

**KEITH BLACKMAN**

**PATENT DISPUTE**  
**KEITH v DAVIDSON**

**CIBSE Heritage Group**

1911.

THE  
**ORIGIN AND PROGRESS  
OF MULTIBLADE FANS**

Some up-to-date Vital Facts in Fan History—  
Object Lessons in the working of the British  
Patent Laws—Imperative call for reform.

*By a Technical Expert.*



**A REPLY.**



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# THE ORIGIN AND PROGRESS OF MULTIBLADE FANS.

SOME UP-TO-DATE VITAL FACTS  
IN FAN HISTORY.

*Object Lessons in the Working of the British Patent Laws.*

IMPERATIVE CALL FOR REFORM.

BY A TECHNICAL EXPERT.

**I**N July, 1910, the American Blower Company, Detroit, Mich., U.S.A., published a pamphlet entitled "Fan Bulletin No. 2, Sirocco Engineering Series." In this pamphlet, under the head of "Facts about Fans," are set forth various truths, half-truths and plain mis-statements of fact, the last being expressed with such an air of plausibility as to be bound to mislead even the most acute readers. Because of this and also in view of the fact that an important decision which was relied on to support the whole has since been reversed, and no attempt has been made by the publishers to correct any misapprehension created by the pamphlet, it appears to be necessary to publish the following reply, setting forth the actual facts.

Up till nearly fifty years ago, the blades of cased centrifugal fans seldom exceeded six in number. In 1863, however, Bennet Hotchkiss of New Haven, Conn., U.S.A., patented the **first** multiblade or multivane centrifugal fan wheel, having long and narrow scooped blades forming a cylindrical drum with open centre, large eye (**of at least four-fifths the diameter of that of the fan wheel**), the inner and outer longitudinal edges being parallel to each other and to the axis of the wheel, all practically identical in principle and construction with the similar form of "Barlow" and "Fournier et Cornu" fan wheels or runners of respectively thirty and fifteen years ago, and "Sirocco," "Ordnance," "Serlano," and "Sturtevant" fan runners of to-day.

Bennet Hotchkiss' United States Patent is numbered 40482, and dated November 3rd, 1863: and abridgments of the same Patent were duly lodged in the British Patent Office. In his specification and diagrams Hotchkiss shows a wheel having fifty radial blades mounted on a disc at one end and an inlet ring at the other end, with each blade of a depth **not exceeding one-twentieth** the diameter of the wheel, and of an axial length about **six times or more** the radial depth.

The accompanying illustration shows a Hotchkiss runner, with blade removed to show blade form and proportions.

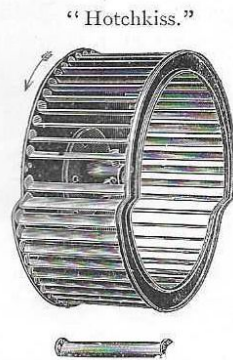
Fifteen years later, Charles Barlow, of London, England, patented a similar form of multiblade fan (British Patent No. 3253, A.D. 1878), in which the runner or wheel (applied in a volute casing) had a large open eye or inlet (of at least four-fifths the diameter of that of the runner) and numerous narrow parallel blades with their delivery edges curved well forward and tilted in the direction of rotation: the said fan blades being stated and claimed to be in radial depth only one-fourth or even less of the radius of the fan wheel, which of course is equivalent to the feature specified in Davidson's 1898 British Patent—20 years later—



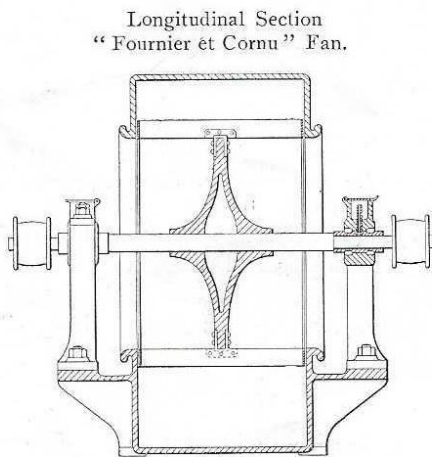
A.D. 1878.

*i.e.*, the provision of parallel blades of a depth not greater than about one-eighth of the diameter of the fan wheel, while the axial length of the said Barlow blades may be any length, or in Barlow's words, "the blades may be shorter or longer axially as occasion may require." As a matter of fact, the diagrams in Barlow's Patent show the blades to be nearly three times as long axially as they are radially deep.

Eighteen years later, in 1896, Messieurs Fournier et Cornu of Paris, France, patented yet another multiblade fan which they entitled, "Nouveau Système de Ventilateur dit 'Le Rationnel,'" having a volute casing, and fan wheel or runner with parallel elongated and curved blades, and large open eyes, similar in these respects to the original "Hotchkiss" wheel or runner of 1863.

