UNITED STATES PATENT OFFICE.

GEORGE A. HENDERSON, OF ST. ALBANS, WEST VIRGINIA.

BITUMINOUS BINDER AND PROCESS FOR MAKING THE SAME.

1,264,932. Specification of Letters Patent. Patented May 7, 1918.

No Drawing. Application filed February 15, 1916. Serial No. 78,514.

To all whom it may concern:

Be it known that I, GEORGE A. HENDERSON, a citizen of the United States, residing at Highland Villa, at St. Albans, in the county of Kanawha and State of West Virginia, have invented certain new and useful Improvements in Bituminous Binders and Processes for Making the Same, of which the following is a full, clear, and exact description.

My object is to produce a plastic binder of superior ductility in which are present bitumen, petroleum or other oil residuum and sulfur.

It has been heretofore proposed to absorb the sulfur from natural sulfur-bearing asphalts by heating the asphalt in the presence of added petroleum or other oils. In the manufacture of the so-called artificial asphalt as a by-product of petroleum refineries, the oily constituent of the product, (as in the product of natural asphalts in which oils are added to entrap the sulfur-content of the natural asphalt), is present to a degree which prohibits its use as a practical binder of wood fiber, although such binders may be, with satisfaction, used in the production of a paving structure of such binders mixed with sand and stone.

My invention relates especially to a bituminous binder, in which the oily constituent is first sufficiently present to absorb sulfur, but in which the oily constituent is, in the carrying out of my invention, reduced to the minimum, to render the product of especial value in binding such vegetable fibers as are referred to in my pending application for fibrous compositions and process for making the same, filed February 12, 1916 application No. 77,953.

In carrying out my process artificial asphalt, of approximately 65 to 70 standard penetration, as produced from petroleum, is mixed with from 5 to 10 per cent. of sulfur, and then subjected to a temperature of approximately 500 deg. Fahr. for a sufficient length of time to reduce the comparatively soft material to the consistency of approximately 40 standard penetration, when cold. During volatilization of the oily constituent the sulfur is entrapped and retained in the resultant product, rendering it more flexible in cold weather, and less liable to become soft in hot weather, than if not so treated.

I claim:

1. The process of producing an asphaltic binder which consists in subjecting artificial petroleum bearing asphalt in the presence of sulfur to sufficient heat to entrap the sulfur during volatilization and driving off of the major portion of the oily constituent.

2. A bituminous binder consisting of 5% to 10% sulfur and from 90% to 95% bituminous residuum of asphaltic base petroleum.

In testimony whereof I have affixed my signature in the presence of two witnesses, this fourteenth day of February, 1916.

GEORGE A. HENDERSON.

Witnesses:
L. J. WHITE,
C. H. ZUKLE.