleveland Block," machines are infringements of the Cawood patent; but that the "Michigan Southern," "The Bayonet vise," "The Beebe & Smith" machines are not such infringements.

The infringement suit of Herring vs. Nelson has just been decided. This suit was brought on the re-issued letters patent granted to John Deuchfield for an improvement in cooling and drying meal. The main questions in the case, and those on which it turned, were whether or not the re-issued letters patent were for the same invention as the original patent, and whether or not new matter had been introduced into the specification, contrary to the provisions of section 53 of the patent act of 1870. The original claim consisted only in a combination of parts or elements. No device was claimed, as the invention of the patentee, which entered into the combination. Under the patent, as originally issued, it was therefore quite plain that no infringement could be made out without showing a use by the defendant of the complete combination with all its elements, for that was the thing patented. The combination, of course, disappeared when any element of it was omitted. In the re-issued letters patent, however, a new claim was added, for a combination of parts or elements, each of which made part of the original claim. Under this claim the operation of the re-issued letters patent was greatly enlarged beyond that of the original letters patent. It entitled the patentee to exclude everybody from using the combined elements of such new claim, while the original letters patent would be effectual only to exclude the use by others of the elements of the new claim when combined with the other elements of the original claim. It therefore enabled the patentee to make out an infringement by showing a use of the combination specified in the new claim, which omitted a number of the elements combined in the original claim. This question, namely, whether or not the re-issued letters patent were for the same invention as the original patent, the court decides in favor of the complainant. It holds that a sub-combination of elements which coact in the production of a perfected joint result can be rightfully claimed in conjunction, since they constitute a true combination in the sense of the law, and not a case of juxtaposition.

In regard to the second question in the case, namely, whether or not new matter had been introduced into the specification, the evidence showed that the drawing attached to the re-issued letters patent were the same as were annexed to the original. The mechanical structure, so far as the machine came under the new claim in the re-issue, was exactly the same as was described in the original specification up to that point. Nor was anything added to the description of the further mechanical structure of the machine as originally described. Looking at the mode of operation of the machine, as set forth in the original specification, the re-issued letters patent made no alteration in it, so far as the machine came under the new claim in the re-issue. The mechanical arrangements were all unchanged, the mode of operation of the several parts was correctly described, and the results of the action of the whole was correctly stated. But it was obvious that while the combined action of all the parts produced the complete result, yet that the mere cooling and drying of the meal was the result of that part of the machinery which was covered by the new claim in the re-issued letters patent. The court sustains the re-issued letters patent on this second question, and holds that the doctrine of *Vance vs. Campbell* (1 Black, 429), namely, that the use of a lesser number of elements than are contained in the patented combination is no infringement because not the same invention, does not apply to the practice of reissuing patents; and that while it is true that the law requires that re-issues shall be for the same invention as the originals on which they are based, yet it is no departure from this law to make separate claims to sub-combinations which were originally joined in one.

## New Agricultural Inventions.

George W. Gordon, of Beverly, O., has patented a novel mode of Unfastening the Latch of a Gate from either side, without dismounting from a horse's back. It consists in the employment of a lever, middle-pivoted on a standard that is itself supported on the top rail of gate and connected with the latch or latches. If a horseman approaches from one side he raises, and if from the other he depresses, the lever. He then pushes with the lever until the gate is open, and closes it by reversing the direction of his push.

Willis Armstrong, James G. Smith, and John F. Armstrong, Owensville, Ind., have patented a Stump Burner, which consists of a conical sheet iron hood provided with a chimney, fuel door, draft holes, and handles. To use the burner it is placed over the stump to be burned and fuel is placed on or around the latter. The fuel is then ignited, the fuel door closed, and the draft slide opened. The fire will soon become intense, and being concentrated around the stump and the flame tending upward, and the radiation of heat being for the most part prevented, the stump will be rapidly consumed.

George H. Smith, of Freeport, Ill., has patented a Gate, which is an improvement in the class of farm gates which are supported by pivoted bars and move in a vertical frame when opening and closing, thus describing the arc of a cir-

cle, but at the same time preserving a horizontal position. The improvement relates to the construction and arrangement of the bars that support the gate, and the connection of latch or locking devices therewith in such manner that the gate is prevented sagging or swaying, operates more easily than others of its class, and is locked shut at both ends simultaneously.

## Astronomical Notes.

BY BERLIN H. WRIGHT.

PENN YAN, N. Y., Saturday, December 29, 1877.

The following calculations are adapted to the latitude of New York city, and are expressed in true or clock time, being for the date given in the caption when not otherwise stated.

## PLANETS.

Mercury sets	6 6 evening
Venus "	8 24 "
Mars in meridian	6 06 "
" sets	0 21 morning
Jupiter "	5 01 evening
Saturn in meridian	4 35 "
" sets	10 08 "
Uranus rises	8 47 "
Neptune in meridian	7 38 "
" sets	1 15 morning

## FIRST MAGNITUDE STARS.

Sirius rises	7 04 evening
Procyon "	8 39 "
Betelgeuse "	4 48 "
Regulus "	8 43 "
Spica "	1 24 morning
Aldebaran in meridian	9 54 evening
Vega sets	8 53 "
Altair "	7 40 "
Fomalhaut sets	8 18 "
Capella in meridian	11 32 "
7 stars (cluster) "	9 05 "
Vernal equinox "	5 26 "

## REMARKS.

The earth is nearest the sun December 31, being 3,070,538 miles nearer than it was July 3. The sun is slowly moving northward, and the days are as slowly increasing in length and the duration of twilight lessening. The sun rises and sets 31° 18m. 20s. south of the east and west points of the horizon.