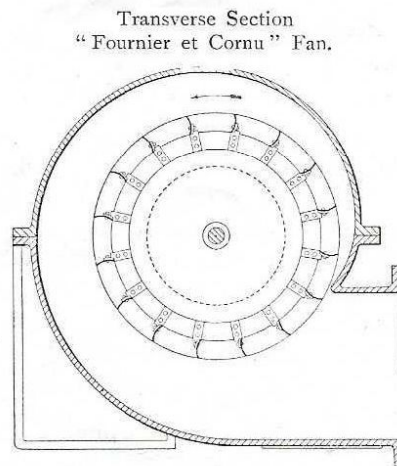


United States Patent  
No. 40482, A.D. 1863.



French Patent  
No. 254064, A.D. 1896.

Fournier and Cornu show blades many in number, narrow, elongated, and curved, of radial depth not greater than one-fourteenth of the diameter of the fan wheel, and of axial length as shown—*i.e.*, about six times their radial depth.



French Patent  
No. 254064, A.D. 1896.

They further reserve the right to vary these proportions, shapes, curves, dimensions, and combinations, to suit conditions required.



Then, in 1898, Mr. Samuel Cleland Davidson, of Belfast, Ireland, patented his "Sirocco" fan, the wheel or runner of which appears to be **identical** with the multiblade fan wheel of **Hotchkiss**—as described and illustrated—of nearly 35 years **prior** date.

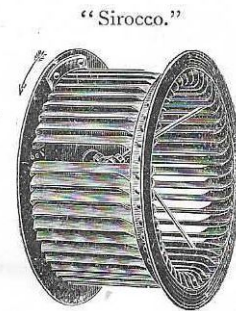
On all the main points the "Sirocco" fan also appears to be similar to the "Barlow," and to the "Fournier et Cornu" Fans described and illustrated.

As regards the feature of numerous blades curved or tilted well forward in direction of rotation, Davidson's claims appear to be anticipated by Marie Antoine Ser's British Patent No. 13871, A.D. 1884. **The large open eye** referred to in Davidson's claims would also appear to be anticipated by the British Patents of Henry Aland, New Wandsworth, London, in 1883, in which the invention as described "**consists of increasing the suction inlets of rotary fans to the size, or nearly the size, of the diameter of the revolving disc,**" and of George Greig, Kincardineshire, Scotland (No. 12611, A.D. 1884), in which it is clearly stated that the **whole circumference of the fan casing** in the form of inlet "**may be open.**"

The accompanying illustration shows the form of Davidson's "Sirocco" standard fan wheel as made and supplied by his Company in accordance with his 1898 British Patent, with one blade removed to show blade form and proportions.

Compare this with the "Hotchkiss" wheel.

As might be expected in the circumstances the **validity** of the said Davidson British Patent has never been affirmed by any British Court of Law; and, as it lapses entirely on the 24th of February, 1912, no attempt to have the Patent reviewed by the Court will presumably now be made.



British Patent  
No. 4609<sup>a</sup>, A.D. 1898.

In the circumstances one is astonished to find an advertisement inserted by the now defunct Sirocco Engineering Company of New York in the "Engineering Review," New York (July number, 1908), headed "Due Notice," in which the public were informed that the said Company's Patents covered broadly the principle and construction of the "Sirocco" type of blower, and the following impertinent "**warning**" was given:—

**"Any Fan or Blower of the Drum or Multiblade type is an infringement of our Patent Rights.** Buyers are warned against such, and are advised that actions are now pending against infringers, and that our Patents will be protected to the fullest extent of the law. They have already been sustained by the Courts of Great Britain and Germany. No guarantee by whomsoever made can protect the buyers of an infringing fan or blower in the right to use same after an adverse decision of the Courts."

This presumptuous advertisement was promptly challenged at the time by James Keith, C.E., in a letter to the editor of the said "Engineering Review" of New York, which appeared in due course in the August (1908) number of that journal, and in which Mr. Keith pointed out that the said Company had "**every reason to know that they had stated that which was contrary to fact,**" and challenged the advertisers to

make good their threats against his company "James Keith & Blackman Company, limited," if they could! The only result, however, was that the said offensive, misleading, and threatening advertisement of the Sirocco Engineering Company of New York, was immediately withdrawn and disappeared from public view!

It may be noted that the Sirocco Engineering Company of New York did not long survive its presumption, as it appears to have gone out of business on its own account within about a year, more or less, from the date of the said announcement; and its mantle has now apparently been assumed by the American Blower Company of Detroit, Mich., U.S.A.

To return to the position of the Davidson Patent :—

Mr. Davidson has twice attempted, though not wholly successfully, to get his Patent amended, in order presumably to include other combinations: and, in fact, in a decision of 1906—in refusing the most vital of the proposed amendments—the then Comptroller-General clearly indicated that the granting of such amendments might make the applicant's invention different from what it was!

In 1909, another British Comptroller-General, in refusing certain amendments as unjustifiable, indicated that the applicant was applying during the twelfth year of the life of his Patent to amend the specification his reason presumably being to put him on a better footing for bringing further proceedings against alleged infringers.

On this latter occasion Mr. Davidson's counsel coolly asserted that should the said amendments be allowed it was intended to raise law actions against various people mentioned for infringement.

Mr. Davidson being unsuccessful in his endeavour to secure the desired amendments, none of these suggested actions matured.

