

alent of the digestion called for by the patent; and that the process of crystallization, or seeder and separation by pressure, are substantially the same.

We do not think it necessary to decide whether the process used by the defendant, and that covered by the patent, are identical, or substantially so, because our view of the first question raised by the defendant must be decisive of the case; but it would seem to the uninitiated certainly that there is room for a wide difference between the physiological process which Mege describes and directed should be pursued, and the mere rendering process at a low temperature which the defendant followed. A reading of Mege's several patents, with his introductory remarks in regard to the nature and character of his invention, impresses us with the conviction that he thought his was a physiological process, and dependent on physiological principles; that this process of digestion, by means of artificial gastric juice, at the temperature of the animal body, was an essential step in the production of the article which he designed should take the place of butter; while all the witnesses in this case agree that the product of the defendant's process, while it is pure fat, is odorless and tasteless, which is not the product which Mege intended should result from the practice of his process, as he says the product of his process should have the taste of almonds or of fresh butter. Without, therefore, further discussing the question of infringement, we simply say that we find that the complainant's patent expired April, 1876, by the expiration of the Bavarian and Austrian patents. The bill is therefore dismissed for want of equity.

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### HANCOCK INSPIRATOR CO. v. LALLY.<sup>1</sup>

(Circuit Court, N. D. Illinois. March 22, 1886.)

#### 1. PATENTS FOR INVENTIONS—NOVELTY—INSPIRATORS.

The third claim of letters patent No. 185,861, granted January 2, 1877, to John T. Hancock, for an improvement in inspirators, is void for want of patentable novelty over the Giffard English and French patents of 1868, for injectors, and the English patent of Barclay and Morton of November, 1863.

#### 2. SAME.

"Lifters" and "forcers" arranged in an axial line with reference to each other, for injecting water into a steam-boiler, being old at the date of the Hancock patent, and no special advantage being shown to have accrued by the arrangement of the two devices side by side, as provided in the patent, *held*, there was no invention in such arrangement.

#### 3. SAME—CERTAINTY OF DESCRIPTION.

In order to save this patent from being void for lack of certainty in description of the devices covered by this third claim, it is necessary to assume that

<sup>1</sup>Reported by Charles C. Linthicum, Esq., of the Chicago bar.

their construction was a matter of common knowledge in the art when it was applied for, and in this view the mere arrangement of these devices in a new relation to each other did not involve invention.

In Equity.

*Elmer P. Howe and Chauncey Smith, for complainant.*

*Rodney Mason and B. F. Thurston, for defendant.*

BLODGETT, J. This bill is brought to restrain the alleged infringement of letters patent No. 185,861, granted January 2, 1877, to John T. Hancock, for "an improvement in inspirators." This patent belongs to that class of devices of comparatively recent origin which are arranged to force a jet of feed-water into a boiler by the direct action of the steam of the boiler. The patentee says in his specifications:

"The object of my invention is—*First*, to supply water to a boiler by a less expenditure of power than that required for a pump, and consequently with a relative saving of fuel; *secondly*, to draw the required quantity of water, by means of the attractive power of steam acting in one part of my apparatus, from the greatest depth which a pump is capable of doing, and to deliver the same to another part of my apparatus in quantity equal to what the said part requires at all varying pressure of steam, from zero upwards, and with reasonable variations in the temperature of the water; *thirdly*, to regulate the supply of water to the requirements of a boiler, even when the apparatus is exposed to sudden jars or shocks, thus insuring a constant and reliable feed. \* \* \* My invention consists in the employment and combination of two sets of apparatus, contained each in a separate chamber, the one being employed for lifting water from a well or other source of supply, and conveying the same to the other chamber, from whence it is conducted to the boiler."

The patent contains five claims, but the allegation of infringement in this case only applies to the third claim, which is as follows: "The combination of an injector for forcing water into a boiler, and a second injector communicating with the well, and communicating with and supplying water to the first, substantially as described."

In 1858, Henry Jaques Giffard obtained patents in France and England for a device for forcing water into a steam-boiler, the first form of which is substantially like either of the devices which Hancock has coupled together to make what he calls his "inspirator." The instrument went into general use, and was patented in this country, and a large number of patented improvements upon the original device of Giffard are shown by the proof to have been taken prior to the date of the invention claimed in this patent. The operation of the original Giffard invention depended upon a few simple mechanical principles. It is well known that if a pipe be extended into a well or reservoir containing water, and steam be let into this pipe so as to expel the air, or remove the atmospheric pressure for the time being, the water will rise in the pipe to the same height that it would in the ordinary suction pump. The steam has no attractive power to draw the water, but the water is raised solely by atmospheric pressure. Organized simply upon this principle, the Giffard device is what may be called merely a lifter; that is, it takes the atmos-

pheric pressure off the pipe leading into the reservoir, and allows the water to be forced, by the weight of the atmosphere, into the pipes of the injector or lifter to the extent to which the atmospheric pressure will accomplish this purpose. It had been, long before this patentee entered the field, demonstrated and become a part of the common mechanical knowledge of those versed in the art that, to make a lifter of this instrument, the area of the combining tube at its smallest diameter must be greater than the area of the steam-jet which is to expel the air from the combining tube to cause a flow of water into the same; while, in order to impart to the stream an increased momentum or velocity, so as to make the instrument a forcer, the area of the steam-jet must exceed the area of the combining tube at its smallest diameter. In other words, if the combining tube of the lifter is made smaller than the area of the steam-jet, the steam cannot escape through the combining tube, but will recoil, and hinder, if it does not wholly prevent, the flow of water into and through the combining tube; while the current through the latter being established by the lifter, the volume of steam from the forcing jet must then be made large enough to impart its velocity to the current of water in the combining tube, so as to send the water with increased momentum into the boiler. Another characteristic of all these devices, known before the invention of this patentee, was the fact that, in order to make the instrument operative, there must be an opening somewhere beyond the end of the combining tube, through which the air to be expelled therefrom, and the steam and water first admitted, could pass, in order, as it was commonly expressed, to prime the instrument, and get sufficient head or velocity upon it to enable it to act against and overcome the pressure of the boiler, and drive the water into it.

In the English patent Giffard showed by the second drawing a device by which the jet or stream of water, which had been sent into and through the combining tube by the action of the lifter, received another jet of steam, giving it the increased impetus necessary to drive the water into the boiler; these tubes of Giffard being arranged in an axial line to each other,—that is, the second tube, upon which the forcing jet of steam is applied, is directly in the line of the combining tube, which receives the jet of steam, and causes the water to be lifted. In the first form of the Giffard injector the instrument is so constructed that the jet of steam first applied is smaller than the area of the combining tube, and hence, in its first operation, the instrument is a lifter; but after the air has been expelled, and the instrument become primed, and a flow of water established through the combining tube by the operation of the instrument as a lifter, the area of the steam-jet is enlarged so that from that time forward the instrument operates as a forcer; that is, the original simple Giffard injector in its first form, as shown in his French and English patents, was a combined lifter and injector. He says: