

Case No. 7,271.

JENKINS V. JOHNSON ET AL.

{9 Blatchf. 516; 5 Fish. Pat. Cas. 433.}¹

Circuit Court, S. D. New York.

April 10, 1872.

PATENTS—IMPROVEMENT IN THE MANUFACTURE OF ELASTIC PACKING.

1. The reissued letters patent granted to Nathaniel Jenkins, August 3d, 1869, for an “improvement in the manufacture of elastic packing,” the original patent having been granted to him, as inventor, May 8th, 1866, are valid.
2. The first claim of that patent, namely, “An elastic packing composed of at least four-tenths of finely pulverized, refractory earthy or stony material, intimately mingled with, and held together by, rubber prepared for vulcanizing, and then vulcanized, as and for the purpose described,” claims a packing, into the composition of which there enters at least four-tenths of refractory, earthy, stony or mineral matter, which must go in a pulverized state in order to be intimately incorporated with the India-rubber, which serves as a vehicle to hold the powder, the compound being then vulcanized, by subjecting it to heat, in the presence of sulphur, and the result being a packing which is elastic, while it is indestructible by heat.

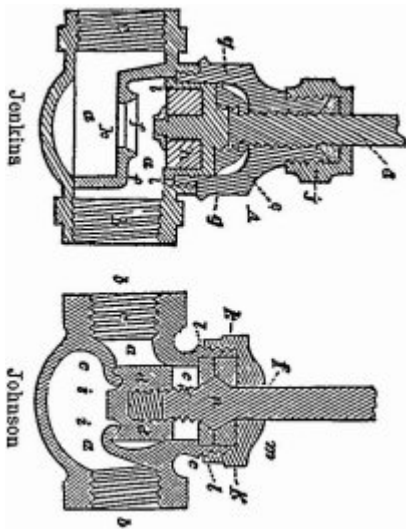
Cited in *Clarke v. Johnson*, Case No. 2,855; *Id.*, 4 Fed. 440.]

3. The letters patent granted to Nathaniel Jenkins, October 6th, 1868, for an “improvement in steam globe-valves,” are valid.
4. The claim of that patent namely, “The arrangement of the bearing surface, ‘1’, of the valve-head, and the elastic packing held in an annular recess in the valve-head, as described, with the valve-seat, f, and the raised seat, f, in the manner as shown and specified,” claims the arrangement of an annular chamber or cup, containing an elastic packing, with a raised seat, in connection with the two bearing surfaces, outside of the cup and the raised seat, the whole operating in the manner described.
5. Such invention is not anticipated by a valve consisting of a raised seat, and a metallic receptacle fitting over it; nor by a valve with a raised seat and a cup, and a packing of lead or tin fused into the cup.

{Final hearing on pleadings and proofs.

{Suit brought upon two letters patent—one [No. 54,554] for an “improvement in the manufacture of elastic packing,” granted to complainant [Nathaniel Jenkins] May 8, 1866, and reissued August 3, 1869 [No. 3,579]; and the other for an “improvement in steam

globe-valves,” granted to complainant October 6, 1868. The nature of both inventions is set forth in the opinion.



[The foregoing engravings illustrate the globe-valve of the complainant, and that covered by a prior patent granted to the defendants [John Johnson and others.]

[In Jenkins' valve the elastic packing, h, is placed in an annular ring, i, which formed the valve or stopper. When the valve descends, the packing presses on the raised seat, f, or if the packing is worn or distended, it presses upon the body of the seat below the raised portion. The Johnson valve contained a raised seat and an annular valve or stopper, d, but no elastic packing.]²

[Patent No. 49,414 was granted to John Johnson, August 15, 1865.]

Thomas W. Clarke and William D. Booth, for complainant.

Anthony R. Dyett, for defendants.

BLATCHFORD, District Judge. This suit is founded on two letters patent granted to the plaintiff. One of them is a reissued patent granted August 3, 1869, for an "improvement in the manufacture of elastic packing," the original patent having been granted to the plaintiff, as inventor, May 8, 1866. The other is a patent granted to the plaintiff, as inventor, October 6, 1868, for an "improvement in steam globe-valves."