As a matter of fact, Mr. Keith has repeatedly but vainly invited legal action against himself for infringement. It is also an open secret that one of the largest and most influential companies in England has been waiting for something like seven years, more or less, for an action for infringement to be taken against it by Mr. Davidson.

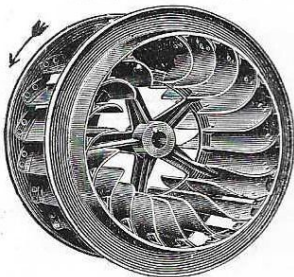
The sum-total of the proceedings brought by Davidson is that in eleven opposition cases the Comptroller-General has ordered the insertion of a specific reference to Davidson's Patent, while two actions for infringement have been raised. One defendant, in 1906, for reasons best known to himself, admitted infringement, and came under a Court injunction not to infringe again: subsequently the Court held that he did infringe again, thus breaking the injunction, and he was punished accordingly more for contempt of Court than for anything else. The second case, in 1908, was settled by arrangement out of Court; afterwards the Court was called upon to make the said arrangement a formal order or decision of the Court. The questions of novelty or validity of the Davidson 1898 Patent, said to have been infringed, were not decided in either of these cases.



Now comes the rub !

Hitherto, what may be termed **squirrel-cage** forms of fan-wheels have been dealt with, but in 1906 and 1907 respectively, Mr. James Keith, Assoc.M.Inst.C.E., M.Inst.Mech.E., managing director of James Keith & Blackman Company, limited, of London, Manchester, etc., a recognised fan expert and leading ventilating engineer of over forty years' practical experience, invented two new forms of multiblade fans, covered by British Patents, which included some novel internal features in the fan casings.

1906.  
"Keith" Fan Wheel.



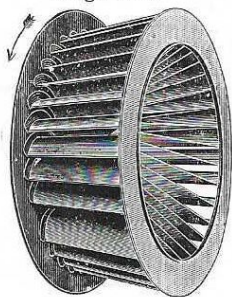
Loose blade, showing blade form and proportions.



British Patent  
No. 10048, A.D. 1906.

It being an axiom with all *bona-fide* inventors never to rest satisfied with what they have done, Mr. Keith designed, in 1908, another type of multiblade fan, also known as the "Keith" fan, which so far outstripped every other type or form of fan for **volume-pressure** work, that it took the whole fan world by storm.

1908.  
"Keith" Fan Wheel.  
Single-inlet.



British Patent  
No. 11591, A.D. 1908.  
Loose blade removed to show blade form and proportions.

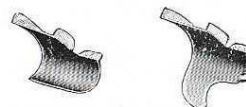
It will be observed that this "Keith" wheel or runner, in principle and construction, is different from those of any other previous form. In the single-inlet form the wheel assumes the shape of a double-truncated cone, while in the double-inlet form the wheel consists of two double-truncated cones conjoined.

It will also be noted that the blades are neither narrow, elongated, parallel, nor parallelly set towards each other: but that instead they are deep and tapered or conoidal in form, and parabolically curved, having their outer and inner edges inclined to the axis of the runner, and their inner edges set obliquely to the same axis.

1907.  
"Keith" Fan Wheel.

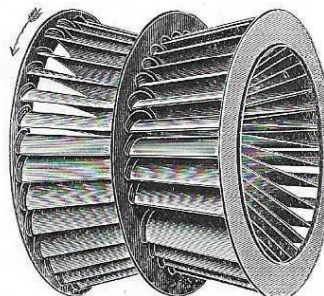


Loose blades, showing blades' form and proportions.



British Patent  
No. 3246, A.D. 1907.

1908.  
"Keith" Fan Wheel.  
Double-inlet.



British Patent  
No. 11591, A.D. 1908.  
Loose blade removed to show blade form and proportions.

Two modifications or adaptations of the "Keith" fan were patented in 1909—

The "Keith"  
Electric Table Fan.



British Patent  
No. 12289, A.D. 1909.

One being in the form of a novel electric table fan and lamp combined, as illustrated herewith, by means of which coolness and comfort (without noise or draughts) are obtained on dining tables, desks, etc., by the circulating and freshening of the atmosphere in quite a new manner.

The other (Keith and Tuson's British Patent No. 29960, A.D. 1909) being in the form of a positive electric run ventilator, applicable to railway carriages, tramcars, smoking cars, and suchlike.

The "Keith"  
Electric Table Fan,  
Electric Motor and  
Fan Frame.

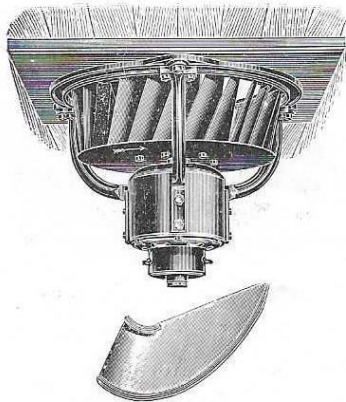


British Patent  
No. 12289, A.D. 1909.

Again, in 1910, Mr. Keith patented a modified **Open** multiblade fan for the primary purpose of giving high efficiency at high speed, in the pressure handling and delivering or extracting of air in large volume.

