

IMPROVEMENT IN WATCH HANDS.

This improvement in watch hands is designed to enable the wearer to see at a glance the different times of the place he is leaving and the place of destination, or to enable him with one watch to keep both standard and local time. The value to the traveling public of such a device is apparent in the facility which it affords for making connections between trains run by different times, as well as in keeping appointments between different cities.

This invention provides a simple and practical device for uniting the two hands. It consists in a groove turned upon the hub of one hand, and a split spring ring formed on the other hand and sprung into the groove, and which by its elasticity preserves a constant and uniform frictional contact with the other hand, that always maintains its proper relation during the normal movement of the hands, but still permits an adjustment between them to adapt them to point to different times when it becomes necessary to adjust them to the longitude of different places.

Fig. 1 shows a watch having the auxiliary hands set for Chicago time and the usual hands set for Boston time. Fig. 2 shows the hands as they appear when only one kind of time is indicated—that is, when the auxiliary hands are pushed around behind the outer hands.

Fig. 3 is an enlarged view of a pair of hands. Fig. 4 shows one of the auxiliary hands having the spring end, and Figs. 5 and 6 are respectively side views of the hour and minute hands with the auxiliary hands applied.

This improvement will be appreciated by all travelers, and by others who are obliged to differentiate time. It is possible that this simple device may go a long way toward introducing a standard time.

This invention has recently been patented in this country, in Canada, Great Britain, France, Belgium, Germany, Spain, Italy, and Austria by Mr. John Wethered Bell, of Conowingo, Maryland.

IMPROVED SAW MILL.

We present a cut of the Taylor Manufacturing Company's improved plantation saw mill, a machine designed to meet the wants of parties who desire a mill to do neighborhood sawing with engines of small power, say from 8 to 18 horse power.

This mill has a solid iron girder frame of great strength, and is provided with substantial friction feed with two changes of speed. Friction feed is 3 1/2 inches wide; feed belt, 2 inches. The mandrel has solid 8-inch bearings. This mill is so arranged that carriage can be set at either the right or left hand of the saw frame, a very essential feature where parties desire to change location. The carriage runs on a V wrought iron rail, and has two screw blocks that are made so that they can be used as a screw block, or as a ratchet block when desired. Head blocks are made heavy and substantial, and have a sliding dog in knee that is very handy to dog the last board. The knee recedes 30 inches from saw, so that the carriage may receive a large log.

This company also build the patent log beam mills in three sizes. The No. 3 mill was illustrated in the SCIENTIFIC AMERICAN of October 21, 1882. The No. 2 mill is of the same design, only heavier; and their mammoth No. 1 mill is made with or without top saw, for heaviest power

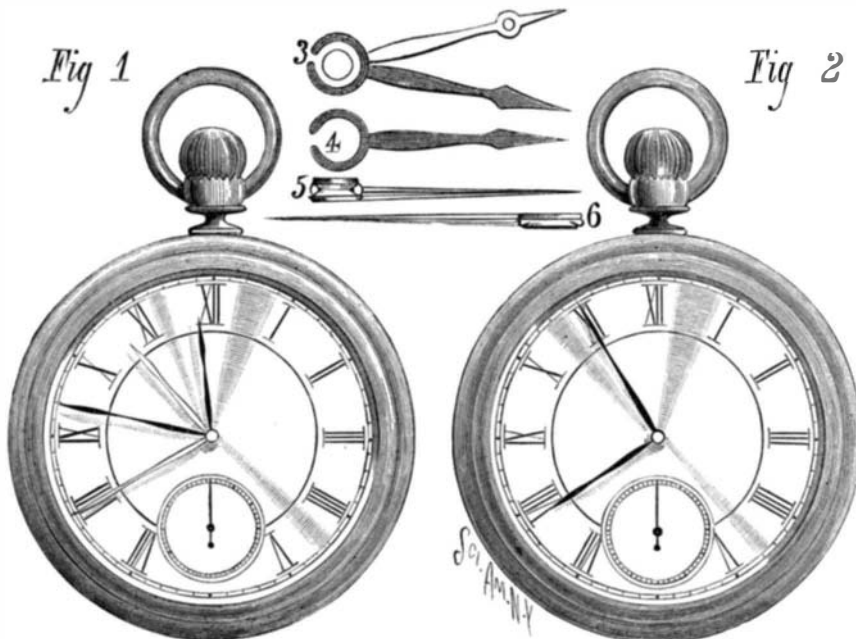
and lumber. They claim for these mills very rapid work, done perfectly and accurately.

