

EMIGH *v.* B. & O. R. CO.
STEVENS *v.* SAME.
STEVENS, USE OF EMIGH, *v.* SAME.

Circuit Court, D. Maryland.

March 17, 1881.

1. INFRINGEMENT OF PATENT—EXCEPTIONS TO MASTER'S REPORT.

The Stevens patent for improvement in railroad-car brakes, which expired in 1872, having been held valid, upon reference to a master he reported that the advantages derived by the defendant from its use amounted to \$30 per car per year, and that finding that during the latter years of the existence of the patent there was an established license fee of \$25 per car per year, he assessed the complainant's damages at that rate from the time the license fee was established. *Held*, that the master's findings, as to both profits and damages, were warranted by the testimony, but that, as it was difficult to compute with exactness the money value of the advantages accruing to the defendant from the use of the patent, and as there was conflict of testimony on that subject, the court would accept the license fee as the basis of compensation least likely to do injustice, and would decree as for profits at that rate, without interest.

In Equity. Exceptions to Master's Report. Before BOND and MORRIS, JJ.

George Harding and *Albert H. Walker*, for complainants.

John H. B. Latrobe and *Andrew McCallum*, for defendant.

MORRIS, D. J. These are three suits in equity against the Baltimore & Ohio Railroad Company for infringement of the patent, dated the twenty-fifth of November, 1851, granted to Francis A. Stevens for an improvement in railroad-car 284 brakes. The original patent expired in 1865, and was extended for seven years, terminating the twenty-fifth of November, 1872. At the November term, 1872, this court, (*Giles, J.*) sustained the validity of the patent, and decided that the defendant had infringed, and these cases went to

the master, (Robert Lyon Rogers, Esq.,) to state an account of gains and profits, and to assess damages. On this accounting the parties have examined witnesses at great length during a period of some six years, and the master, in November, 1880, filed his reports in all three cases, together with the testimony (which is contained in two large printed books) on which he based his findings.

The master reports the number of cars on which, in each year, the defendant used the complainants' patent, commonly known as the "Stevens" brake, and reports that he finds from the testimony that the defendant did derive savings and advantages in the use of the "Stevens" brake over what it would have derived from the use of any other similar device open to the public.

The master further reports that he finds that the savings and advantages which so accrued to the defendant from such use, amounted to \$30 per car per year and at that rate he finds the gains and profits which the complainants are entitled to recover, amounting in the aggregate to \$102,480. He further reports that during the period covered by two of the suits, viz., from 1857 to the expiration of the patent, he finds that the complainants had established a license fee of \$25 per year per car for the use of the patent, and, assuming the license fee as the measure of complaints' damage, he assesses the damages at that rate in those two cases. But he reports that he finds no satisfactory evidence that any license fee was established during the period covered by one of the suits, viz., from 1853 to 1857, and, finding no evidence from which he can compute the damages, he finds none for that period.

The "Stevens" brake was used by the defendant on its passenger cars, and the number on which it was so used, as reported by the master is not disputed; but exceptions have 285 been filed by the defendant to the

master's findings of gains and profits, and assessment of damages.

The defendant contends that the testimony does not show that any advantage whatever accrued to it from the use of the Stevens brake, and further contends that if there was any advantage in its use there is no testimony in the record from which the master was authorized to adopt \$30 per car per year as the money value of such advantage. The defendant also excepts to the master's finding of damages, contending that there is no evidence that any license fee was ever established.

The master reports that it was conceded before him that the brake with which the "Stevens" brake is to be contrasted in all these cases in the brake known as the "Hodge" brake, so that the question before the master as to gains and profits, and now in controversy before the court, is, "what savings or advantage, if any, did the defendant derive from the use of the 'Stevens' brake, for the period covered by that patent, above what it would have derived from the like use of the "Hodge" brake during said period?" *Mowry v. Whitney*, 14 Wall. 620. The "Stevens" brake is claimed by the inventor to be superior to the "*Hodge*" brake, for the reason that by its arrangement of levers the force applied is so distributed that it exerts a uniform pressure on each wheel of both trucks. In the "*Hodge*" brake the force applied is distributed unequally, the two pairs of wheels at the ends of the car receiving a much greater pressure than the two pairs of inside wheels.