This "Keith" fan of 1910 appears to have marked the greatest advance made in **open** or volume-pressure fans during the present century; and for the cooling down and ventilation of underground or other electric-power stations or engine rooms, engine rooms and stokeholds of ocean liners, laundries, etc., or for the effectual ventilation of underground electric-run subways, "tubes," or railways, or of any place where it is necessary to change the air rapidly or in large volume under pressure, the said 1910 **Open** "Keith" fan has been found to give phenomenal results.

The Open "Keith" Fan,  
1910,  
Electrically-driven.



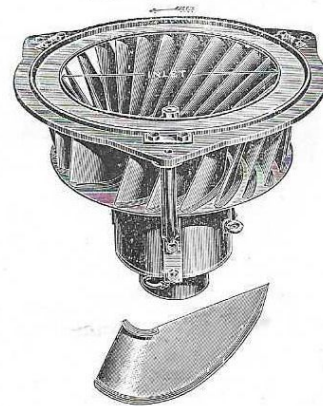
British Patent  
No. 23096, A.D. 1910.

As illustrated on the left-hand side, the 1910 Open "Keith" fan is shown as applied to a ceiling, for inward ventilation or propulsion of the air inwards.

On the right-hand side, the engraving shows the internal construction of the fan. The Open "Keith" fan is equally applicable for extraction and for propulsion.

The illustrations of loose or single blades removed show blade form and proportions.

The Open "Keith" Fan,  
1910,  
Electrically-driven.



British Patent  
No. 23096, A.D. 1910.



The following data show what the 1910 Open "Keith" fan will do, and is actually doing, in the way of volume and efficiency:—

### Test

made October, 1910.

25-inch diameter-inlet Fan : full Volume : full Area.

Revolutions per minute.	Volume in cubic feet.	Horse Power.
850	10,300	2'4

To give another example, 100,000 cubic feet of air per minute can be and are being delivered by a larger size Open "Keith" 1910 fan—at 1 inch water-gauge—with an expenditure of only 24 horse-power.

The 1910 Open "Keith" fans of 25 inches diameter inlet are being used at the present time directly-driven by high-speed steam turbines to do the exceptional work under-noted.

Each fan running at 2,250 revolutions per minute, and delivering 23,000 cubic feet of air per minute, giving a maintained **static** pressure of 5 inches water-gauge while delivering the said large volume of air **openly**—*i.e.*, without any fan casing.

In view of figures like the above, it is not to be wondered at that the public challenge to all and sundry (announced so openly and so long in practically all British technical and engineering journals as well as in the *Times* and other leading papers) by James Keith & Blackman Company, limited, inviting comparison or competition with the results obtained by the "Keith" fans, has—up to date—never once been met.

As shown in the said four Patents of 1908, 1909, and 1910, and as herein illustrated, the blades of the "Keith" fan wheels have their straight outer and inner longitudinal edges lying on conical surfaces differently inclined to the axis of the fan spindles, while the diameter of the fan wheels, both inside and outside, is always greatest where the blades are narrowest.

The blades, again, of these particular "Keith" fan wheels, being deepest at the back or disc end, project or protrude into the very centre, and in some cases beyond the centre of the wheels, thus purposely "**obstructing**" the central portion of the wheels in order to enable the inward projecting blade edges to do a double service: first, to offer an increased resistance to the incoming air towards the disc end, and thus tend to give an increased induction at the intake end or ends, and so better equalise the air delivery along the inclined outer longitudinal blade-edges; and, secondly, to pick up the incoming air more readily in the very centre of the wheels—cutting or slicing into it—and thus gently screw it round at approximately right angles.

The design and construction of the 1908, 1909, and 1910 "Keith" fan wheels are so scientifically strong, yet light withal, and that too **without the use of any stays or rods**, as to permit of the very largest "Keith" fan wheels being run at the highest practicable speeds with safety.

As showing the difference in principle between the Davidson "Sirocco" fan wheel and the 1908, 1909, and 1910 "Keith" fan wheels, it may be sufficient to point out:—

FIRST.—That Davidson (following Hotchkiss) distinctly shows in his said 1898 Patent that the blades are spaced apart so that the width of the air ports between the blades is from one-half to two-thirds or thereby the radial depth of the blades.

SECOND.—That the inside and outside edges constituting the limits of the ports or air spaces between the blades have to be **parallel** in the direction of the axis of the wheel.

THIRD.—That the blades are so tilted forward in the direction of rotation of the wheel that the width of the ports or air spaces between the blades on the outside or delivery side of the wheels, is much **less** than that of the same ports or air spaces at the inlet side.

FOURTH.—That Davidson purports to fix the number of blades employed, and to limit their spacing, by showing by diagram, and stating that the blades must only be kept as far apart as to allow a line drawn from the centre or axis of the wheel to pass clear through between the blades in such a manner as to touch the back of one blade on the inside edge and the delivery or forward edge of the next or following blade, almost exactly as Hotchkiss described in his Patent of 1863.

Whereas in the 1908, 1909 and 1910 "Keith" fans, the very opposite of the said principles holds good—that is,

FIRST.—That there is no such spacing limit to the blades of the said "Keith" fan wheels.