This company will remove to Chambersburg, Pa., January 1, to new and extensive works that now are nearly completed, where their facilities for turning out work will be greatly increased.

For further particulars address Taylor Manufacturing Company, Westminster, Md.; New York store, 107 Liberty Street.

Methods of Preventing Halation in Gelatine Sensitive Plates.

Halation in gelatine plates is caused by the bright light of an object passing through the gelatine film during exposure



BELL'S IMPROVEMENT IN WATCH HANDS.

in the camera and reflecting back from the back surface of the plate against the under side of the sensitive film. Blurring effects and halos around bright objects in negatives are thus produced. It takes place more readily in thin gelatine films than in those that are thick. Several plans have been proposed to prevent halation. One of the simplest consists in smearing over with glycerine a piece of black American cloth or of mackintosh, and quickly squeegeeing the smeared side on to the back of the sensitive plate before exposure, care being taken to use a small quantity of glycerine. A rejected negative or any glass plate is sufficient to squeegee with, which is done by pressing down the cloth by pressure on the plate; the spare glycerine is thus expelled, and the air bubbles with it. After exposure in the camera, the cloth backing is easily removed from the sensitive plate and applied to successive plates.

Another method consists in flowing the back of the sensitive plate with a collodion solution made as follows: One part saturated solution of aurine in absolute alcohol with three parts of plain collodion, adding one per cent of castor oil and one per cent of a saturated solution of roseine.

Before development the collodion film must be removed. —British Journal of Photography.

It will require an expenditure of at least \$5,000,000 by the Italian Government to make good the damage done to roads, bridges, and public buildings by the late inundation.

Improvements in Making Glass.

The high expectations in regard to toughened glass can scarcely be said to have been realized as yet, and several improvements must still be made before the process can be considered as perfect.

The original method consisted in immersing the article while still red hot in a bath of oil heated to 200° C. (392° Fahr.), and letting it remain there until it had cooled down to that temperature. Glass hardened in this way was, indeed, hard enough, but at the same time it was very brittle, so that if put away and kept untouched it would frequently explode and fly in pieces without any visible cause.

T. Lubisch claims to have discovered a better method of hardening glass, or, rather, an improvement on the same process. He also immerses the article, while red hot, into a hot bath, but he takes it out again when it has nearly lost its redness, and lets it cool very slowly in an oven that is heated nearly to the temperature of the glass.

As the bath does not need to be much above 212° Fahr., he prefers to use solutions of the carbohydrates in water (starch, gum, or the like). Such a bath does not soil the surface of the glass, as is the case with fats, oils, and bituminous substances.

Glasses subjected to this operation resist pressure and shock just as well as those hardened in oil, but possess this advantage, that they can be cut with a diamond or polished and cut with sandstones.

