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Nearly a dozen bills having in view a change in the patent laws have been introduced at the present sesperty and crush many of the industries that now flourish under the protection of the patent laws.

For example, bill H. R. 1,171 provides for vacating patents; 1,344, for securing public use of patents; 1,286, 1,569, 1,637, 4,368, "to protect innocent purchasers" by allowing everybody freely to infringe; 1,327, to limit the damages to be recovered by patentees; 1,431, to reduce the term of patents; 3,326, to regulate the use of patent rights.

It is to be hoped none of these bills will pass.

The Electrical Association lately discussed patent laws and the necessity of their revision, several of the members having become satisfied that changes were demanded. One of the new features proposed was the establishment of a patent court as a branch of the Patent Office. The general result of the discussion was, we believe, that the present laws worked so advantageously, it was not prudent at the present time to try to introduce any new, experimental features.

Of other suggested changes, among the most sensible are those presented by Senator Chandler, and contained in a memorial by Mr. J. McC. Perkins, of Massachusetts :

"He asks that the patent laws of the United States may be so amended that patents shall be granted substantially as they were before the law of July 4, 1836; the first patent law, of 1790, authorizing the grant of letters patent to any person who applied in proper form and paid the required government fees. In 1835 the Secretary of State informed the public that patents were issued in the order of time that proper documents were received at the Patent Office. In 1836 Congress radically changed the law regulating the grant of patents by providing that they should not be issued until the Commissioner of Patents should be satisfied that the subject matter was really patentable. The object in thus changing the law was to obviate inconveniences resulting from the fact that, because drawings and specifications in those early days were not published, some patents came to be many times duplicated. Under the sale at a merely nominal price of drawings and specifications immediately upon the issue of every patent, inventors can easily ascertain whether or not it will be profitable for them to obtain patents and to undertake to enforce such patents by suits in the court, and the reason of the change made in 1836 no longer applies. Under the present system the memorialist states that the features of a judicial tribunal have been engrafted upon the Patent Office until now its machinery rivals in elaborateness that of the Federal courts, and yet after all the proceedings have been had in the Patent Office and a patent is issued, nothing has been settled. The whole question must be fought over again in the courts, the same as before the law of 1836.

"The memorialist claims that the practice prevailing before 1836 of granting patents to all applicants is substantially the English system and that of all other patent-granting countries. The memorialist proposes as his remedy for existing evils to abolish the requirement of a Patent Office examination before the grant of a patent, and to give to every inventor his patent on his filing a correct application therefor; and, if disputes arise between different inventors as to their rights, to let the controversies be settled by the courts alone, exactly as they, in fact, must be and are now settled. He states that the annual report of Judge Mason, Commissioner of Patents in 1855, presents very clearly the reasons why this change should be made; that Commissioner Foote, in his report for 1868, re-enforces Judge Mason's recommendation, and that the ablest Commissioners of Patents have repeatedly pointed out the great injustice of the present system."

If these changes were enacted, inventors would be come their own examiners in respect to novelty; all delays would be done away with, an increase in the number of patents granted would take place, and the present force of examiners would be able to maintain and carry on the business of the office in the most efficient manner.

Frenchman, the Englishman, 'You have written a book. We want it, and we propose to take it. You have no rights that we are bound to respect. We shall sion of Congress, most of which, if passed, would have reprint your work, and mutilate it and sell it, and do the effect to destroy the present value of patent pro- as we like with it, and you shall never receive a penny for it.""

Now, however wicked it may be to "steal" a book, how much worse it is after stealing it to mutilate it; to remove the real author's name and put another in its place, thus robbing him of all credit; to cut out chapters and replace them with others written by strange hands; to change the scene of a story, and, leaving the author's name on the title page, put sentiments in his mouth which he has not expressed and does not hold! We ask, is not this even worse than what our author calls stealing? Yet the British publisher of American books does all this-has been doing it for years, and is still at it.

