This invention relates to a composition of matter designed primarily for sealing and permanently repairing cracks which have been formed in cylinder blocks, cylinder heads and the like, whether the cracks be internal or external.

The composition consists of the following ingredients substantially in the proportions stated, namely:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Percent by Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium or potassium silicate</td>
<td>95</td>
</tr>
<tr>
<td>Petroleum carbon black</td>
<td>4 1/2</td>
</tr>
<tr>
<td>Oil of bergamot</td>
<td>1/2</td>
</tr>
</tbody>
</table>

In practice if a motor is to be repaired it must first be cold. The water contained in the cooling system is drained from the radiator and the engine is then started. Immediately thereafter the radiator is supplied with water or with a suitable anti-freeze solution until the radiator is within approximately one quart of being full. One quart of the preparation constituting the present invention is then poured into the radiator and the engine is allowed to operate for fifteen or twenty minutes. During this time the crack in the engine will be repaired.

A careful check on the action of the composition indicates that after the silicate in the solution becomes heated by the action of the engine it becomes a hydrated colloidal substance in finely divided particles. These particles have the property of lodging in cracks and crevices and accumulating at those points. As the water is constantly circulating it prevents these particles from forming into large masses and the fact that the silicate is added while the motor is cold further serves to prevent the formation of masses of the substance. As the silicate lodges in the cracks or crevices the heat of the motor causes said cracks or crevices to gradually enlarge and by the time the motor is hot the cracks and crevices will be completely filled with the deposits. Continued heat of the motor acts to further solidify the precipitate and this action is accelerated by the petroleum carbon black comiled with the silicate. The oil of bergamot is used only to impart a pleasant odor to the preparation and is not essential to the action thereof.

This composition can be used for repairing external cracks as well as internal ones, the heat of the engine being sufficient to evaporate moisture from the composition and insure the proper solidification and binding action.

The preparation is not recommended for use in radiators but is designed primarily for repairing cracks and filling crevices in engine blocks, cylinder heads and the like.

It is essential that, in using this composition, the engine be cold at the time that the composition is placed in the cooling liquid. Otherwise the silicate will coagulate or form into large masses before it has had time to work into the cracks, etc., during the gradual heating of the engine and opening of the cracks.

What is claimed is:

A composition of matter for use in the cooling liquid of an internal combustion engine for the purpose of repairing cracks in the engine block and head, consisting of a mixture of sodium or potassium silicate with petroleum carbon black in the proportions of substantially 95% of the silicate and substantially 5% of the petroleum carbon black.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures.

JOHN FREDERICK CUMMING.
WILLIAM P. EKLUND.