The specification of the packing patent describes the invention as one of an "elastic packing for joints and valves exposed to destructive fluids." It says: "The nature of the invention consists, first, in constructing the packing of refractory earths, or earthy and stony matters, mingled with rubber and such other materials as are necessary to vulcanize the rubber, in such quantity that the earthy or stony matter shall be more than four-tenths of the entire compound, and then, vulcanized in molds to the desired shape of the packing; and, second, in the selection of such earthy or stony materials, and proportioning them in the compound. All elastic packing, of indestructible properties, to a valve, joint, or aperture through which a destructive fluid is to pass, such as steam of any kind, hot water, kerosene, or other coal oil, hot or cold, has been unattainable till recently; but, after ex-

periments of more than one year, I claim to have discovered a tight, indestructible, elastic packing, for these purposes. It will be seen, from the following formulas, that a leading feature of the composition is, that it contains large quantities of earthy materials, such as French chalk, or talcose matter, a very refractory material; Paris white, a substance which is decomposed only at a very high temperature, and in presence of air or gases of combustion, or of strong acids, with steam, and is not easily fused; and litharge, which assists in vulcanizing, and does not tend to decompose the other ingredients, at the temperatures to which the composition is exposed. In the selection of the earthy or stony matter, the choice would be governed by facility of pulverization, and insusceptibility to heating influence. Soapstone is indicated as an ingredient by the use of French chalk. Paris white indicates the use of other earthy carbonates. The substance of the invention is the employment, for a packing, of an earthy powder of refractory quality, intimately mingled with vulcanized rubber, and constituting forty per cent, of the compound. With the following ingredients, the proportions would be within the following limits: pure rubber, from 20 to 25 per cent; pure gum shellac, from 10 to 20 per cent.; pure Paris white, from 20 to 30 per cent; pure French chalk, from 15 to 25 per cent.; pure litharge, from 11 to 18 per cent; pure lamp-black, from 2 to 3 per cent; pure sulphur, from 1 to 3 per cent. Increase the quantity of rubber when the fluid to be resisted is less penetrating; and increase the quantity of Paris white, French chalk, litharge, and shellac, when it is more penetrating. One hundred parts of the above substances, mingled within the percentages given, will be comparatively indestructible, in the presence of coal-oil, steam, or hot water, and will preserve their elasticity and texture for a long time." A table is then given, of proportions in use, with coal-oil, steam, and hot water, respectively, of the various ingredients above mentioned, which, it is stated, have given favorable results, and which the patentee states he is inclined to consider the best attainable for their respective purposes. They range, except as to lamp-black, which goes up to $3\frac{1}{4}$ per cent, within the limits before stated. The specification continues: "I do not, however, confine myself to these exact proportions, but consider the composition most accurately stated by the limitations given before. The ingredients, other

than the rubber, are to be finely powdered and intimately mixed together. They are then to be spread on the surface of the rubber, and rolled with it, between cold rollers, until they are thoroughly incorporated with the substance of the rubber. The mass is then to be molded in iron molds, of proper shape, and subject to a high vulcanizing heat—say that due to a steam pressure of sixty to seventy-five pounds, or, if desired to be very hard, even more—for from twenty to forty-five minutes.” The claims are as follows: “1. An elastic packing, composed of at least four tenths of finely pulverized refractory, earthy, or stony material, intimately mingled with and held together by rubber prepared for vulcanizing, and then vulcanized, as and for the purpose described. 2. The composition of the ingredients, and within the proportions above set forth, substantially as and for the purpose described. 3. The employment of French chalk, or equivalent talcose mineral, substantially in the manner and for the purpose described.”

“Refractory” is thus defined: “Noting earths or metals that are infusible, or require an extraordinary degree of heat to fuse them.” “Earth,” in chemistry, is “a metallic oxide, inodorous, dry, unflammable, and infusible;” and, among the chemical earths, are silica and magnesia. A metallic oxide is composed of oxygen and a metal, as a base. A “stone” is “earthy or mineral matter condensed into a hard state.” A “mineral” is defined as “a natural body, destitute of organization or life—a substance found in or on the earth, which is neither animal nor vegetable.” “French chalk” is “steatite or soapstone—a soft magnesian mineral.” Soapstone is composed chiefly of silica and magnesia. “Steatite” is defined as “a variety of tale—soapstone.” “Talc” is defined as “a mineral,” and is composed chiefly of silica, magnesia, and water. Litharge is an oxide of lead.

