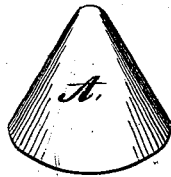


W. C. CUTLER.  
Prepared Vaccine Matter.

No. 197,612.

Patented Nov. 27, 1877.



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

WILLIAM C. CUTLER, OF CHELSEA, MASSACHUSETTS.

## IMPROVEMENT IN PREPARED VACCINE MATTER.

Specification forming part of Letters Patent No. 197,612, dated November 27, 1877; application filed March 21, 1877.

### *To all whom it may concern:*

Be it known that I, WILLIAM C. CUTLER, of Chelsea, State of Massachusetts, have invented an Improved Process for Preparing Vaccine Virus, of which the following is a specification:

The object of my invention is to improve and facilitate the preparation of non-humanized vaccine virus which is to be employed in vaccinating persons, as a precautionary measure against the malignant results of small-pox; and it consists in a process whereby vaccine matter is rendered certainly effective, as will be hereinafter fully described.

It is well known to those familiar with the subject that animal or human vaccine lymph, as heretofore produced, has several serious objections, among which are that the ivory points which are employed as the agents of transmission of such matter remain reliably charged but a very short time, as also the fact that they may, instead of being charged with efficient lymph, be only charged with serum—a result which, by the usual process of charging such points, is unavoidable, the manner of such charging having a tendency to irritate the surface of the "vesicle," thereby causing a secretion of serum instead of lymph.

The principal cause of such charged points remaining vital for so short a period is due to the very thin scales or coating of virus thereon, all the cells of which are exposed to atmospheric action. While "crusts," as employed for purposes of vaccination, are composed of the lymph, epidermis, debris, and pus, the latter being, of course, seriously objectionable, and as only about one-half in number of those crusts are reliable, and there being no indicating characteristics by which an expert can separate the good from the worthless, therefore the practicing physician is at all times liable to incur all the trouble and expense of revaccinating large numbers of persons whom he has before attempted to vaccinate, but had therein failed, for the reason that his vaccine virus was inefficient, as before stated, and of which he could have no proof, except by such failures.

Experiments which I have conducted for

the purpose of discovering a remedy for the before-mentioned difficulties have demonstrated that solid lymph made into a thick compacted mass will retain its vital properties for three months or more, and is, during that period, always certain in its results.

To produce such solid lymph cones, I have invented the following process: I collect the scales and globules which are formed by the drying of the pure lymph that exudes from the fractures of the vesicle during the seventh, eighth, and ninth days of its stage. I also collect a sufficient quantity of the fluid lymph as it exudes from the fractures of the vesicle. When a sufficient quantity of such scales and globules has been collected, I reduce them by pulverization to a finely-powdered mass, to which is then added sufficient of the fluid lymph to constitute a thick paste. When this paste has been thoroughly intermixed I mold it into cones, as shown at A in the accompanying drawing. I then charge a few points therewith and dry them for use, and by their use vaccinate two or three infants, and, if efficient, they prove the whole mass to be vital.

I am thus enabled to demonstrate the vitality of every cone, and save the physician the labor and vexation of performing the duty of vaccination the second time, *and thereby charging* <sup>2</sup>

When it is desired to use any part of a cone, the preferable method is to separate the desired quantity by filing it from the cone at one point, in order that the portion thus separated shall not be too largely taken from the surface.

I claim as my invention—

1. The process of preparing vaccine virus, by pulverizing and intermixing different pustules, then mixing the same with fluid lymph to the consistency of a paste, and molding such mass into desired forms for use, substantially as described and shown.

2. Vaccine virus prepared as herein described, and then molded into cones or other suitable forms for use.

WM. C. CUTLER.

Witnesses:

EUGENE HUMPHREY,  
EBEN HUTCHINSON.