Blogging over the years have become a lucrative business, the bloggers main aim is to attract people to his or her blog. In the quest for that, many blogs or page post fake news by using enticing captions to captivate the minds of readers. The captions are mostly displayed on social media and by clicking on the captions, the reader will be redirected to the blog where the news is been posted. The posted fake news can sometimes lead to misinformation to the public, violence, inciting conflict and extreme cases, death. Many works have been done on fake news detection with good accuracy rate in terms of detecting fake news. This paper presents an effective way of detecting fake news using Support Vector Machine (SVM) and Lagrangian Duality which yielded an accuracy of 95.74%.