

SELECTED MATTER.

THE MEANING OF THE OPAL.

" See with what vivid and what varied flame
I love you, Aglae, ' said my love to me,
Always so tenderly he breathes my name,
The little name seems a caress to be

Clasped in an endless circlet of fair gold,
An opal—less a jewel than a fire—
Burned with bright hues whose symbols sweetly told
Of deathless love of truth and pure desire.

We studied this keen opal, he and I,
Cheek warm on cheek, hand safe in sheltering hand,
Here burned the blue of fair fidelity,
There shot the gold of wisdom and command ;

Here vivid violet, in which red and blue
Blend cunningly to tell the truth of love,
And then all suddenly love's crimson hue
Triumphantly all colors spread above.

Next sprang to light the emerald's fairy sheen,
Whereat I looked to him, he, whisperingly .
" Of old, Hope's sacred symbol was this green,
Profaned it means, love's tender jealousy."

Then glowed an orange light where red and gold
Met in an *oriflamme*, and softly he
Spoke yet again : " This union, sweet, doth hold
Sign of eternal wedlock that shall be,

Fire-like, this trembling and most vivid light
Speaks deepest passion—hear you me, my life?
Yet purely above flame reigns virgin white.
So dares this opal speak of you, my wife! "

HENRI DANGE

OVERBANKING AND ITS CAUSES.

Overbanking is a defect frequently met with in watches, and it is quite difficult sometimes to ascertain the causes, and to do the subject full justice, we would require more space than the editor would be likely to afford us.

There are several causes, each of which requires a different treatment. The most common cause is a short lever. The upright pin in the end of the lever fork nearest to the balance staff may be bent back, or its front filed away. In case of a sudden jar, that end of the fork may be jarred from its rest against the banking pin, and fall toward the balance staff. When this occurs the table rollers *should* prevent the pin passing until the ruby pin comes round into the notch in the lever and carries the lever over to the other banking pin in the normal way. But if the pin is bent or filed away, as mentioned, it will not be stopped by the edge of the table rollers, but will pass directly over the other banking. Then when the ruby pin comes around, it is of course on the outside of the lever fork, and the watch stops from overbanking. If this is caused by the brass pin being bent as described, it should be bent forward again until it stands vertical in all directions. Sometimes the table roller is not round, its edge being nearer the balance staff at one point than elsewhere, so that the brass pin can slip by it when the scant side comes opposite the pin, although it may not be able to pass at any other place. In this case the roller should be turned up, or a new one fitted in. The same thing may occur when the roller is not fitted truly

on the balance staff, or even when the staff or its pivot is bent or eccentric. The roller itself may be too small, instead of the lever being too short. How to ascertain which part is at fault would require a long and detailed explanation of the principles of the detached lever escapement, which would not be practicable to give within the space allotted to us.

Another kind of banking is caused by the lever pallets being set too far from the scape wheel, making what is called a shallow depthing. In this case, when one tooth of the wheel escapes from its pallet, the next acting tooth does not fall properly upon its pallet, that is, it does not fall upon the locking face of the pallet, and draws the fork against the banking, but comes short of it and falls upon the driving face, or working surface of the pallet. This tends to force the lever back when it should be resting against the banking, and leaves the table roller free. This backward tendency brings the upright brass pin forcibly against the edge of the roller, and retards the motion of the balance. When the latter stops and takes up its return motion, the friction between the pin and roller becomes more excessive, and assumes a sort of wedging nature, which reduces the balance vibrations to very small ones, stops it entirely, or may even bend or break off its pivots in the effort to pass by the roller and get to the other side.

If the depthing is very scant indeed, it may be detected by removing the balance, when the escape wheel will cause a continuous oscillation of the lever, and the movement will rapidly run down. This kind of banking may occur even when the escapement does not run down, but is close enough for the lever, when lightly pushed from one banking, to fly over and lock on the other banking. In this case, take a fine pin point, not half filling the notch in the lower fork, and carefully lift the lever off the banking pin, and hold it still. The lever flies forward, and the pin is no longer pushing it forward, but is now holding it back, by its presence in the notch. Then slowly let the lever pass over to the other side, till the acting tooth passes off the pallet it is forcing forward, and notice the action which follows. As it passes off, the next acting tooth will drop upon the *locking face* of the other pallet, if the depthing is correct, and the lever will go to the banking and rest against it. But if the depthing is scant, the lever will fly back, and the other side of the notch will rest on the pin point, tending to force it back instead of drawing it forward. When tested in this way, a very slight scantiness of the depthing may be detected, and when one or both pallets are wrongly placed. The remedy is to move the pallets upon the arbor until the depthing is correct, so that, when the lever is faced, as before described, it will draw the pin point along until it rests against the banking on the other side, and will there remain, securely locked.

As regards a rule for the position of the banking pins, it should be remembered that they are not acting parts of the escapement, but are merely barriers set up to keep the lever in proper bounds. The only possible rule is, first, to see that the escapement is correct, the parts all of proper proportionate sizes and shapes, that is, adapted for each other, and placed at the proper distances apart; then the banking pins should be so placed that they, at the same time, allow the escape-wheel teeth to rest far enough up the locking faces of the pallets to secure safe locking, and no further, and hold the lever fork in such position that the upright pin will be quite free from the table roller, and the notch will receive the ruby pin without striking on either corner—that means that the ruby will clear