The answers set up want of novelty and want of patentability and non-infringement, as a defense to the packing patent; but there is no specification of any prior invention. There can be no doubt, on the proofs, that a packing compounded and prepared like the plaintiff’s packing, and possessing its characteristics, did not exist before his invention. It is highly useful, supplied a great need, and has displaced previous packing, where resistance to destructive fluids is required.

The proper construction of the first claim of the patent is, that it claims a packing, into the composition of which there enters at least four-tenths of refractory, earthy, stony, or mineral matter, which must go in a pulverized state, in order to be intimately incorporated with the caoutchouc or India-rubber, which serves as a vehicle to hold the powder, the compound being then vulcanized by subjecting it to heat in the presence of sulphur, and the result being a packing which is elastic while it is indestructible by heat. In the product, the India-rubber and the sulphur are chemically combined, forming vulcanized India-rubber; but the substances which, in the completed product, give to it its refractory character, are not chemically combined with the vulcanized India-rubber, but act mechanically. The refractoriness of the product is due to the non-elastic refractory substances in it, while its

elasticity is due to the non-refractory vulcanized India-rubber. It was necessary that the packing, to serve all the ends of a packing, should be both refractory and elastic. It might thoroughly resist heat; yet, if it were not elastic, so as, by its resilience, under pressure, to tightly close all orifices which ought to be closed, it would not fulfill the purposes of a packing; and it might act for a short time as a practical elastic packing, and yet soon be destroyed by heat, if not so refractory as to resist the effects of heat for a long time. But the patentee discovered that a compound fulfilling the conditions of that claimed in his first claim would be comparatively indestructible in the presence of coal-oil, steam, and hot water, and would preserve its elasticity and texture for a long time.

The packing of the defendants is an elastic packing, constructed of refractory earths, mingled with India-rubber and sulphur, and then vulcanized. It has the indestructible properties of the plaintiff's packing. It contains large quantities of soapstone. Its earthy refractory matter constitutes forty per cent, at least, of the compound. The soapstone is in the proportion of from fifteen to twenty-five per cent. The ingredients found in the defendants' packing, by analysis, are India-rubber, sulphur, the oxides of lead and iron, and soapstone. The proportion of India-rubber and the proportion of sulphur to the whole mass exceed, each of them, the highest percentage given in the specification for those articles respectively. But it is shown that the excess of sulphur beyond the amount taken up by the India-rubber for vulcanization unites with the iron and lead and forms refractory mineral matter, and that such refractory mineral matter and the soapstone together are, at least, forty per cent, of the whole compound. This refractory forty per cent acts mechanically, to resist heat, after the sulphur has united with the iron and lead, and is cemented together by the vulcanized India-rubber, which gives to the whole mass the necessary elasticity. The packing is substantially the same as the plaintiff's packing, as regards its mechanical application and operation in use, and its adaptation to the end desired. It results, therefore, that the defendants have infringed the first claim of the patent.

Regarding the third claim as a claim to the employment of French chalk or equivalent talcose material, in the range of proportions named in the specification, in the compound covered by the first claim, the defendants have infringed the third claim also. This

construction of the third claim is the one contended for by the defendants. Whether the third claim is susceptible of a broader construction, it is not necessary to decide in this case.

