

KNICKERBOCKER CO. v. ROGERS et al.  
(Circuit Court, N. D. Illinois. April 30, 1894.)

1. PATENTS—NOVELTY.

Evidence of want of novelty, to deprive an inventor of the fruit of his genius, must be so definite and cogent as to produce strong belief.

2. SAME.

Where a machine would naturally be known to more than a few observers, the fact that it is claimed to have been known to but few at a particular time throws doubt upon its existence at that time.

3. SAME.

Novelty is not negatived by prior structures in another art, which were not designed or used, prior to the new invention, to do its work, though afterwards so modified in form and proportions, in the light of that invention, as to perform its function.

4. SAME—OPERATIVE DEVICE.

An inventor is not deprived of the fruit of his invention simply because the physical laws upon which it operates are not susceptible of satisfactory exposition.

5. SAME—DUST COLLECTORS.

Claims 1, 2, and 3 of patent No. 403,362, claims 1 and 2 of patent No. 403,363, claim 4 of patent No. 403,770, and claims 1 and 2 of patent No. 408,987, of Orville M. Morse, for improvements in dust collectors, are all valid.

Suit by the Knickerbocker Company against Ward B. Rogers and others to restrain the infringement of a patent.

Albert H. Walker and Offield & Towle, for complainant.

Winkler, Flanders, Smith, Bottom & Vilas, for defendants.

GROSSCUP, District Judge. The complainant claims under letters patent issued to Orville M. Morse,—Nos. 403,362, 403,363, 403,770, and 408,987. Claim 2 of letters patent 403,363 is as follows:

“A dust collector, consisting of a tapering separating chamber having an imperforate peripheral wall, in which the whirling body of air forms a vortex, and in which the air moves from the periphery towards the axis of the vortex as it becomes freed from the solid matter; said chamber having at its large end a tangential inlet for the dust-laden air, and a discharge aperture for the purified air opening into the atmosphere, and provided with a tubular guard projecting into the separating chamber, and at its small end a discharge opening for the separated dust, substantially as set forth.”

There was much diversity of view at the hearing as to the mode of operation of this collector. I cannot accept all of the claims urged by counsel for the complainant; not because they are disproved, but because they are not satisfactorily proved, and are therefore largely speculative. It seems to me, however, that the following mode of operation can fairly, and without abstruse speculation, be attributed to the collector: The current of dust-laden air, being blown through the tangential opening into the collector, is projected round the interior of the large end of the cylinder and cone. By reason of the fact that its specific gravity is greater than that of the air, all particles of dust are thrown, by centrifugal force, to the interior walls of the cone, and, circulating spirally down these walls, emerge from the small opening at the lower end of the cone. The air from which the dust has been more or less precipitated is

itself subjected to the spiral motion and centrifugal force, and also to a degree of condensation greater than the outside air, by reason of the impouring currents through the tangential opening, and therefore, upon reaching the lower edge of the tubular guard, pours upward, round the exterior walls of the guard, to the air without. The effect of the centrifugal force, however, is such that, at the immediate axis of the whirling air, there is a rarification that causes the outward air to pour in, both through the guard, and through the lower opening. What office this plays in the ultimate operation of the collector, I am not able satisfactorily to determine. The net result of the operation is, however, clearly shown to be, that a large percentage of the dust flows through the lower opening, while the air rising through the tubular guard is almost entirely freed of dust. The evidence established, beyond any substantial doubt, that the machine is highly successful, and that no other device of its form, or substantial mode of operation, was ever before employed in the art to which it has been put.

The defendants deny infringement, and also the novelty and patentability of the Morse invention. It seems clear to me that if claim 2, above quoted, is valid, the defendants' devices are infringements thereof. With the addition of some immaterial and unnecessary features, these devices are almost the exact counterparts of Morse's conception. If the efficient purpose of the Morse invention is to precipitate, by means of the tangential entrance, the dust against the interior wall of the cone, and, by means of the spiral rotation, cause it to emerge from the lower opening, while the freed air, moving towards the axis of the vortex, rises through the tubular guard, there can be little doubt but that the defendants' devices operate according to like tendencies and effects.

I am not satisfied with the testimony that a collector like the Morse invention was in use prior to his invention. Proof of such anticipation, to deprive the inventor of the fruit of his genius, ought to be so definite and cogent as to leave in the mind a strong belief that such machine existed. The proof here falls short of that. It leaves my mind in some doubt respecting that alleged fact, but in view of the indefiniteness of the testimony respecting the date of seeing it, and of the improbability that such machine was in successful operation without coming to the knowledge of more observers, located as it was said to have been, this doubt does not rise to the dignity of a reasonable belief that such machine existed.

