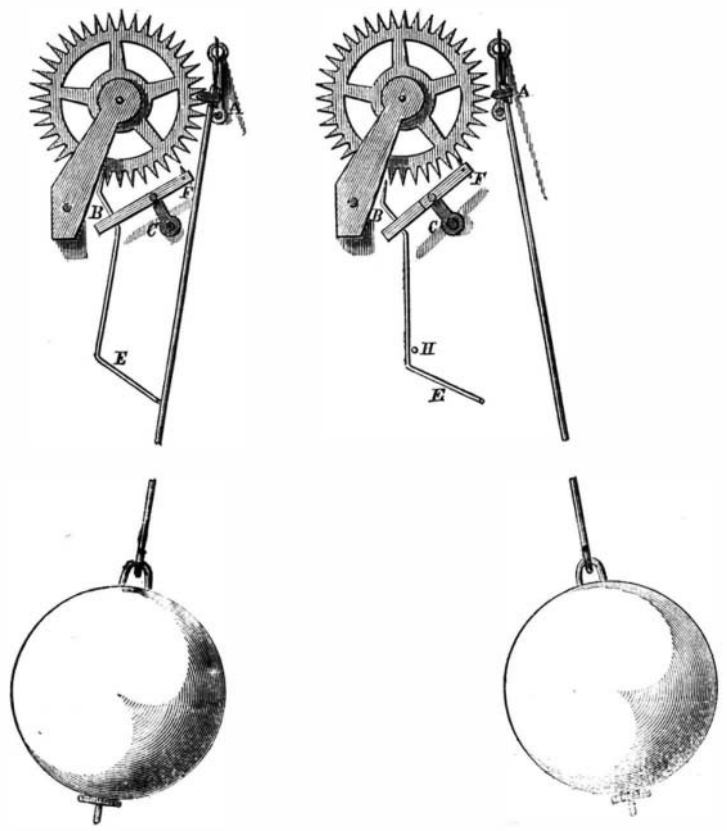
Improved Escapement.

The importance of producing a correct movement for time-measurers cannot be overrated, since so many of the important duties and avocations of life are dependent on their fidelity and general accuracy. Herewith we illustrate a novel escapement, which possesses decided advantages over any others that we have examined. In it, A, is the impulse pallet, and B, a guard to prevent injury from carelessness; this comes in contact with the wheel only when the pendulum and detent are both withdrawn. The detent, F, is supported by the arm, C, and this latter, as also the one, carrying the pendulum, can be adjusted as required. The pendulum lifts the detent by the wire, E, and there is also another wire, H, riveted to the plate, which the wire, E, drops against; the depth or hold upon the detent is regulated by bending the wire above this pin. This escapement has been thoroughly tested, and found to possess many advantages not hitherto attained, some of which are herein set forth:—It is claimed that clocks thus fitted will keep more accurate time than others not so constructed: that they are much more durable and will not get out of order so quickly as ordinary escapements: that as the pendulum receives its impulse directly from the crown wheel, the friction produced in transmitting power from the crown wheel through many connections to the pendulum, is obviated: and that consequently no oil is required on it, and there is less wear on the whole machinery of the clock. It is also constructed much more cheaply, and the pallets can be quickly removed, if necessary, for examination. Clocks constructed with this attachment have sweep-seconds—a good feature in time-pieces with short rods. This invention can be applied to any clock, new or old.



HART'S PATENT ESCAPEMENT.

The patent on this invention is ordered to issue to William Hart, a practical horologist of Mayville, Wis., through the Scientific American Patent Agency. Licenses to manufacture this escapement can be had by addressing the inventor as above.

SILICATED SOAPS.

Soap, strictly speaking, was formerly understood to mean a composition of oil, or grease, with an alkali; but the term has now a more extended application. Various other substances than grease and oil have been employed as mixtures, and are held to be legitimate constituents of soap. Formerly, resin was extensively employed for this purpose; but owing to its scarcity since the war commenced, and the high price thence resulting, its use has been almost abandoned, and silica—the chief ingredient of sand and quartz—is now largely substituted. When pure, it is insoluble in most acids, or in water; and it is actually infusible in fire. Yet it can be converted into a liquid; and it is used to mix with soap; hence originated the term "silicated soap." Quartz sand subjected to a high degree of heat, and mixed with a caustic alkali, such as soda, or potash, becomes soluble: and this is the substance now largely employed as a substitute for resin in soap making.

The application of the silicate of soda, as a soap mixture, has been long known; but several patents have recently been obtained for improved modes of treating and mixing it.

On Oct. 14, 1862, Dudley B. Chapman, of Milford, Mass., obtained a patent for making a silicated soap which is described in his specification as follows:—"One part by weight of an alkaline silicate (such as silicate of soda), one part by weight of vegetable flour or farina, and one half part by weight of sal soda. The sal soda is to be melted with a little water, in a kettle, over a slow fire; the flour is then thoroughly mixed with it; after which the alkaline silicate is added, and the whole thoroughly incorporated together. This composition is to be mixed with soap made of grease or oil, and alkali, when it is in the liquid state, and the whole of the ingredients boiled together for a few minutes." It is stated that vegetable flour assists the silicate in combining with the soap, and a larger quantity of the silicate may thus be used with a given quantity of soap. It also makes a firmer soap, and prevents it from efflorescing. The claim is for "the combination of a carbonate, or caustic soda, an alkaline silicate, and vegetable flour, with soap, or a saponified oil or fat substance."