An American author, Mr. Brander Matthews, who, be it said, strongly favors international copyright, says: "The American pirate only steals your purse, but the British pirate also robs you of your good name." In his recent article in the Princeton Review, he says: "In 1876, Longfellow wrote to a lady in England whose works had been republished in America without permission: 'It may comfort you to know that I have had twenty-two publishers in England and Scotland, and only four of them ever took the slightest notice of my existence, even to send me a copy of the books. Shall we call this "chivalry" or the other word ?' When General Lew Wallace, the author of 'Ben Hur.' was last in London, he went to the store of Messrs. Frederick Warne & Co., and bought a copy of his book. He examined it a moment, and then asked to see the head of the firm, whose attention he called to certain alterations made in England without any authority from him. 'I see you have changed my title,' said Gen. Wallace, 'and you have written an entirely new preface and signed my name to it.' The publisher hesitated, and at last stammered forth that they had thought they could improve upon it. And have you taken any other liberties with my books?' pursued Gen. Wallace, and Mr. Warne answered that they had left out the story of Ben Hur, and made a few minor changes. And the British pubpresent practice, however, with the publication and lisher has never offered to make any payment to the American author whom he had despoiled and whose work he had disfigured."

> Dr. Holland, on a similar visit, found that Messrs. Ward, Lock & Tyler had printed one of his books with chapters condensed, rewritten, and otherwise mutilated. In another of his works he discovered a long preface by one S. O. Beeton, in which is "a note of tearful regret for John Camden Hotten, who was a very Blackbeard among British pirates, as ingenious as he was unscrupulous."

> Still another book had its title altered, parts left out, and the story anglicized so as to turn a Fourth of July celebration into a loyal merry-making over the Queen's birthday. The annual list of British publishing houses abounds with American reprints, hundreds upon hundreds of them, it is said, and many, if not most of them, more or less mutilated. Nor is it an unusual thing in England to discover an American work appropriated by a foreign author. The cases are well known of the taking of Miss Wistar's adaptations from the German by the Rev. S. Baring Gould for use in what he claimed to be his own work, and again of the appropriation by the Rev. Sir George W. Cox, Bart., of the "Young Folks' Cyclopedia of Common Things," the work of Mr. John D. Champlin, Jr., an American. Hawthorne's works, some of them changed in title, as, for instance, the "Transformation" for the 'Marble Faun," are found in pirated shape in all the principal English libraries, so are Dr. Holmes' works and a host of others. All British publishers do not do these things. By no means. But if there is a single American publisher who engages in such practices, we have yet to hear of him.

# Normal Lectures in Science Teaching.

On February 15, at 4 P. M., the first of a series of

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<b>V.</b> <i>A</i>	ARCHITECTUREElements of Architectural DesignBy H.	
1	H. STATHAMThe second lecture delivered before the London	
5	Society of Arts; sequel of this remarkable development of a	
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# AMERICAN AND BRITISH "PIRATES."

three lectures on the above subject was delivered by Dr. T. O'Conor Sloane, in the hall of the Industrial Educational Association, in this city. The general plan of the course is to show how completely a

In a pamphlet sermon entitled, "The National Sin course of instruction in physics can be illustrated with of Literary Piracy," for which a forty-two year patent experiments performed with the most simple apparahas been secured, the Rev. Mr. Van Dyke draws a tus. The ground covered in the first lecture included rather grim picture of the American publisher who reproperties of matter, cohesion, porosity, elasticity, impenetrability, etc., the general laws of motion and prints foreign works; and the reader, who may be unfamiliar with the otherside of the question, will scarce force, action and reaction, impact, centrifugal and rotary force, and the mechanical powers. A large refrain from sympathy with the British publisher, who, by the author's inference, has so nice a moral percepnumber of experiments were given in the above subjects, very little except common, everyday objects tion that it will not permit him to indulge in the same being employed. In the succeeding lectures the rereprehensible practices. One cannot help the regret that the author is not informed of this other side, bemaining ground, exclusive of electricity, will be covcause of his evident sincerity, for then we should have ered. The audience comprised the leading educators had the two pictures side by side, the American and of the city, the public schools being largely reprethe British publisher, and thus been able to judge of sented by their principals and vice-principals. The dates for the next lectures are February 29 and their relative merits and defects. On page 15, he says: "This nation [the American] says to the German, the March 14.

Comparative Wages, American and Foreign. The following tables from the New York Press are stated to be reliable, and to have been complied from recent authentic sources by Mr. Alfred R. Whitney. The statements in regard to the wages paid in England are compiled from the latest returns made by the Board of Trade in London and other official documents for 1886.

It must be remembered that the cost of living here as shown by official figures is 17 per cent higher than in England.

