

## Correspondence.

## Crystallization of Honey.

To the Editor of the Scientific American:

In your last issue you endeavor to answer a correspondent who does not want his honey to candy or crystallize. Now all honey will crystallize if kept cool, at least this is the rule (with seldom an exception), and this also is an excellent proof of the purity of the honey. This product is not injured in the least by crystallization, but if one objects to it, all he need do is to keep it air-tight and warm; but it should be allowed to remain, say two weeks, after being taken from the hive in an open vessel to allow it to ripen.

W. K. MORRISON.

Brooklyn, N. Y., March 24, 1893.

The Plans and Calculations for the Cruiser Bancroft.  
To the Editor of the Scientific American:

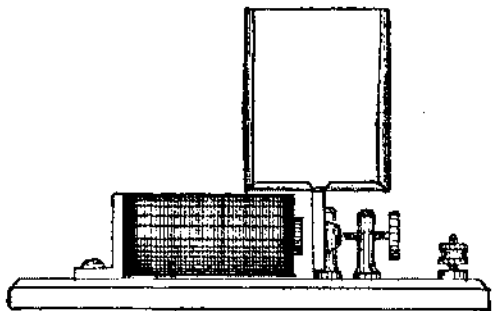
In a recent issue of your paper in which you give a very good account of the U. S. practice cruiser Bancroft, and her trial trip, you speak of her lines and model having contributed much to her remarkable speed, and say that they were made by the late Constructor Gatewood, of the U. S. navy. Allow me to correct you on this point. I have seen the original plan made by Constructor Gatewood, which is for a cruiser 10 feet 10 inches deep and of 800 tons displacement. I have also seen the plan from which the Bancroft was built, which is an entirely different model, and is 11 feet 6 inches deep, of 830 tons displacement. Mr. Charles R. Hanscom, now superintendent of the shipyard department of the Bath Iron Works, was in charge of the work, and Mr. A. B. Cassidy was the draughtsman. Mr. Hanscom made all the plans and calculations of displacement, stability, shearing stresses, etc., and wrote the specifications for this ship, which were approved by Chief Constructor Wilson and adopted by Secretary Tracy. By giving such publicity as you think advisable to this statement, you will put the credit for the design of the Bancroft where it belongs.

THOS. W. HYDE.

Bath, Me., March 25, 1893.

To the Editor of the Scientific American:

In repeating the experiments on the "Persistence of Vision," described by Dr. T. O'Connor Sloane in the SCIENTIFIC AMERICAN of January 21, it occurred to me



to use an electrical vibrator for producing the results instead of the tuning fork which was described. This method has the advantage of allowing a better study of the figures, because of constant vibration. The card holder can be attached to the mechanism of an ordinary electric bell, or a vibrator can be constructed for the purpose. In this case a greater amplitude of vibration can be obtained. The spring supporting the armature should be very weak, and the current used should be just strong enough to move the armature. By this method an amplitude of vibration of three-eighths of an inch or more can be obtained.

By drawing the designs on the tracing cloth used by architects and engineers the results can be projected on a screen with a lantern, and thus be made visible to a large audience.

RICHARD H. RICH.

Beverly, Mass., January 30, 1893.

## Swedged Screws.

To the Editor of the Scientific American:

The chance perusal of an issue of your paper containing an account of the process of cold-forging wood screws, as practiced by the American Screw Company, calls to mind an interesting and perhaps not well known chapter in the history of the art.

For many years prior to 1890 resided in Utica, N. Y., a gentleman of the name of Harvey J. Harwood. In early life, Mr. Harwood was a working machinist, a vocation he left later on, to take up the business of photography. This business he followed for many years. Being of an inventive turn of mind and retaining his taste and love for mechanical matters, he experimented for some years, and eventually invented and constructed a machine for cold-forging or swedging wood screws. During his declining years Mr. Harwood was fond of visiting the shop in Utica in which the writer was at that time employed; and gaining his acquaintance, and, to a certain extent, his confidence, I was several times invited to inspect his machine, a privilege of which I gladly availed myself. While the

machine was somewhat crude in design and much too light for its work, it made screws, samples of which I still have.

About 1888 a gentleman, said to be a representative of the American Screw Company, visited Utica, and in company with an acquaintance of mine called on Mr. Harwood, who was then an old man, enfeebled in mind and body.