On Jan. 20, 1863, Mr. Dudley obtained another patent for a silicated soap, described in his specification as follows:—"Hitherto, the method of using soluble alkaline silicates in the manufacture of soap, has been to make a soap in the usual manner by boiling a hydrated alkali with grease, oil, or tallow, or one or more of these combined with resin; and while the soap was in a fluid state, to reduce the soluble alkaline silicate to a fluid, by the addition of water, then mixing it with the soap. By this process, an alkaline silicate containing an excess of free alkali (that is more than sufficient alkali to hold the silica in solution, which most alkaline silicates do) cannot be used to advantage, because the excess of alkali in the silicate granulates or opens the soap in such a manner as to precipitate the silicated solution to the bottom. Therefore the use of highly alkaline silicates in soap has been generally abandoned. By my process, I can use in soap, a silicate containing any quantity of free alkali; and in such proportions, that in some cases the quantity of alkaline silicate used will exceed in weight all the other ingredients combined; thereby materially cheapening as well as improving the quantity of soap.

"In manufacturing by my process, I first ascertain the quantity of free alkali which the silicate to be employed contains. I next by the addition of water, reduce the silicate to a fluid, or gelatinous condition; and when ready for use, have it heated to about forty degrees (centigrade). I next take a quantity of any one or more of the following ingredients, sufficient to completely neutralize the excess of alkali which the silicate contains:—To wit, grease, oil of any kind, tallow, resin, or any of these, combined with flour, or starch of any kind; and prepare them by heating the grease, oil, tallow, or resin, as the case may be, to about seventy degrees, centigrade; at which heat I add the alkaline silicate prepared as above, and mix thoroughly, by stirring for a short time. Next I mold the mixture in frames and allow it to cool. If I use flour or starch in the combination, I mix it in a dry state with the melted grease, or fatty matter, before adding the silicate. If the excess of alkali in the silicate is mostly caustic, the soap thus made, will, in the course of three or four days, be fit to cut up, or to be formed into bars, either for use or sale. Should the alkali be mostly a carbonate, the mass should be re-heated, in a day or two, to about eighty degrees centigrade, and next it should be framed, after which (in about two days), it will be ready to be cut or formed into bars. In this way I obtain a very fine neutral soap, in a much cheaper manner than by any other process.

"The excess of alkali in the silicate completely saponifies the ingredients used to neutralize it, and these ingredients in the process of saponification absorb all the excess of water with which we are obliged to dilute silicates in order to render them sufficiently fluid to combine with soaps. Therefore a soap made in this manner will not shrink in weight as much as a soap in which silicate is mixed after the soap is finished; for such soaps have already taken up about forty per cent of water from the hydrated alkali with which they are boiled, and the extra water in the silicate only tends to impair their value. Another advantage which this process ensures to the soap, is, that the glycerine having an affinity for the moisture contained in the atmosphere, prevents the soap from becoming too hard, by age, as silicated soap is liable to do.

"I claim, as my invention, and as an improved manufacture, a soap made in the improved manner hereinbefore described, viz., of a hot, fatty matter or matters; and a solution of alkaline silicate, combined at one operation, without the process of being boiled after the addition of the solution of silicate to the hot fat."

A patent (re-issue), was also granted to George E. Vanderburgh, of New York City, on March 10, 1863, for a silicated soap, which is described in the specification as follows:—"I take any kind of common soap, reduce it to a fluid state, and add thereto any desired proportion of dissolved alkaline silicate, which contains by analysis less than one-half as much potash, or less than one-third as much soda or silica, and then after thoroughly incorporating this mixture of soap and silicate, whilst they are kept at a proper temperature, I run the mixture into frames to harden, and afterwards cut the same into merchantable shapes.

The claim is "the use of a dissolved alkaline silicate as an ingredient in and component of soap; but this I only claim when the dissolved alkaline silicate thus employed contains, by chemical analysis, less than one third as much soda, or less than one-half as much potash as silica."

The soap manufacture is of great importance as a branch of the useful industrial arts. Some philosophers have held that the quantity of soap consumed by a nation may be taken as an index of its civilization; and this is not a chimerical idea, when it is considered that it is chiefly employed to promote cleanliness, in person and clothing. But whether the use of silicates, resin, and other substances, or mixtures, with genuine soap, composed of oil, grease, or tallow and alkali, is an improvement, is another question. Many persons believe that these are foreign mixtures, which only increase the quantity.

MR. GRAW, a French physician, proposes to destroy the taste of intensely-bitter medicines by mixing chloroform with them in certain proportions. He claims that the taste and odor, even of assafetida, can be annihilated.