SECOND.—That the inside and outside edges constituting the limits of the ports or air spaces between the blades of the said "Keith" fan wheels are **not parallel** in the direction of the axis of the wheel.

THIRD.—That the width of the ports between the blades of the said "Keith" fan wheels is, in every case, **greater** on the delivery side or outside of the wheels than it is on the inlet side.

FOURTH.—That no such line—drawn from the centre or axis of any of the said "Keith" fan wheels of 1908, 1909 and 1910 Patents—can possibly pass through clear between the blades of the said "Keith" wheels as illustrated.

Such being the difference between the fans under the "Keith" 1908, 1909 and 1910 Patents and the fans of Davidson's Patent, the reader may be somewhat surprised to learn that all of the four "Keith" British Patents from 1908 to 1910 were (though in the end unsuccessfully) opposed by Mr. Davidson.

Towards the end of 1909 Mr. Davidson filed declarations with exhibits of fan wheels, etc., to the effect that he, Samuel Cleland Davidson, was the pioneer and original Inventor and Patentee, in 1898, of the cylindrical or drum type of multiblade fan wheel, having, as he put it,

" Long and narrow blades,  
Many in number, and  
Large eye or inlet opening,"



and he asked, in virtue of his British Patent No. 4609\*, A.D. 1898, that the two first-named James Keith Applications of 1908 and 1909 be either rejected *in toto*, or, if granted, that a specific reference to his (Davidson's) 1898 Patent be ordered to be inserted in the said James Keith Patents.

Mr. James Keith filed declarations in reply, together with a number of exhibits, consisting of—

- Two declarations from himself,
- Three declarations from expert Patent agents of high repute ;
- Two declarations from skilled, practical and experienced engineers ;
- One declaration from a skilled draughtsman ; and
- One declaration from a skilled electrician and fan expert—

in all, nine declarations, in which Mr. Davidson's extraordinary claims were dealt with, and something like nine anticipations from 1863 downwards were cited (chapter and verse being given) to show that the three elements of Mr. Davidson's 1898 fan referred to in his said declarations—viz., as stated—

“ Long and narrow blades,  
Many in number, and  
Large eye or inlet opening,”

were to be found separately and collectively in most, if not in all, of the said prior publications ; and proof was given that, on the one hand, the features covered by the claims of Davidson's 1898 Patent were well known and public property long before Mr. Davidson was apparently engaged in the fan business, and, on the other hand, that matters which Davidson was seeking to read into his claims were not to be found there at all.

In addition, evidence was given in the said declarations to show that the “ Keith ” fan, in design, principle, and construction, was novel, and fundamentally different in almost every particular from the “ Davidson ” fan.

As events proved, all the labour entailed in formulating the said Keith declarations might have been saved, as their contents had apparently little, if any, effect upon the Comptroller-General.

The cases were duly heard before the Comptroller-General at the Patent Office, with the result that the Comptroller-General, holding apparently that the words “ **substantially as described** ” at the end of Davidson's claims really included some words of constructive descriptive matter loosely used in the body of Davidson's specification, decided to grant the said Keith 1908 and 1909 Patents, subject to specific reference to the Davidson 1898 Patent !!

The reasons he gave for his decision were inconsistent, and **were afterwards upset by his Superior, the Law Officer.**

As Comptroller-General, in his decision of 9th May, 1910, he stated :

“ Davidson's Claims are :—

- “ 1. That the blades are long in comparison to their depth.’
- “ 2. That there are a large number of blades.’
- “ 3. That the inner and outer edges of the blades are substantially parallel to the axis of the fan.’
- “ 4. That the intake or eye is large, and about equal to the area of the port intake.’

“Mr. Bousfield called attention to lines 44 to 47 on page 4 of Davidson’s 1898 specification, where it is stated that ‘for increased strength the inner edges of the blades may be sloped inwards towards the disc, to provide a proper attachment thereto’; and he exhibited a model of a fan runner, which he alleged was clearly covered by the words quoted, and which shows most of the essential features of the “Keith” fan.

“It appears to me that this construction described on page 4 (of Davidson’s specification) is, with the exception of the external coning, practically a description of Keith’s construction.

“A fan constructed in accordance with Davidson’s description on page 4 would clearly produce the effect sought for by Keith, whether it was intended or not, and it would appear to be in the nature of a discovery, and not a Patentable Invention, to point out an effect in a construction not noticed by the **original inventor**. Substantially, therefore, it would seem to me that, with the exception I have mentioned, the Keith construction has been described by Davidson.

“I have come to the conclusion that I ought not to refuse the grant of a Patent to Keith for the following reasons :—

“1. External coning of the runner may be a difference of importance ; and,

“2. The internal coning would appear to be greater in Keith’s case than in Davidson’s.

“With regard, however, to a specific reference, I have come to the conclusion that the opponent is entitled to this, both on the ground of the specific construction described on page 4 of Davidson’s, and of the general construction of Davidson’s fan, which appears to be re-incorporated in the Applicant’s Patent.