	En	gland.	Unit	ed S	tates.
Bookbinders	\$	600 600	\$15.00	)to\$ )to	18 00 90 00
Boilermakers		775	15 00	, 10	16 50
Brickmakers.		3 54			11 86
Bricklayers		8 00			21 00
Blacksmiths		6 00			13 30
Butchers		6 00 6 or			12 00
Blast furnece kooners	1				12 75
Blast furnace fillers		7 50			14 00
Boltmakers		6 50			16 50
Bolt cutters		300			10 00
Coal miners.		5 88			13 00
Componitors		4 60			0 7% 15 00
Coopers		6 00			13 25
Carriagemakers		6 75	13 0	0 to	25 00
Cutlery		6 00	12 0	) to	20 00
Chemicals	\$4 00 to	6 00	13 0	0 to	16 00
Clockmakers		700			18 00
Farm hands		3 00	7 5	0 to	9.00
Glassblowers	600 to	9 00	25 0	0 to	30 00
Glass (partly skilled)	600 to	7 00	12 0	0 to	15 00
Glass (unskilled)	2 00 to	4 00	70	0 to	10 00
Glovemakers (girls)	•	2 50	60	0 to	9 00
Hatters		4 00	19.0		30 00 94 00
Heaters and rollers	10 00 to	12 00	20 0	0 to	30 00
Iron ore miners		5 50			12 00
Iron moulders		7 50			$15 \hspace{0.1in} 00$
Iron per ton (finished)	2 00 to	3 00	53	1 to	8 71
Laborers		7 00	18 0	0 to	20 00
'Longshoremen.		8 00			15 00
Linen thread (men),		5 00			7 50
Linen thread (women)		2 35			5 22
Machinists		8 50			18 00
Masons Printers (1400 ems)		800			21 00
Printers, week hands		6 \$5			13 40
Patternmakers		7 50			18 00
Painters		7 50			15 00
Plumbers		8 00			18 00
Plasterers		7 50			18 30
Polishers		7 00			18 00
Papermakers		5 20	12 (	10 to	24 00
Puddiers, per week	8 00 to	10 00	18 (	10 to	20 00
Quarrymen		6 <b>0</b> 0	12 (	10 to	15 00
Railway engineers		5 25 10 00	90	N 10	21 00
Railway firemen.		5 00			12 00
Shipbuilding:					
Boilermakers		7 00			14 00
Machinists		7 00			14 15
Platers		6 50 8 00			10 50
Drillers		6 00			12 00
Riveters.		8 00			17 40
Riggers		5 50			11 00
Patternmakers		8 00			24 00
Saltmakers		600 500	9 (	10 to	10 50
Silk (women)		2 50			6 00
Scarfmakers	1 50 to	2 25	6 (	)0 to	9 00
Servants (month)		5 00			15 00
Shoemakers		6 00			12 00
Stationary engineers		2750 5.00	15 (	N to	18 00
Tanners		5 00	. 80	00 t.0	10 00
Teamsters		5 25	12 (	00 to	15 00
Upholsterers		8 00			18 00
Watchmakers		8 00			18 00
wire arawers		11 00			x2 00

# WOOLEN GOODS.

Below is a table showing the average weekly rate of wages paid in woolen factories in the United States (Massachusetts), France (Rheims district), England (Yorkshire district), and Germany (Rhenish district). It is impossible to doubt the accuracy of this table, as Carroll D. Wright is responsible for the United States figures, ex-Consul Frisbie for those of France, Robert Giffen for the English, and ex-Consul Du Bois for those of Germany.

#### United England. France. German

hands in Providence and of a similar mill in Bradford, England, according to Mr. Charles Fletcher:

	–Provi	dence.	-Bradi	ford.
	Per week.	Total.	Per week.	Total.
45 small boys and girls	•			
14 years old	\$3 25	<b>\$146 25</b>	<b>\$1</b> 50	<b>\$</b> 67 50
104 small boys and girls	3,			
18 years old	. 5 25	546 00	2 50	260 00
50 boys and girls, 2	1			
years old	. 600	300 00	3 00	150 00
6 section hands	. 13 50	85 00	7 00	42 00
2 overseers	. 24 00	48 00	9 00	18 00
1 superintendent	. 36 00	36 00	15 00	15 00
1 boss dyer	. 30 00	30 00	10 00	10 00
8 laborers in dye house	. 700	56 00	4 50	36 00
1 watchman.	. 14 00	14 00	6 00	6 00
2 machinists for repairs	. 15 00	30 00	7 50	15 00
2 clerks	. 15 00	30 00	7 00	14 00
Total cost of weekly pa	ay roll	<b>\$</b> 1.317 25		\$633 50
107.02 per cont in favor	of Drouid	-	ivos	-

# Diffraction of Sound.

Lord Rayleigh, F.R.S., lately lectured at the Royal Institution on "The Diffraction of Sound," and performed remarkable experiments bearing relation to the analogy between the phenomena of sound and light.