Mercury sets 1h. 26m. after the Sun, at a point in the horizon 2° north of the sunset point. It is in *Sagittarius*, and there are no conspicuous stars in the vicinity which could be mistaken for the planet. Venus is the most conspicuous object in the evening sky; she is in *Capricornus*. Mars is directly south in early evening, in the constellation *Pisces*. His position is not marked by any bright stars. Jupiter sets 1h. 21m. after the sun. He is in *Sagittarius*, 7° north-east of the "Milkmaid's Dipper." Saturn is southeast of Mars, in *Cetus*, almost directly south 10° of the second magnitude star Menkar. Uranus rises 4m. after the brilliant star Regulus in the handle of the Sickle in *Leo*.

## NEW BOOKS AND PUBLICATIONS.

THE ART OF HOUSE PAINTING. By John Stevens. John Wiley & Sons. Publishers, New York. Price 75.

This is a clear and comprehensive record of the observations and experiences, during many years, of a practical worker in the art. It is full of valuable suggestions and is designed to instruct and assist in the everyday work of painters and others. Its directions and cautions for outside and inside work are very minute and particular. All who build houses, as well as those who live in them, will find many hints which they can use to their advantage.

A GUIDE TO THE DETERMINATION OF ROCKS. By Edward Jannettaz. Translated from the French by Geo. W. Plympton. C.E. D. Van Nostrand, Publisher, New York. Illustrated.

This well known and standard work of the French author has been translated with a view to supplying students with a desirable supplement to the ordinary course of geology, at the same time affording an easy introduction to the larger treatises on lithology. Its thoroughly practical character, together with the simplicity of the methods of examination, will claim the favorable notice of teachers and learners of the department of science. It embraces a description of the more important minerals from the lithological point of view; the method to be followed in practically determining rocks and a dichotomic table for determining rock species.

LETTERS TO WOMEN ON MIDWIFERY, ETC. By Joel Shew, M.D. S. R. Wells & Co., publishers. New York. Price \$1.50.

This is one of Dr. Shew's best and most useful books, which has been for some time out of print. The book is particularly designed for the use of women, and it aims mainly to prevent mistakes and diseases by pointing out the proper course to be pursued in given contingencies.

## Inventions Patented in England by Americans.

From October 9 to November 23, inclusive.

AERIAL BATTERY.—A. W. Gittens, New York city.  
 BALE TIES.—S. J. Chapman et al., Charleston, S. C.  
 BOTTLE STOPPER.—W. Hicks, Brooklyn, N. Y.  
 BOBBINS.—M. J. Nealon et al., Chester, Pa.  
 BRICK MACHINE.—H. C. Sargeant et al., New York city.  
 BRUSHES, MANUFACTURING.—I. H. Hyatt, Newark, N. J.  
 BUTTON HOLE LINING.—D. Harris, Brooklyn, N. Y.  
 CARBURIZER.—D. E. Bangs et al., Boston, Mass.  
 CHURN.—J. L. Sprague, Hermon, N. Y.  
 COAT.—J. Paret, New York city.  
 CONDENSER.—W. E. Sudlow, New York city.  
 COTTON PRESS.—S. H. Gilman, New Orleans, La.  
 COTTON REEL.—W. Grever, Holyoke, Mass.  
 ELECTRO-MAGNETIC HYDRAULIC ENGINE.—K. C. Atwood, New York city.  
 EMBOSsing MACHINE.—C. L. Nagel, Brooklyn, N. Y.  
 EYELET.—J. Whitehead et al., Cranston, Pa.  
 FEED ROLLER REGULATOR.—C. H. Chapman, Mass.  
 FOOD FOR ANIMALS.—J. S. Kirk et al., New York city.  
 GAS REGULATOR, ETC.—M. W. Kidder, Boston, Mass.  
 HARVESTING MACHINE.—W. F. Goodwin, Stetton, N. J.  
 HORSESHOE.—J. S. Williams, Riverton, N. J.  
 HORSESHOE, MAKING.—J. D. Billings, New York city.  
 HYDRAULIC MACHINE.—S. Marsden, St. Louis, Mo.  
 INHALER.—L. E. Fulton et al., Potsdam, N. Y.  
 IRONING MACHINE.—T. S. Wiles, Albany, N. Y.  
 KEY RING.—J. S. Birch, New York city.  
 KILN.—Professor H. Wright, Philadelphia, Pa.  
 LEATHER-CRIMPING MACHINE.—S. W. Jamison, Brooklyn, N. Y.  
 METAL TAPPING DEVICE.—W. Doward, Rochester, N. Y.  
 METAL EYELETS.—J. Whitehead et al., Cranston, Pa.  
 MECHANICAL MOVEMENT.—W. F. Goodwin, Stetton, N. J.