“I am not concerned to enquire whether ‘Davidson’s’ fan is what is commonly called a ‘**master patent**’—it is sufficient for me if Davidson’s invention is clear and distinct in its own field, and, as far as can be gathered free from anticipation, and if it is substantially repeated or involved in the Applicant’s specification. I can only repeat upon this point what I have said in a former case, that ‘Davidson’s’ fan, **so far as the Office search has gone**, stands alone, and constitutes a great practical advance, and, for all practical purposes, **would appear to be the first fan of a multibladed type in which blades long in comparison with their depth, mounted on a disc, are used.**”

Let it be here noted, that the words “**for increased strength the inner edges of the blades may be sloped inwards towards the disc to provide a proper attachment thereto,**” as quoted by the Comptroller-General as appearing in Davidson’s specification of his 1898 British Patent, and forming as they did Davidson’s main excuse for entering opposition against the “Keith” Patents, do not appear in any form in Davidson’s corresponding Patents in the United States, Germany, Austria, etc. : but instead, it is distinctly laid down in the said foreign Patents, that the protuberance of the blades **in any manner** into the central cylindrical space inside the fan wheel and beyond the parallel inside lines of the blades, was prejudicial to the efficiency of the fan: the inner central space of the runner or wheel requiring to be “unobstructed!”

Comment appears to be unnecessary !!



Note.—The “specific reference” referred to and granted, was as follows :—

“I wish it to be understood that I am aware of the Specification of Patent No. 4609\* of 1898, granted to Samuel Cleland Davidson, and I do not claim anything described or claimed therein.”

Surely, quite simple and true, but liable to be misinterpreted, as in the case mentioned immediately following.

Although the above decision, given on the 9th of May, 1910, was appealed to the Law Officer by Mr. Davidson, this did not prevent the decision being published with illustration of the “Keith” fan in July, 1910 (or a little over a month later), in the already mentioned “**Fan Bulletin.**” In the same “**Bulletin**” was published the under-noted absolutely false announcement that the effect of such an insertion :—

**“which is called in English Law ‘A Specific Reference’ (in a Patent) is to require Mr. Davidson’s consent to the manufacture of the alleged blades. This consent has not been given.”**

See “Note” preceding, for the actual wording of the “specific reference.”

Such a course of procedure, in reference to a case which at the time was *sub judice*, and which was on appeal by Mr. Davidson himself, is, to say the least of it, highly reprehensible.

At the hearing of the appeal (Mr. Keith also being an appellant), it was shown that, in a previous decision, both by the Comptroller-General and afterwards by the Attorney-General of the day, on appeal in 1907, in the case of the same Mr. Davidson’s opposition to Mr. Paul Kestner’s No. 8605, A.D. 1905 Patent, and on the very points set forth by the present Comptroller-General, he (Davidson) had been wrong all through. The present Law Officer, on the 25th of July, 1911, following this previous decision, **reversed the Comptroller-General’s decision of 9th May, 1910.**

In his judgment he laid it down, in unmistakable language, that he entirely agreed with the views so forcibly expressed by the former Comptroller-General in 1906, and repeated and confirmed later by the Attorney-General of the day in 1907, the fair meaning of which in effect being that the subject of Davidson’s 1898 Patent consisted simply and solely of a fan wheel cylindrical in form, having a series of long narrow parallel blades with their inner and outer edges parallel to each other and to the axis : the blades being of strictly limited proportions as to their depth and length and in comparison to the diameter of the wheel, and fastened to a disc : all as shown on the drawings, and as particularly defined in the **claims** of the said Patent.

Further, the Law Officer held—in effect—that Davidson’s said Patent had nothing whatever to do with “**things of a triangular form,**” like Keith’s blades or wheels ; and that the “**strengthening**” of the ends of the blades at the disc end (casually mentioned in the body of Davidson’s specification and not referred to in the “**claims**”)

was for the purpose of avoiding attempting to apply merely mathematical exactitude to the description, and certainly was never intended to provide for a **“triangular”** blade like Keith's.

It having been agreed by Counsel for both parties that the decision on the first James Keith's 1909 Application should follow the decision on the 1908 Application, the Law Officer directed the sealing of both these James Keith Patents, without any specific reference to Davidson's or to any other Patent.

Subsequent to this decision of the Law Officer, the Comptroller-General, in the opposition to application No. 23096 of 1910, by decision (dated 15th August, 1911) **reversed his own decision of 1910**, thus repudiating his own former reasoning; and he used the following words:—

**“I think therefore I must hold that the type of Fan described and claimed in the Applicant's (Keith's) present specification is not of the Davidson type, and that no further reference or amendment is necessary.”**

This decision has wisely been accepted by Mr. Davidson **as final**.

Following on this an opposition against the second 1909 Application (Keith & Tuson's) was **abandoned** by Davidson.