As the object is to have the brakes apply as much retarding pressure upon every wheel as it will bear without ceasing to revolve and beginning to slide, it would seem to follow that where the pressure is distributed equally upon every wheel it must be possible to apply a greater average of pressure, without sliding any wheel, than could be possible where the

pressure is distributed unequally, for the reason that the brakeman must always desist from increasing the pressure before the wheel receiving the greatest pressure ceases to revolve; and with the "Hodge" brake, therefore, he must desist before 286 the wheels receiving the lesser amount of pressure have received all that they might receive without sliding.

In the effort to stop railroad trains, and to retard cars when being drawn down steep grades, it constantly happened with hand power that wheels were slid, which quickly ruins them, and it would therefore seem to follow of necessity that a considerable saving of wheels must result from the use of the Stevens in preference to the Hodge brake.

The defendant, operating a railroad of unusually difficult grades, and requiring the most effective form of brake, has, during the whole life of the patent and its extension, used the Stevens brake on its passenger cars,—its construction having been explained to the defendant's employes by the patentee himself within a year or two after the patent was granted to him. Notwithstanding this conceded theoretical superiority of the Stevens brake, and the long-continued use of it by the defendant, it now claims that experience has proved, and that the testimony shows, that in practical results the Hodge is quite as good a brake as the Stevens, and on many accounts to be preferred.

With regard to the theoretical advantage of the uniform pressure of the brakes on each wheel, undoubtedly the full benefit which otherwise might result is diminished by the inequality in the pressure of the wheels upon the rails, said to be attributable to the "tipping of the trucks," alleged to take place where the retarding force is applied. Because of this tipping, or for some reason, when the brakes are applied to stop a train the rear pair of wheels of each truck do bear upon the track with less weight than the forward pair, and will, consequently, endure less brake

pressure without sliding. This is a difficulty, however, which interferes with the operations of the Stevens and Hodge brakes alike, and prevents either from yielding its best results; but it does not, so far as we have been able to see, tend to annihilate any advantage which either might otherwise have over the other. Neither pretends to deal with this peculiar difficulty, and it still remains true that no more pressure can be applied to any wheels of the car than the wheels which bear least upon the 287 track will endure without sliding; and as one pair of these wheels will always be one of the pairs to which the Hodge brake distributes the greater amount of pressure, that limit will be reached with the Hodge brake before any of the other wheels have received the full retarding pressure which might be safely applied to them. The difference between the pressure distributed to the end wheels as compared with the inner wheels, with the Hodge brake, as usually constructed, is $33\frac{1}{2}$ per cent. The disparity in the pressure on the track caused by the tipping of the truck when the brakes are applied to a train in motion, is estimated to be about 15 per cent. The average aggregate retarding pressure which can be applied to the wheels of a car with the Stevens brake is calculated from these *data* to be 20 per cent. more than with the Hodge brake.

We think that the complainants have made it appear by testimony that by the use of the Stevens brake properly constructed, and kept in effective working order, there not only should be, but that there is, particularly when operated by hand power, a very appreciable saving in the wear of car wheels; and on this point the complainants have produced some very positive testimony showing the money value of the wheels thus saved. The difficulties of proving the exact money value of this saving to this particular defendant are exceptionally embarrassing. The Stevens patent was never generally acquiesced in, and it would

appear that the defendant's railroad is one of the very few on which it was introduced under the supervision of the inventor, and constructed as exhibited in his patent.

On many of the railroads on which the defendant claims that it was used, and on which it did not prove itself to be superior to the Hodge brake, it appears that it was used without license, and was so imperfectly constructed that it worked badly, and quickly got out of order. None of the difficulties testified to by the witnesses, who speak of its use on other roads in these imperfect forms, are shown by any testimony to have been experienced by the defendant.

