UNITED STATES PATENT OFFICE.

HENRY EDWIN DRAYSON, OF EDGEWORTH LODGE, COUNTY OF HAMPSHIRE, ENGLAND.

IMPROVEMENT IN THE MANUFACTURE OF GUNPOWDER.

Specification forming part of Letters Patent No. **44,269**, dated September 13, 1864.

To all whom it may concern:

Be it known that I, HENRY EDWIN DRAYSON, of Edgeworth Lodge, county of Hampshire and Kingdom of Great Britain, a manufacturer of gunpowder, have invented or discovered a new and Improved Process of Making Gunpowder, and to enable others skilled in the art to practice and use my improvement, I will fully and clearly describe the same.

In the practice of the first part of my process I take a given quantity of saltpeter and put it into a suitable vessel—say a large covered iron kettle—and subject it to the direct and quick action of a heavy volume of steam until it is dissolved and reduced to a fluid state, and while it is under the action of steam it is constantly stirred and mixed by means of a paddle or stirrer passing up through the cover of the kettle, the handle projecting sufficiently to enable a person to operate it from the outside; or any other convenient means of stirring may be used. Steam may be introduced into the kettle in any convenient manner to act most directly upon the mass of saltpeter therein. As soon as the saltpeter is fully dissolved and reduced to the fluid state I remove the cover from the kettle and immediately put into the fluid saltpeter the requisite quantity of sulphur and charcoal, and mix the whole thoroughly together, during which mixing the compound dries rapidly, and as soon as thoroughly mixed the compound is taken out of the kettle and is ready to be passed under the mill-runners. This constitutes the first degree of my improved process. The compound is now ready for the incorporating-mill, and may then and afterward be treated in a well-known and common manner, or it may be subjected to the second degree of my improved process, which is as follows: I take the mill-cake, after it has been manipulated in the incorporating-mill in the usual way, and pass it through sieves of the required mesh to form grain before the mill-cake becomes dry, set, or hard. The grain thus produced, after passing through the sieve or sieves into a barrel or tub, is removed and spread out to dry, and when sufficiently dry is glazed in the usual way. If the grain so formed is very angular, and a more rounded grain is required, it is placed in a blind sieve having a rotary motion, where it remains a few seconds, and is then removed and spread out to dry, and is afterward glazed in the usual way. Thus two forms of grain may be made, leaving no dust behind from the mill-cake.

The advantages of these improvements are a better quality of powder is produced at a less expense than heretofore; nearly one-fourth of the mill-cake under the old process is broken into dust when producing grain, which is avoided by my new process; also, the danger in pressing the mill-cake is avoided; also, all costly and dangerous machinery used in granulating the press-cake into grain, and the danger to those employed in making the mill-cake to grain under the old process is avoided by this new process.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The process of making gunpowder so far as the same is developed in the first degree thereof, substantially as herein described.

2. The process of making gunpowder so far as the same is developed in the second degree thereof, substantially as herein set forth.

HENRY EDWIN DRAYSON.

Witnesses:

HENRY JAMES,

JOHN BRITTON.