**Thus ends the Davidson tradition for originality and pioneership in, and Patent-rightship of, the multiblade type of fan.**

Now may be pointed out the peculiarities of the British Patent Office:—

In hearing the opposition to Application No. 23096 of 1910, the Comptroller-General expressed surprise at the report of the decision in the aforesaid Kestner case in 1907, brought to his notice by the Counsel for the Applicant, and in referring to a decision of his own of the previous year used the not very intelligible words:—

**“If Kestner's case had been decided then, it would have made a very considerable difference.”**

Now the **final** decision by the Attorney-General of the day in the Kestner case was given in 1907, **only three years before!**

When, again, the Comptroller-General of the British Patent Office pooh-poohs the positive proofs of long prior anticipation of the Davidson claims as described in his said declarations, on the plea that they **might** be relevant in a case of infringement, or, possibly (as he has put it) if a **“master patent”** were claimed, but ought not to be taken into consideration when the rights or wrongs of certain claims and assumptions in opposition were being questioned, and when he has also admitted his absolute ignorance of what had been finally decided by one of his predecessors, and confirmed by the Attorney-General of the day in 1907 (only three years before) in limitation of these very claims, one is almost forced to conclude that

**“there's something rotten in the State of Denmark,”** and

that the Comptroller-General's knowledge of important rulings, copies of which ought to be at his hand, is remarkably restricted.



Reverting to the expression of the Comptroller-General :—

**“ If a ‘ master patent ’ were claimed, ”**

admittedly the Davidson 1898 Patent is not a **“ master patent ”** in any sense, yet the Comptroller-General—notwithstanding his own previous ruling concerning the only grounds upon which specific references were applicable—surely went out of his way and apparently did his best in his aforesaid 1910 decision (now recalled) on the Keith Patents opposition, practically to treat Davidson’s 1898 Patent as a **“ master patent, ”** for matters which were not **claimed** in any complete specification of Davidson.

There was thus actually occasion for the Applicant’s Senior Counsel to point out on the hearing of the appeal by the Law Officer on 25th July, 1911, that the Comptroller-General and his learned friends, the two Senior Counsel for the Opponent, had, in their arguments, apparently forgotten the Patents Act altogether, wherein it was clearly provided in Section 11, Sub-Section 1 (b), that the only excuse for interference with an application for Patent by specific reference or otherwise was—in the words of the Act—

“ That the invention has been claimed in any complete specification for a British Patent, which is or will be of prior date to the Patent the grant of which is opposed, other than a specification deposited pursuant to an application for such last-mentioned Patent ”—

and after making a stringent comparison between the Opponent’s model put in and the claims of the Opponent’s Patents showing their utter inconsistency, he—the said Counsel for Applicant—wound up by pointing out that in the “ Keith ” fan the exact opposite in design, principle and construction, was exemplified, and that the best proof of all this was that the Opponent had never attempted to take his courage in his hands and bring an action for infringement against the Applicant.

It will be seen that, had the Applicant been so weak and inexperienced as to knuckle under the first decision of the Comptroller-General in 1910, he might have had to face an unjust action for infringement based principally on the remarks of the Comptroller-General.

What, then, is the moral to be drawn in the interests of inventors, patentees and the general public in all this connection, and from particular cases in British Patent Office procedure which thus accidentally come to light ?

What are the qualifications for the important office of British Patent Comptroller-General ? Is the filling of that appointment a political job ? How do such seeming inconsistencies arise ? Surely the Comptroller-General of the British Patent Office—with practically the fate of so many inventors in his hands—ought to be a man possessed of the highest experience in Patent matters and of considerable engineering and technical skill, with a judicial mind capable of giving full effect to the weight of legal and practical evidence !

What, again, is the nature of the examination by the Patent Office as regards Novelty of patented inventions, when it is on record that during the hearing of the cases in question the present head of the British Patent Office has stated that so far as the

search in the Patent Office had gone, Davidson's 1898 fan stood alone, constituted a great practical advance, and appeared to be the **first** fan of the multiblade type in which comparatively long and narrow blades were used, and has indicated that Davidson was the **original inventor** of the multiblade cylindrical drum type of fan, when—as has been demonstrated in these pages—**this was not the case ?**

As regards the Official Reporting and Publishing of Proceedings and Decisions of the Patent Office, let it be noted that on 17th July, 1911, when the first mention of the Kestner case (already referred to) was made to the Comptroller-General, he pleaded ignorance, and asked ingenuously—

**“Is the Kestner case reported anywhere?”**

He was informed that unfortunately no report of that case had been published.

As a matter of fact, a copy of the decision in the said Kestner case had to be furnished by Mr. James Keith himself, and this important case—bearing as it did on the utter absurdity of Davidson's claim for anything but long, shallow and absolutely parallel blades in his said 1898 Patent—was apparently **unknown** at the British Patent Office!!

It is not to be wondered at, that when the whole matter came before the Law Officer in July, 1911, he commented on the fact that the said Kestner case (which so utterly disposed of Davidson's claim for any form of triangular blade whatever) was the only case out of eleven cases of opposition by Davidson prior to those in hand in which a specific reference to Davidson's 1898 Patent had been refused: first, by the Comptroller of the day, and afterwards (when Davidson himself had appealed to the Law Officer) by the then Attorney-General in 1907, who absolutely and finally decided against Davidson with costs!! Yet, here was the same Opponent (Mr. Davidson) appearing on appeal before the Law Officer in 1911 on the same points!!

The question naturally comes up:—

Why was the report of the Kestner case, so all-important on the particular points again raised, **not** published?

