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(54) **SPATIO-TEMPORAL LOCALIZATION FOR MASS SPECTROMETRY SAMPLE ANALYSIS**

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(57) **ABSTRACT**

(51) **Int. Cl.**
A61B 5/145 (2006.01)
A61B 18/00 (2006.01)

(52) **U.S. Cl.**
CPC ***H01J 49/0004*** (2013.01); ***H01J 49/164*** (2013.01); *A61B 2018/00607* (2013.01); *A61B 2018/00773* (2013.01)

(58) **Field of Classification Search**
USPC 250/281, 282, 288

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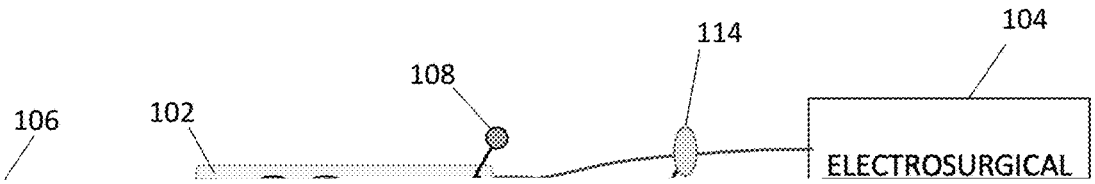
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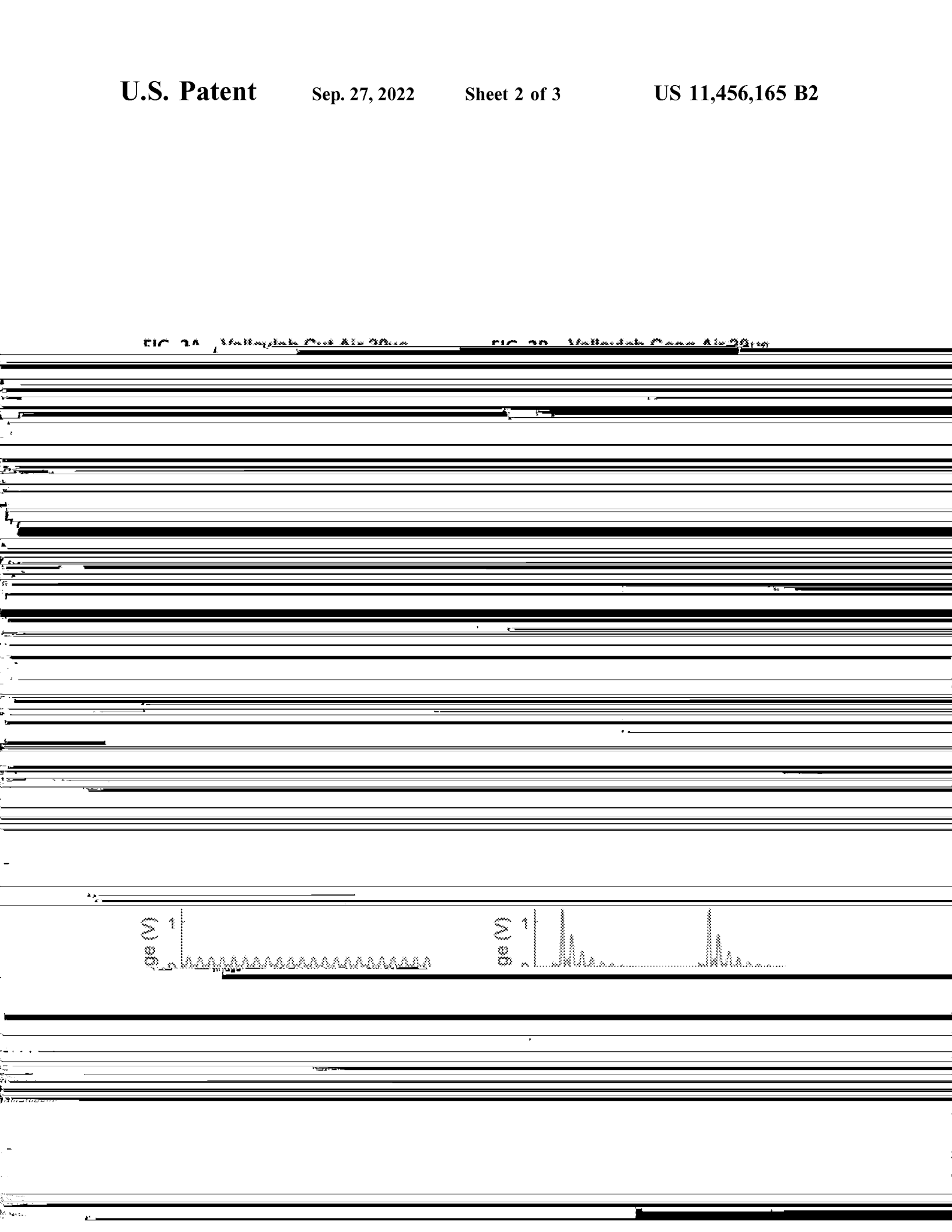
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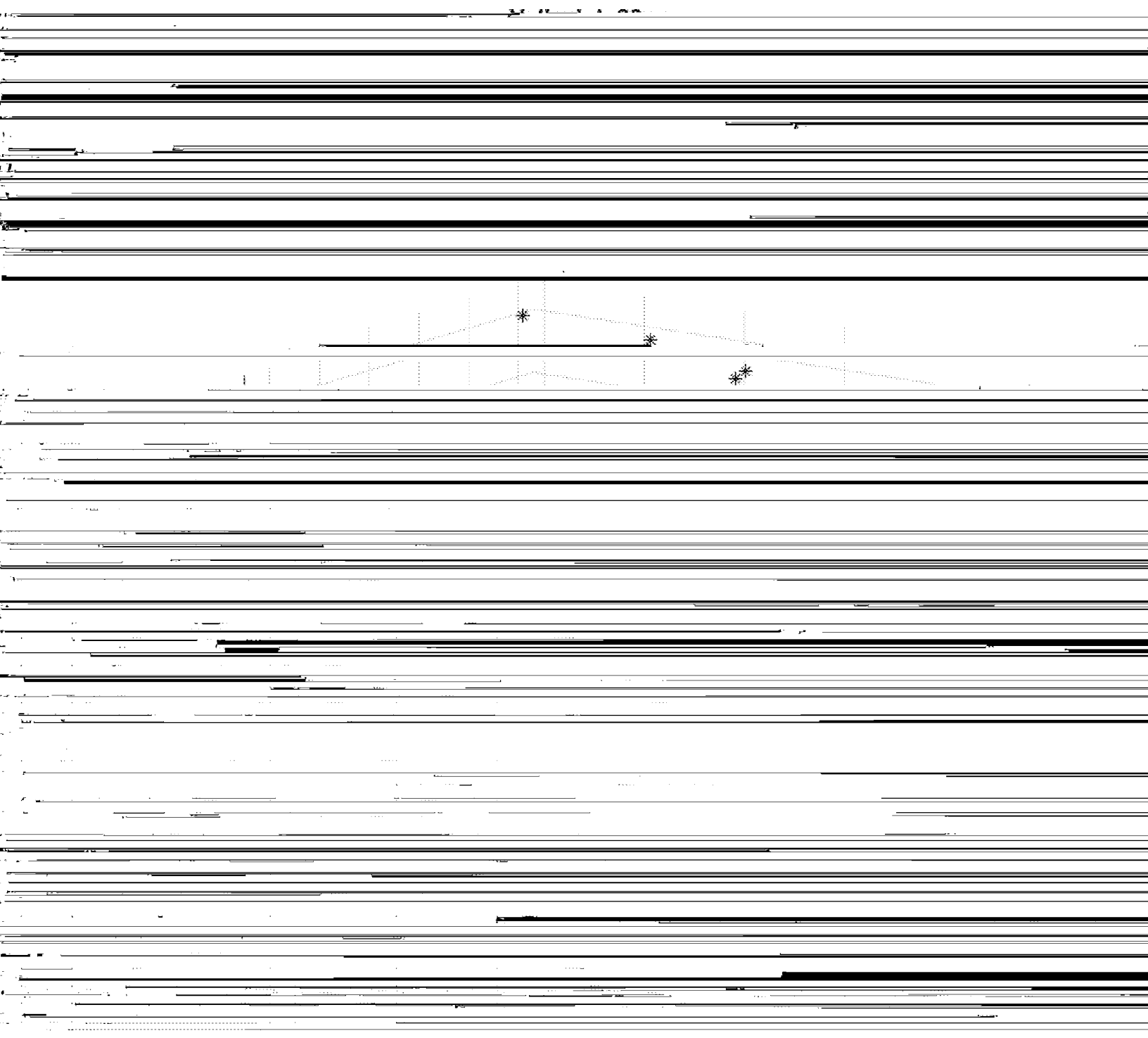

SPATIO-TEMPORAL LOCALIZATION FOR

operation of the electrical device, and the tracked location of

methods described herein may be applied to any electrical or electrically controlled device used to generate the analyte as

An exemplary embodiment will now be described. This embodiment provides a practical method for robust and

magnitude of the live electrode signal, the magnitude of the return electrode signal, and the magnitude of the difference between them, although other features could be used. A processor was used to perform classification according to an

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wherein mass spectrometry data corresponding to the determined modes of the electrical device are identified and localized within the site of the

11. The apparatus of claim 10, wherein the site of the energy event is a surgical site.

12. The apparatus of claim 11, wherein the electrical device is an electrosurgery device.

13. The apparatus of claim 12 wherein the analyte comprises smoke.

modes of operation of the electrocautery device comprise: cut in air; coagulation in air; cut in tissue; and coagulation in tissue.

15. The apparatus of claim 11, wherein the analyte is generated from native tissues at the surgical site.