

UNITED STATES PATENT OFFICE.

EDMUND MORSE POND, OF RUTLAND, VERMONT, ASSIGNOR, BY MESNE ASSIGNMENTS,
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COMPOSITION OF MATTER FOR PLASTERS, OINTMENTS, &c.

1,304,600.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that I, EDMUND MORSE POND, a citizen of the United States of America, residing at Rutland, county of Rutland, State of Vermont, have invented certain new and useful Improvements in Compositions of Matter for Plasters, Ointments, &c., of which the following is a specification.

My invention relates to compositions of matter suitable for plasters or ointments and comprises a compound which, while sufficiently soft and flexible at ordinary body and atmospheric temperatures, will not run at the higher temperatures of the body of a fever patient. The feature of permanent solidity under these conditions is due to the inclusion of starch in the formula, and has been attained only after years of experiment in hospital and private practice with compositions of the general character herein set out. My preferred formula, for general use includes the following ingredients in substantially the proportions set out, by weight:

25	Gelatin	24 parts.
	Glycerin	64 "
	Boric acid	1 "
	Starch	9 "

30 The proportion of starch may be varied somewhat as the different requirements of use make it desirable to increase or decrease the hardness of the resulting compound. A good article for general use may be produced by reducing the starch content to 8 or 35 even 7 ounces, if other hardening materials are employed.

The preferred method of forming a plaster out of my improved composition of matter is the following: I add two pounds of cold water to one and a half pounds of gelatin and stir well, allowing the mixture to stand until the water is thoroughly absorbed by the gelatin. To this I then add four 45 pounds of glycerin and one ounce of boric acid, and boil the mixture in a water bath for about four hours, until the gelatin is entirely dissolved. I then add the nine or ten ounces of commercial starch, such as is 50 used for laundry purposes, which has been first dissolved in one quart of cold water. This gelatin-glycerin-starch solution is then raised to the boiling point, and kept in a state of ebullition for three or four minutes. 55 According to my present understanding this

thorough boiling is necessary to thoroughly cook the starch and thicken it with the glycerin compound. Thereafter the compound is allowed to stand over the water bath for about two hours. It is then allowed 60 to slightly cool, if volatile oils or other medication is to be added, so as not to evaporate them. For some purposes I employ, as such medication, for example, twenty-five drops of oil of mustard, two drams of capsicum, and 65 seven ounces of methyl salicylate which are thoroughly stirred into the mixture at this time.

I then place on a suitable frame a layer of white paper waxed on one side, with the unwaxed side uppermost, then a layer of cotton wadding, and on that a layer of gauze. The composition produced as above described is then poured hot on these layers of fabric and rubbed through the gauze and cotton to 70 the paper. After a few minutes the whole mass hardens sufficiently to permit of its being taken from the frame. The plaster is then allowed to dry about four days before being packed for commercial use. Before 80 applying the plaster to the patient's body it should be slightly heated.

For thin plasters, the cotton may be omitted.

Among the advantages of this plaster may 85 be mentioned the fact that while it remains soft, moist and flexible while in contact with the body, it will not run over the person or clothing, nor will it become too soft in the hottest weather. Being solid in body, it 90 holds medication well, and even the most volatile constituents, such as oil of mustard, will not escape from it either in manufacture, storage, or use. It is slightly adhesive when heated, thus aiding in holding itself in 95 place on the patient's body, and yet it is soft as a poultice and holds the most volatile oils of medication without evaporation to any appreciable extent. By reason of the inclusion of boric acid the plaster will keep in- 100 definitely in any climate.

The function of the gelatin in the mixture is the giving of body or solidity thereto at ordinary temperatures of the atmosphere and that of the flesh of the patient to which 105 it is applied. The proportion of gelatin should be high enough to effect this without producing hardness. As a result it enables the compound to serve as a matrix for holding the glycerin and other medicaments, 110

from which matrix they may be given up for absorption by the pores of the patient's body when the plaster is put into use.

The function of the starch is partly to assist in the above described action, but principally to prevent the compound from liquefying by the absorption of moisture from the atmosphere or from the pores of the patient's body. When the starch component is omitted there is a tendency for the compound to liquefy more or less in damp weather or under the action of perspiration from the patient and "run" over the clothing, bandages, bed linen or other adjacent objects. When the starch is added in proper proportion these last mentioned difficulties are avoided without interfering with the releasing of the medicaments for their desired therapeutic action when the plaster is applied to a patient's body.

Having, therefore, described my invention, I claim:

1. A plaster designed to serve as a matrix for medicaments which comprises a mixture of gelatin, glycerin and starch, the gelatin occurring in sufficiently large proportion to give the mixture solidity without hardness at ordinary atmospheric temperatures, and the starch occurring in the completed mixture as boiled starch and in sufficiently large

proportion to prevent the plaster liquefying by absorption of moisture from the atmosphere or from the body of the patient.

2. A plaster such as set forth in claim 1, which also contains a preservative component such as boric acid.

3. A plaster designed to serve as a matrix for medicaments which comprises gelatin, glycerin and starch intimately commingled and boiled together, the gelatin occurring in sufficiently large proportion to give the mixture solidity without hardness at ordinary atmospheric temperatures, and the starch occurring in sufficiently large proportion to prevent the plaster liquefying by absorption of moisture from the atmosphere or from the body of the patient.

4. A plaster such as set forth in claim 3 which also contains a fermentation preventing component such as boric acid.

5. As an article of manufacture a medical plaster comprising the following elements intimately commingled and boiled together in approximately the following proportions: gelatin, 24 parts; glycerin, 64 parts; starch, 55 10 parts.

EDMUND MORSE POND.

Witnesses:

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