He stated that sound shadows are not sharp, but sharper than is generally supposed; because, in passing round a hill, a little time is necessary to realize the difference in intensity of a sound thereby shadowed. The indicator in his experiments was, he said, one of Another surprising circumstance was that but few the sensitive flames to which Dr. Tyndall had devoted worms were found in the intestines, and those of small so much attention, and which were most sensitive to extremely high notes; indeed, Professor Barrett and himself-Lord Rayleigh-proved about the same time statement of the above facts to Messrs. Munn & Co., that the notes to which they were sensitive were near editors of the SCIENTIFIC AMERICAN, who took great the limits of audition. The sound he would use that evening was not audible to the human ear, and was produced by air issuing steadily through a small orifice. It would throw shadows several feet long. The length of the sound waves to be used was about half In China, however, this is not the case. Hundreds an inch of complete wave length. Sound waves were and even thousands of dogs die in the same diseased usually much longer, for instance the wave length of middle C was 4 feet. Every solid body, he remarked, is an almost perfect reflector of sound. On holding a wooden disk at different angles behind this sensitive flame, burning at three or four feet from the source called the "cruel threadworm." It is the Filaria of sound, the reflected sound had an influence upon immitis. Some writers refer it to Spiropters sanguinthe flame even when the disk was a yard behind. Tissue paper and glass reflectors had a similar influence. gain access to the blood vessels." Dr. Lamprey says The waves of sound consisted of what were called that "the hearts of dogs at Shanghai are invariably loops and nodes. The flame was excited by the loops and became quiescent in the nodes. A peculiarity of die suddenly in a fit, and some linger long in great the phenomenon was that the flame was not uniformly pain. sensitive---that is to say, that when sensitive to the east and west, it was not sensitive north and south, all statement that the entozoa which we had found were other conditions being the same. The flame could be of interest on account of the unusual size attained (33 excited by a small mirror a yard off, and the mirror centimeters), as the usual length was only 10 to 12 centiwould produce diffraction phenomena, because a meters. small mirror in sound was analogous to a small hole in optics. By placing the reflector at certain distances behind the flame, the following results in maxima and minima of disturbance were obtained :

Table of maxima and minima in centimeters. Maxima. Minima 1.1 

10-3	3	· · · · <b>· ·</b> · · · <b>· · · · · ·</b>		,			. 89
131	0						11.7
15	9						14.7
In	one	experiment	he	interposed	a	glass	scree

en d a gia with a large hole in it between the sound and the jet, and the flame was quiescent. The hole was about the size of a dinner plate. When he diminished the of the dog, we learn that in India, where this disease size of the hole the flame began to flare. The same took is most prevalent, it is supposed that the animals may place when he inserted a disk smaller than the hole, have obtained their parasites from the ova of Ascarides leaving an annular air space. He said that when passed by man. It has been asserted that human ex-Fresnel strongly advocated the then unpopular wave crement forms the principal food of dogs in China and theory of light, a French mathematician opposed to the India. Presuming the possibilities of the development theory proved that if Fresnel were right, an opaque of the Filaria immitis from the ova of the Ascarides, disk placed under certain conditions in a beam of sun- this would account for the great prevalence of the light, instead of throwing a complete shadow, would disease in those countries.

necessary apparatus, and proved that under such circites a case where a dog was killed and found to conbe received upon a piece of ground glass and examined. ings of the Elliott Society.

vealed, proving that the disk was producing a series of sound rings. He then took a sheet of zinc about 18 inches in diameter, out of which a series of concentric rings had been cut, and when this was placed across the path of the sound waves, the flame flared more than when no obstruction intervened; in fact, he stated the zinc grating acted as a lens did in optics -it concentrated the sound.