The specification of the valve patent says: "The invention is of that class of globe-valves in which an elastic or semi-elastic packing is employed for sealing the joint of the valve, the object of this invention being to provide more perfect security, or additional means of security, against clandestine escape of the steam or water about the joint of the valve, when closed, the same construction which accomplishes this also producing a durable or lasting valve. The Invention consists in a peculiar construction or arrangement of parts, and the combination therewith of an elastic or semi-elastic annulus or packing, the arrangement of parts being such that, in the event of the destruction or weakening of the elastic packing, the metallic portions of the joint shall come in contact and operate to effect a tight union of the same." The structure is then described. It is a globe-valve, having a chamber, an inlet, an outlet, a stem, a stopper or valve, on the bottom of the stem, and a raised seat or annular ledge, f, raised some distance above the surrounding metal, f, The stopper or valve is composed of a metallic head, pivoted to the lower end of the stem, in any suitable manner, such head being formed, upon its under side, with an annular chamber, for the reception of an annulus or packing of elastic or semi-elastic India-rubber, or other suitable material or compound, such packing being retained in place, in its chamber, by a nut screwed upon the shank of the head, and partially overlapping it, the packing extending a short distance below or beyond the annular lid, or circumscribing circumference, or bearing surface, l, of the head. The stem runs through a stuffing-box. On lowering the stopper or valve, in the act of closing the valve-opening or passage below, the packing is pressed tightly on the annular raised seat, f, which, by such pressure, is forced somewhat into the packing, and a tight joint between the valve and the seat is secured. From long usage, or from being subjected to the action of great heat, the packing may become enlarged or distended. Should this take place, it will, upon the descent of the valve, become inclosed between the annular end or face, l, of the valve-head, and the surface, f, immediately surrounding the valve-seat, f, and, by this means, form a secondary or additional means of closing the valve-opening against the passage of steam or water. Should the packing, in extreme cases, become wholly or partially destroyed, and unfit to perform its functions, the two metallic surfaces, l and f, will be brought tightly in contact, and, in themselves, form a close joint, thus creating an additional and third means or resource for effecting the desired object. The claim is this: "The arrangement of the bearing surface, l, of the valve-head, and the elastic packing held in an annular recess in the valve-head, as described, with the valve-seat, f, and the raised seat, f, in the manner as shown and specified."

The defense in regard to this patent is non-infringement, and that the defendant, Johnson, was the prior inventor of the improvement, covered by the patent, and that the valves made and sold by the defendants are such as are described in letters patent granted to the defendant, Johnson, August 15, 1865, for an improvement in steam-valves.

The proper construction of the claim of the patent, in view of the state of the art at the time of the plaintiff's invention, is, that it claims the arrangement of an annular chamber or cup, containing an elastic packing, with a raised seat, in connection with the two bearing surfaces outside of the cup and the raised seat, the whole operating in the manner described. The valve patented to Johnson in August, 1865, consisting of a raised seat and a metallic receptacle fitting over it, does not anticipate the invention. Nor does a valve with a raised seat, and a cup, and a packing of lead or tin fused into the cup. The elastic packing is an essential element in the arrangement. The full utility of the raised seat and the cup, and of the two bearing parts outside of them, is not developed until an elastic packing is used. The use of the elastic packing is not the mere substitution, in respect of the arrangement covered by the claim, of one packing for another equivalent packing. The use of an elastic packing is necessary to fully utilize the form of valve, and the form of valve is necessary to develop all the merits of such elastic packing as the specification, of the plaintiff's patent speaks of—packing which becomes enlarged or distended by pressure or heat, and which, by the use of the plaintiff's arrangement, will, when it escapes outside of the cup and the raised seat, be pressed between the outside bearing surfaces, to still secure a tight joint. Lead or tin packing, fused into a cup, is not an elastic packing, in the sense of the plaintiff's specification, nor is it the equivalent of such elastic packing.

The earliest date of the application of the plaintiff's arrangement by Johnson, in making valves, was October, 1867. The plaintiff applied it a year earlier. Nothing that is adduced by the defendants affects the novelty of the plaintiff's invention in the valve patent; and the valves made and sold by the defendants are like the plaintiff's valve, in construction and arrangement.

There must be a decree for the plaintiff, for a perpetual injunction and an account of profits, in respect of the first and third claims of the packing patent, and of the claim of the valve patent, with costs.

[For other cases involving patent No. 54,554, see *Clarke v. Johnson*, Case No. 2,855; *Id.*, 4 Fed. 437; *Jenkins v. Walker*, Case No. 7,275; *Nelson v. McMann*, *Id.* 10,109.]

¹ [Reported by Hon. Samuel Blatchford, District Judge, and by Samuel S. Fisher, Esq., and here compiled and reprinted by permission. The syllabus and opinion are from 9 Blatchf. 516, and the statement is from 5 Fish. Pat. Cas. 433.]

² [From 5 Fish. Pat. Cas. 433.]