The two previous inventions that are urged, with the most emphasis, as anticipations of the Morse invention, are the Pratt Steam Separator and the Stratton Steam Separator. It will be observed that these were in an entirely different field of the art; but if they disclose a method of separating steam from water, which, by mere mechanical adaptation or change, could be applied to the use of separating dust from air, such fact alone would not foreclose them as anticipations. An examination of these separators, however, shows that before they were readapted, for experimental purposes in this suit, to the uses of dust collectors, they had entirely different relative form and openings. As steam separators, they

were practically cylinders, with enough of a cone, at one end, only to act as a hopper for drainage to the precipitated water; as dust collectors, they are practically cones, being only cylindrical where their interior walls first meet the incoming currents. As steam separators, the openings at each end for the escape of steam and water, respectively, are the same; as dust collectors, the opening for the escape of the freed air is many times larger than that for the dust. As steam separators, the action of the spiral currents is not affected by, or adapted to, the influence of immediate contact with the outside atmosphere; as dust collectors, the size of the openings, and the arrangement of the tubular guard, show that such adaptation is one of the essential features of its separation. I have been unable to ascertain definitely why these steam separators, in their original form, and with the original openings, might not be adapted to the purposes of collecting dust; but the fact nevertheless remains that, for some practical reasons, they are not. Otherwise, why should their proportions and openings be disturbed, and essentially rearranged to such close approximation to the Morse invention. It is evident that this readaptation, this decided change of form, was essential to success in their changed use. The reason for the change may be occult, but the effect of the change is unquestioned; and in my judgment an inventor ought not to be deprived of the fruit of his invention, where it has brought a new device into successful operation, simply because the physical laws upon which it operates are not susceptible of satisfactory exposition. The essence of the Morse invention is in so changing the form of all preceding machines and devices that, when used in dust collecting, it successfully precipitates nearly all the dust through the lower opening, and leaves the freed air to rise through the upper. It is not, in that respect, a mere change of form of an old device, such as is usually regarded as mechanical only. The essence of the invention is in the particular form adopted. Neither the form, nor relativity of openings, of former devices, would perform the office required. Other forms, such as the originals of the steam separators, will collect a large portion of the dust from the air; but such is not a successful and accomplished dust collector. A dust collector must approximately collect all the dust, or it is not a dust collector. The evidence in this case shows that Morse was the first who, either through experiment, happy accident, or knowledge of the abstruse force of physical laws, hit upon the right form of cone and tubular guard, and relative size of upper and lower openings, in connection with a tangential inlet, to constitute a successful dust collector of that character.

The complainant claims that claims 1, 2, and 3 of patent No. 403,362, claims 1 and 2 of patent No. 403,363, claim 4 of patent No. 403,770, and claims 1 and 2 of patent No. 408,987, have been infringed by the defendants, and are valid; and the court so finds, but construes all those claims as calling, either expressly or by implication, for a tapering separating chamber. For the foregoing reasons the finding will be for the complainant, and an injunction issue accordingly.

## THE GEORGE SHIRAS.

JUTTE et al. v. THE GEORGE SHIRAS.

(Circuit Court of Appeals, Third Circuit. May 4, 1894.)

## TOWAGE.

Libelants' barges in tow of respondent's tug were wrecked in a narrow channel in the Ohio river. Proper navigation of this channel required that the tow should be allowed to drift through it with the current, the tug backing, meanwhile, to keep control of it and steer it. Witnesses from the tug testified at the trial that this maneuver was undertaken, but that a severe gale blowing at the time turned the whole tow around so that the tug was helpless, and the current cast the tow on the bank. Witnesses from another boat testified that at the time of the accident the tug was going ahead; and it was shown that immediately after the accident the captain of the tug admitted that it was caused by the tug's going ahead, owing to the engineer's mistaking the signal bells. *Held*, that the accident was due to the negligence of the tug.

Appeal from the District Court of the United States for the Western District of Pennsylvania.

This was a libel by C. Jutte & Co. against the George Shiras. There was a decree in favor of respondent, and libelants appeal.

Knox & Reed and Edwin D. Smith, for appellants.

D. T. Watson and S. C. McCandless, for appellee.

Before ACHESON and DALLAS, Circuit Judges, and GREEN, District Judge.

GREEN, District Judge. The libel in this case was filed to recover the value of two coal boats and their cargoes, which became a total loss, on their voyage from Pittsburgh, Pa., to Louisville, Ky., at a point on the Ohio river known as "Deadman's Island." The boats and cargoes were the property of the libelants and appellants. As owners, they had made a contract with the owner of the steamer George Shiras for the towage of these boats, and at the time of the loss the Shiras was engaged in performing such contract. The allegation of the libelants is that while "on this voyage down the Ohio river from the port of Pittsburgh to the port of Louisville, under said contract of towage, and at Deadman's island, the said steamboat [the Shiras], through the negligence of its master, pilot, engineer, and crew, or some thereof, ran the said two boats upon the shore bar, and the said two boats and their contents became and were a total loss." It appears from the testimony that the Shiras, having in tow five coal boats and a barge, left Pittsburgh between 9 and 10 o'clock of the morning of February 7, 1890. The tow itself seems to have been properly made up, and the Shiras was in the position usual and customary for towboats on this river, with all of the boats making up the tow in front of her. At the time when the Shiras left Pittsburgh the wind was light, and there was some snow falling. She arrived between 1 and 2 o'clock in the afternoon at Deadman's island. The wind had increased in velocity, and the snow continued falling, but it nowhere appears that the range of vision was seriously affected or diminished