Surely it is the duty of the Patent Office to see that all important cases pertaining to Patents, and particularly those cases finally decided by the Law Officer of England, are published, and that its officials are posted up to date as regards decisions, only two or three years before, bearing on the particular points they are called upon to investigate?

In any case, it is to be hoped that the report of the Keith-Davidson Opposition cases from 1909 to 1911 **will** be duly published.

Is it to be wondered at that the efficiency of the British Patent Office is still the lowest of the three principal invention-producing countries of the world—viz., Great Britain, the United States, and Germany—or is it surprising that it should have been lately brought to the notice of the writer that a Patent granted for a particular invention in the United States in 1888 should have been followed by a Patent granted in Great Britain in 1900 for an identical appliance, and that yet another Patent should have been granted in Great Britain in 1910 for the same appliance, all to different people?



Considering that Patents for inventions allowed to individuals are enforced against the public to whom the inventions ultimately revert, inventions ought to be severely examined as to novelty, utility, and practicability, before Patents are granted; and then these ought to be given every protection by the Government in the interests of the people at large and for the encouragement of invention. The very opposite, however, appears unfortunately to be the case at the present time, and until party spirit is absolutely eliminated from the preparation of any new Patents Act and until such an Act is drafted and designed solely for the benefit of the nation and in the interests of real progress, no material relief or advance can possibly be expected.

Unquestionably, in the eyes of British inventors and manufacturers of British specialties and in the eyes of those who do a real world's trade, the present British Patents Act, with its **provoking** provision for compulsory manufacturing under British Patents within the United Kingdom, and the in some respects analogous Merchandise Marks Act of 1887—still in force—have done more to restrain or injure British trade and to benefit foreign competition—principally German manufactures—than any other form of legislation in recent times.

In the first place—as the result of the latest British Patents Act—European Nations have already begun to **retaliate** to such an extent that British inventors holding Patents in Europe find themselves forced either to drop their foreign Patents altogether or to make arrangements at great loss and expense for having their inventions manufactured wholly abroad in every country where a Patent has been obtained, as they can no longer expect the provisions in the Patent Acts of the different European countries for compulsory manufacture to remain a dead letter. In fact, since the promulgation of the latest British Patents Act, we are beginning to hear from Germany and elsewhere on the Continent of the resuscitation of these provisions.

What benefit British industries may eventually derive from the imposition of compulsory working is still highly problematical. Certain it is that, considering there are more applications for Patents in Germany for instance by British inventors than there are applications for Patents in Great Britain by Germans, the revocation of Patents which have not been worked in the United Kingdom has, up till date, only practically resulted to the benefit of a few Continental concerns, and in bringing more loss to the British than to the Germans. Thus British inventors and British trade have suffered most.

The same spirit of retaliation, again, has engendered in the official class in Germany such a bitter feeling against practically everything British, that, in practice, it has now been found to be nearly impossible to get any Applications for Patents from British subjects for really useful inventions accepted in Germany if, in the interim, these have been opposed by interested Germans resident or in business in Germany. The supposed security afforded to British inventors or patentees of one year's priority in Germany for their Patents granted in Great Britain, when applications for Patents for these (under the International Convention) are made in Germany, appears to be only a delusion and a snare. The right to apply for a German Patent under the International Convention is not by any means the same thing as the right to receive a German Patent, whereas a German applying for a British Patent under the same Convention can safely look forward to receiving his Patent as a matter of course.

It would appear as if the authors of the British Patents Act from which so much was expected had not learned a lesson from the failure of the Merchandise Marks Act, though the injury inflicted on British trade by that Act ought by this time to be fully appreciated. Why such an Act of Parliament—so foolishly passed under panic in the latter part of the nineteenth century—has been allowed to survive into the twentieth century, is rather a mystery!

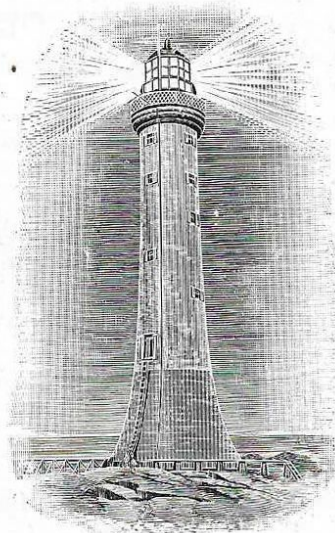
The trade of Great Britain is supposed to be run on Free Trade lines,—*i.e.*, free to buy from, and free to sell to, the whole world—but, under this extraordinary Merchandise Marks Act, British manufacturers are actually precluded from putting their own names or their own Registered trade marks on their own goods or on parts of such goods if not actually made in the United Kingdom, unless with the addition of such words as **made in Germany** or other similar notice, to glorify a foreign country.

No other country in the world is inflicted with so foolish an Act for the purpose of advertising and exploiting the wares of its competitors, as the British Merchandise Marks Act of 1887!

Such is the character of British **business** Legislation; what the nature of its administration is may equally be judged by the foregoing.

Patent Law and management of the Patent Office are not matters for **party politics**, and should be the anxious concern of any Government in Power.

Had the call for **reform** not been so long ignored there would have been no occasion for the present **Reply** and **criticism**.



LONDON.

A.D. 1911.