The next day the Harwood machine was brought to the shop, carefully boxed and shipped to the American Screw Company. The published details of the American Screw Company's machine show great similarity to those of Harwood's, the forming dies being apparently identical with those of Harwood. Mr. Harwood was a man of singular truthfulness and transparency of character, and he always claimed and believed himself to be the first inventor of the cold process of screw making. While it is not the purpose of this communication to excite controversy, or in any sense detract from due merit, it seems only a just compensation for years of unproductive toil that the dead inventor's name should be associated with a process that formed a large part of his life work.

This is an honor that, to my knowledge, has never, even in a humble way, been accorded him. S.

## Decisions Relating to Patents.

## NOVELTY.

In letters patent No. 253,572, issued February 14, 1882, to John E. Atwood, for an improved support for spindles in spinning machines, the characteristic feature of the invention is "a supporting tube which is flexibly mounted with relation to the spindle rail, and contains the step and bolster bearings for the spindle, so that the latter and said tube may move together laterally in all directions during the self-adjustment of the spindle, while carrying an unequally balanced bobbin and its yarn, instead of relying upon the movement of the spindle and its bearing within and independently of the supporting tube, as heretofore." It is held by the Circuit Court that this invention possessed patentable novelty over the spindle support of Francis J. Rabbeth, covered by letters patent No. 227,129, issued in 1880, and over the unpatented Danforth spindle of 1842. 1.

## COMBINATION.

Letters patent No. 178,750, issued June 13, 1876, to Henry Ennis, for an improvement in telegraphic fire alarms, cover a device consisting of a hammer arm for operating a bell, a pencil recording a message on a traveling strip of paper, and a pencil for recording the time of day on the face of a rotating clock dial, all connected by arms and pivots to the armature of an electro-magnet, so as to be simultaneously operated by an electric current. Claim 1 is for a telegraphic receiving instrument adapted to register a message and record the time of its reception, substantially as and for the purpose set forth. The Circuit Court decides that, while each of the two elements covered by the claim are old, the combination is not a mere aggregation, but, on the contrary, achieves a new and useful result by co-operating action. 2.

## ANTICIPATION.

The Circuit Court rules that claim 1 of letters patent No. 301,884, issued July 15, 1884, to Theodore E. King and Joseph Hammond, Jr., for an overshoe clasp, consisting in the combination of a catch plate, a tongue pivoted directly to the tongue plate, and the tongue plate extending rearward of the pivot, and in contact with the catch plate, when the parts are engaged, was not anticipated by either the Hartzhorn patent of 1849, No. 6,736, or the Budd patent of 1871, No. 120,323. 3.

The Circuit Court holds that letters patent No. 178,750, issued June 13, 1876, to Henry Ennis, for an improvement in telegraphic fire alarms, consisting of a hammer arm for operating a bell, a pencil for recording a message on a traveling strip of paper, and a pencil for recording the time of day on the face of a rotating clock dial, all connected to the armature of an electro-magnet so as to be simultaneously operated, were not anticipated by the old watchman's clocks, which make a mark on a time strip when a button is pressed, or by the British patent of October 12, 1872, to Whitehouse & Philips, for a recording apparatus for public vehicles. 4.

Letters patent No. 296,377, issued April 8, 1884, to John E. and Eugene Atwood, for an improvement in the means of driving spindles by bands, so as to permit the use of narrow spindle frames, consist of the combination of a drive pulley and a guide pulley having parallel axes, and arranged one above the other, two spindles on opposite sides of said pulleys, and two driving bands, each encircling both pulleys and the whirl of the spindle, and each consisting of three parts, two of which pass horizontally between the whirl and the adjacent sides of the pulley, and the third passing directly from one pulley to the other between the horizontal portions. It is held by the Circuit Court that the patent was not anticipated by a machine alleged to have been constructed and used continuously from 1877 by the W. G. & A. R. Morrison Company in its factory at Willimantic, Conn. 5.

Letters patent No. 225,261, issued March 9, 1880, to Orator F. Woodward, are for a "new and useful improvement in compositions of matter for making moulded articles of manufacture," such as flower pots, vases, cuspidors, etc. Flying targets or "birds," though not specified by the patentee, were made in large numbers under the patent. The composition consisted of gypsum and resin mixed under heat. The Circuit Court decides that the patent was not anticipated by certain previous compounds from which flying targets had never been made, and from which the patentees never contemplated that they would be made. 6.