# Filaria Immitis Found in a Dog. BY F. W. SCHLEPEGRELL, A.M.

In February, 1884, a favorite dog, one of the coach variety, was found lying in a comatose condition, without having shown any previous symptoms of disease. This condition, in the course of a few hours, was succeeded by convulsions and death. The symptoms being somewhat similar to those exhibited in cases of dogs poisoned by strychnia, an examination was instituted which developed the remarkable fact that the right ventricle of the heart was filled with nematode worms. We counted thirteen in number, ranging from eight to thirty-three centimeters in length.

The presence of such an obstruction in the heart explained fully the symptoms observed and the result, but we were unable to understand how these parasites had found their way into the heart, as we supposed that they belonged to the alimentary canal, and that they could have been in the heart but a short time. size compared to those found in the heart.

Unable to find a satisfactory explanation, we sent a interest in the case, and gave us, in substance, the following particulars:

That our statement was of interest, as, in this country, cases such as we described are fortunately rare. condition. The entozoon which we described was doubtless one of the nematode blood worms, and not an inhabitant of the intestines. The species so fatal to dogs in China and Japan is often appropriately olenta, but Cattold says that that species "does not found to contain these entozoa." The dogs sometimes

They concluded their interesting letter with the

Having gained this information, we made a microscopic examination of a female *Filaria immitis*, which we had found in the heart, and found the oviducts crowded with eggs and embryos in all stages of development. We also made a special examination of the blood with one of the higher powers of the microscope (400 diam.), and found it crowded with the bodies of parasitic animalcules. In our examination we found only the fully developed worm, which, with the embryos observed in the oviducts of the Filaria immitis examined, convinced us that they are reproduced viviparously, and that the young are afterward carried along in the circulation.

In seeking for the origin of this diseased condition

throw one with a bright spot in its center, thus reduc- Dr. Lamprey thinks that the presence of this hæmaing the whole matter to a *reductio ad absurdum*, as he tozoon is only prejudicial to the canine bearer when thought, but Fresnel, nothing daunted, fitted up the the animal is suffering from some other cause, and cumstances there actually was a spot of light in the tain over 300,000 of these minute worms, without havmiddle of the shadow. The experiment may be per- ing previously developed any symptoms of uneasiness. formed by means of a threepenny bit suspended in a This, however, appears very improbable. In the case, dark room in a beam of sunlight admitted into that for instance, which came to our notice, the dog eviroom through a small hole; the shadow thrown should dently died from the effects of the parasitism .-- Proceed-

Occupation.	States.		2	0.01.11.1.j.
Wool sorters :				
Men	<b>\$</b> 9 <b>4</b> 3	\$5 82	<b>\$5</b> 76	<b>\$</b> 5 50
Women	6 00	2 70	2 40	2 50
Young persons Spinners:	5 12	2 00	1 80	190
Men (overseers)	12 00	650	6 00	6 <b>6</b> 0
Spinners	9 05	6 00	5 00	5 25
Women	6 18	3 00	3 00	3 00
Young persons	4 81	2 00	180	190
Piecers Weavers:	5 00	3 00	2 50	2 40
Men	8 53	4 67	4 90	4 25
Women,	745	4 00	348	4 00
Mechanics	13 40	6 25	5 50	5 00
Laborers	3 58	3 75	3 35	3 00

United States than in any of the European countries.

# WORSTED GOODS.

The analogue of that experiment in optics he would exhibit before them in sound.

Lord Rayleigh then took a disk of glass about 15 inches in diameter and suspended it in a carefully regulated position between the source of the sound and the sensitive flame. The sensitive point of such flame is just where the gas issues from the burner, and when According to official authority, wages are 100 per the sound analogue of the spot of light fell at that cent higher in the woolen and worsted industry in the point from the interposition of the disk, the flame be-Relative actual cost of labor in a woolen mill of 221 sound, other positions which caused flare were re- furnace of the ship's hold.

# Hollow Masts,

There has been an official inquiry into the loss of the British ship Athelstan, which was burned from the spontaneous ignition of her cargo of coal. According to the account given by a London contemporary, during the time the fire was confined below the deck, the captain and chief mate were surprised to find flames issuing from the tops of the iron fore and main gan to flare; the slightest motion of the disk from the masts, which were hollow, and had a number of perproper position would stop the flaring. By moving forations in them below deck for the purpose of ventithe disk at right angles to the direction of the lation. They operated like two chimneys, to make a