It would also seem that the results of the use of the two 288 brakes in recent years, in connection with air and other power mechanically applied, is not a fair test of their relative advantages in former years when hand power exclusively was used; since, with the air power, the retarding force can be controlled to a nicety, and applied simultaneously to all the wheels of the train, so that a much less force on each wheel is sufficient to stop the train, and the risk of sliding wheels is much diminished. Nor do the special experiments made by the defendant with the two brakes alternately, convince us that there is no choice between them in respect to causing brakes to slide. In these experiments neither form of brake caused any wheels to slide. This the complainants contend is to be accounted for by the fact that the brake shoes used were made of hard polished steel, different from those formerly used on the same railroad, and that the car being quite heavy it was hardly possible to apply force enough to make the shoes hold the wheels so as to cause any of them to slide. There seems to us to be force in this suggestion. It appears highly improbable that the defendant, having special need of the best form of brake, should, for nearly 30 years, have voluntarily and continuously used the Stevens brake on all its

passenger cars in the face of threatened litigation from the beginning, in the face of the decree of Judge Drummond in 1866 sustaining the patent and awarding \$50 per car per year against the Chicago, Burlington & Quincy Railroad Company as the profits accruing to that railroad from its use, and in the face of the suit instituted against the defendant in this court in 1864, unless there had been very decided advantages to be derived from its use.

The validity of the complainants' patent has been established by the decrees heretofore passed in these cases, and the defendant is now before us in the attitude of a wrongdoer. It is necessary only for the complainants to show to the court before its master, by testimony, facts upon which compensation is to be based, and by which it may be computed, as clearly as circumstances will permit. That he has been wronged has been decided. The pecuniary measure of that wrong is all we have to ascertain. To prove accurately 289 the money value of the advantages which the defendant has derived from its use of the patent is undoubtedly difficult. The complainants have been obliged in great measure to procure their witnesses from railroads whose interests are with the defendant, and the Stevens brake, as used on other roads, has been a modified and in many instances an unskillfully made form of the patented device.

Considering all the difficulties and embarrassments of the complainants' position, we are satisfied, after a careful examination of the evidence, that they have substantially sustained the burden of proof which the law imposes upon them, and that the master's findings are warranted by the testimony. It is to be considered, however, that this is a patent which was only valuable to the patentee as he could induce railroads to use it and pay him for its use and that it was worth nothing to him as a monopoly.

An established license fee, when one is proved, is unquestionably the safest rule of compensation in such cases, and in view of the great difficulty of proving with exactness the profits which have accrued to the defendant, the license fee found by the master to have existed, at least during the latter portion of the life of the patent, commends itself to us, under the circumstances of this case, as the measure of compensation least likely to do injustice to either party.

It was said by the supreme court in *Packet Co. v. Sickles*, 19 Wall. 618, that taking profits as the basis of compensation in courts of equity had produced results creating distrust of its fairness. And in *Burdell v. Denig*, 92 U. S. 720, that court, after recognizing that profits are the primary rule in equity, and a license fee in actions at law, say: “No doubt, in the absence of satisfactory evidence of either class in the forums to which it is most appropriate, the other may be resorted to as one of the elements on which the damages or the compensation may be ascertained.”

The testimony shows that after the validity of this patent was sustained by Judge Drummond in the United States circuit court for the northern district of Illinois, and after the decree of that court in 1866 affirming the master’s report in 290 the case against the Chicago, Burlington & Quincy Railroad Company, finding the profits derived by that road from the use of the “Stevens” patent to have been \$50 per car per year, the complainant fixed \$25 per car per year as the license fee for all railroads using it, and that some 18 railroads either compromised for past use or took licenses for future use substantially on the basis of that fixed rate.

Although this rate may possibly be less than the defendant’s actual gain, and is less by five dollars per car per year than the amount found by the master, in the absence of more exact means of computing what that gain was, and as there is conflict of testimony on

that subject, we are disposed to accept the sum of \$25 per car per year as the proper rate of profit to be decreed to the complainants in all three of these cases, and we will sign a decree in each case for an amount calculated on that basis. As we allow these sums as profits, we do not allow interest.

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