The Circuit Court lays it down that letters patent Nos. 359,687 and 359,688, both issued March 22, 1887, to Bernice J. Noyes, for an invention relating to a system of municipal signals, whereby, automatically, and independently of the operator's will, the reception of emergency signals is always marked by the ringing of a bell, while the reception of patrol signals on the same register is never accompanied by an alarm, were not anticipated by either the patent of July 26, 1881, to J. W. Stover, for "improvements in telegraphic relays," the Field patent of June 19, 1883, for an apparatus for recording stock quotations, or the Wilson patents of March 3, 1885, and June 9, 1886, relating to a municipal telegraph apparatus. 7.

## WHAT CONSTITUTES INFRINGEMENT.

In letters patent No. 253,572, issued February 14, 1882, to John E. Atwood, for an improved support for spindles in spinning machines, the characteristic feature of the invention is "a supporting tube which is flexibly mounted with relation to the spindle rail, and contains the step and bolster bearings for the spindle, so that the latter and said tube may move together laterally in all directions during the self-adjustment of the spindle, while carrying an unequally balanced bobbin and its yarn, instead of relying upon the movement of the spindle and its bearing within and independently of the supporting tube, as heretofore." It is held by the Circuit Court that the 2d, 3d, and 5th claims of the Atwood patent are infringed by a device substantially similar in form, except that the bottom of the supporting tube is surrounded by a closed oil cup, which prevents the facility and promptness with which the flexibility of the spindle can be graduated; for a copyist cannot escape infringement by adding features which hinder the patented combination from exhibiting some of its minor advantages. 8.

Letters patent No. 178,750, issued June 13, 1876, to Henry Ennis, for an improvement in telegraphic fire alarms, cover a device consisting of a hammer arm for operating a bell, a pencil for recording a message on a traveling strip of paper, and a pencil for recording the time of day on the face of a rotating clock dial, all connected by arms and pivots to the armature of an electro-magnet, so as to be simultaneously operated by an electric current. In ruling the Circuit Court says that the claim is infringed by an apparatus having a magnet in the main circuit, whose armature controls the receiving device and time stamp as in the patent, notwithstanding that the motion is communicated by means of relays or sub-circuits instead of by levers; for, both means being well known, the one is merely the equivalent of the other. 9.

The Circuit Court decides that claim 1 of letters patent No. 301,884, issued July 15, 1884, to Theodore E. King and Joseph Hammond, Jr., for an overshoe clasp, consisting in the combination of a catch plate, a tongue pivoted directly to the tongue plate, and the tongue plate extending rearward of the pivot, and in contact with the catch plate, when the parts are engaged, is infringed by a buckle made under letters patent No. 418,924, issued January 7, 1890, to John Nase, which shows a rearward extension of the upper plate, although it differs from the King and Hammond buckle in certain other respects. 10.

1. Sawyer Spindle Co. v. W. G. & A. R. Morrison Co., 52 Federal Reporter, 590.
2. Municipal Signal Co. v. Gamewell Fire Alarm Tel. Co., 52 Federal Reporter, 459.
3. Hammond Buckle Co. v. Goodyear Rubber Co., 52 Federal Reporter, 587.
4. Municipal Signal Co. v. Gamewell Fire Alarm T. Co., 52 Federal Reporter, 459.
5. Atwood v. W. G. & A. R. Morrison Co., 52 Federal Reporter, 475.
6. Cleveland Target Co. v. United States Pigeon Co., 52 Federal Reporter, 385.
7. Municipal Signal Co. v. Gamewell Fire Alarm T. Co., 52 Federal Reporter, 464.
8. Sawyer Spindle Co. v. W. G. & A. R. Morrison Co., 52 Federal Reporter, 590.
9. Municipal Signal Co. v. Gamewell Fire Alarm T. Co., 52 Federal Reporter, 459.
10. Hammond Buckle Co. v. Goodyear Rubber Co., 52 Federal Reporter, 587.

POLICE statistics show that the arrests for drunkenness in London are at the annual rate of one to every 175 inhabitants; in Birmingham, one to 153; in Manchester, one to 71; and in Liverpool, one to 50.