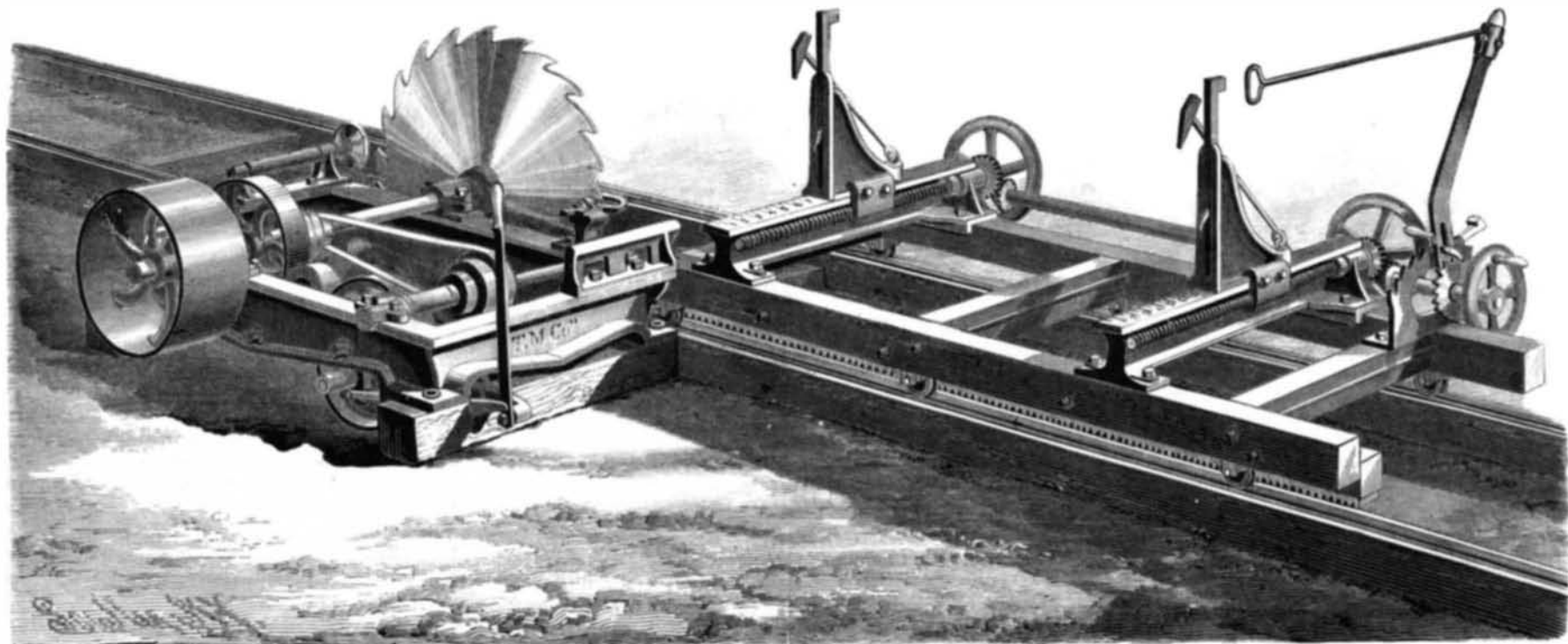
While the oil method only permits of the hardening of articles of simple shape, by Lubisch's process all glass things can be hardened, as, for example, bottles, mugs with handles, pitchers, and other vessels. —Industrie Zeitung.

[We have used vessels hardened by Le Bastie's process, and have observed that when broken the pieces are not smaller, as a rule, than those which would result from breaking an ordinary glass vessel, although such explosions do sometimes occur in hard glass. —Ed.]

Recent Finds in Connecticut Valley Sandstone.

Mr. Elias Nason reports, in a Boston paper, that some very fine specimens of tracks have lately been uncovered in the famous quarry at Turner's Falls, Mass. One of the slabs has on it a series of 15-inch tracks (three toed), the stride measuring five feet. Mr. Nason was permitted to take with him several beautiful specimens, one of which exhibits the delicate tracery of the feet of an insect escaping over the soft mud; another exhibits the ripples of the wave, another the drops of rain, and others have well-defined imprints of the tracks of birds. He also saw the impressions of several kinds of ferns and grasses. Mr. Stoughton, who is working this geological mine, considers some of the largest slabs to be worth from \$500 to \$1,000; but the cost of excavating them is heavy.

This whole region is supposed to have been originally covered by the sea. As the waves receded, birds and quadrupeds whose species are extinct left the impressions of their feet upon the mud, which, hardening into stone, has held them through the ages for the examination of the scientists of the present day. Compared with these tracks as to age, the pyramids of Egypt are but as of yesterday.



"PLANTATION SAW MILL," MADE BY THE TAYLOR MANUFACTURING COMPANY