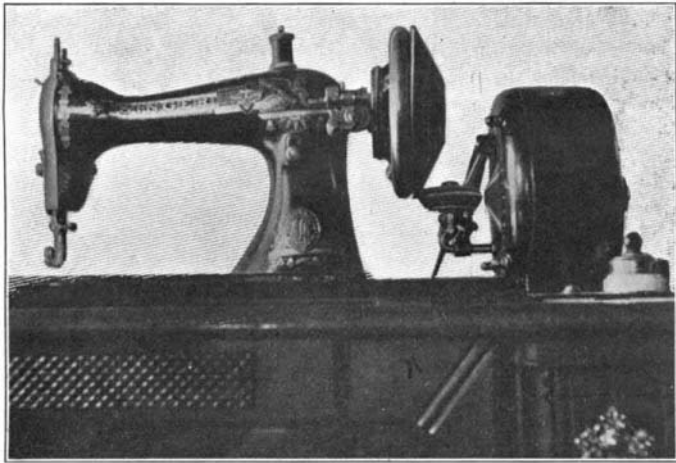




VARIABLE SPEED GEAR FOR MOTOR-DRIVEN SEWING MACHINES.

The advantages of using an electric motor to operate a sewing machine are greatly increased by the provision of a positive mechanical means for changing the speed of the machine to suit varying requirements. Our illustration shows a simple gear designed to ac-

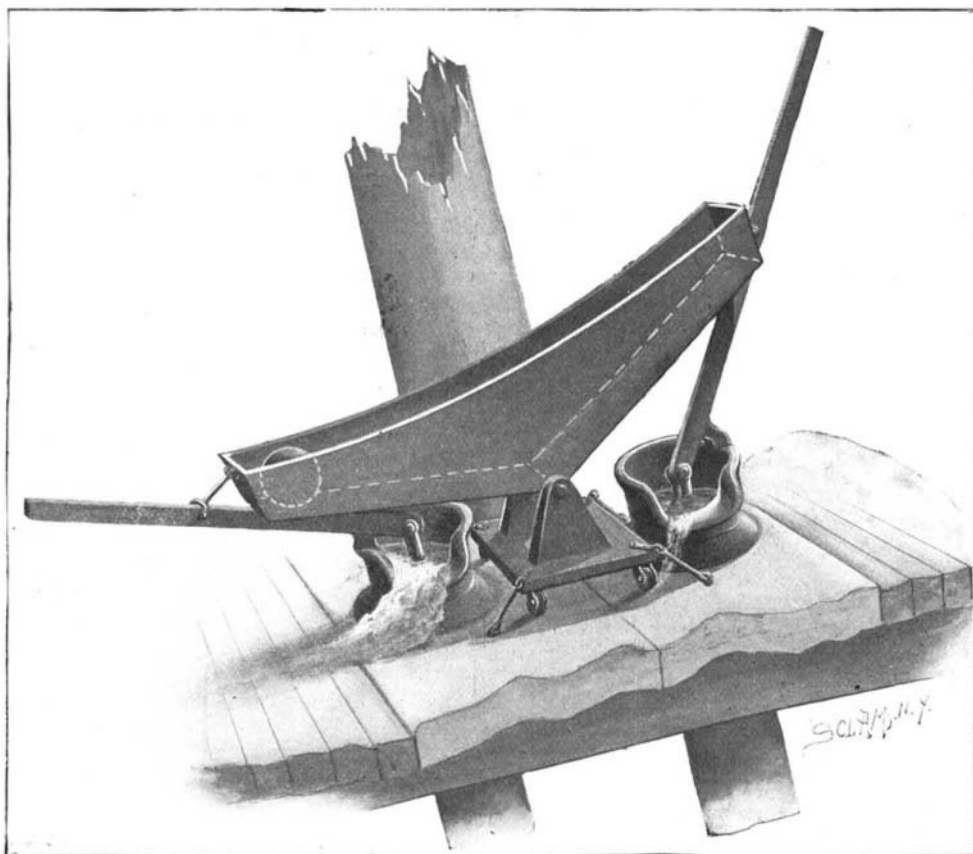


VARIABLE SPEED GEAR FOR MOTOR-DRIVEN SEWING MACHINES.

complish this result, which is the invention of Mr. Edward P. Dawson, of 708 South Main Street, Butte, Mont. The gear is very simple and contains no parts which are liable to get out of order. Secured to the driving shaft of the sewing machine is a cone which faces a similar cone secured to the armature shaft of the motor. The cones are spaced apart, the axis of the motor cone lying above the periphery of the other cone, so that their adjacent faces are parallel. A friction wheel is located between the cones in such position that its periphery will engage their faces. The friction wheel is mounted in a slide adapted to travel in guide rods projecting from the motor and lying parallel with the upper face of the motor cone. Normally, the wheel is held in its lowest position by means of a spring acting on a lever connected with the slide, but by means of a cord the outer end of the lever may be drawn down, thus raising the wheel. On operating the motor motion is transmitted from one cone to the other by frictional contact with the intermediate wheel and obviously by raising and lowering the wheel the speed of the machine may be easily varied to any degree desired. The gear shown in our illustration has been in use for six months and we are informed has given perfect satisfaction.

WAVE MOTOR FOR PUMPING SHIPS.

"What can't be cured must be endured," says an old proverb, but the Yankee version reads: "What can't be cured must be put to some use," and a capital illustration of this appears in the accompanying en-



WORKING A VESSEL'S PUMPS BY MEANS OF A WAVE MOTOR.

graving, which shows a device adapted to use the rolling motion of a ship to work the vessel's pumps. The invention, which is to be credited to Mr. David L. Bradley, editor of the American Ship Builder, New York city, is simplicity itself, comprising merely a trough linged at the center to a standard and secured at its outer ends to the handles of the pumps. The motion of the vessel causes a heavy ball in the trough to roll from one end to the other, rocking the trough up and down, and thus operating the pumps. Since the pumps practically balance each other the weight of the ball when two pumps are used need be but little greater than the weight of water lifted at a single stroke of one of the pistons. Ships at sea, particularly coastwise vessels, ordinarily roll much more than they pitch; but if at any time it be desired to use the pitching movement of a vessel the rocker trough can be disconnected from one of the pumps and the platform on which the rocker is mounted may be easily swung about to the desired angle and secured by hooks. The simplicity and compactness of the motor should appeal to the captains and owners of all schooners or barges, for they will find it very effective, requiring no attention, costing nothing for operating power, having no intricate parts liable to get out of order, and which at the same time occupies a minimum of deck space, which is so valuable for the stowage of freight.

A School of Invention.

A manufacturer at Newburg, N. Y., Mr. Thomas Coldwell, himself an inventor of some repute, advocates a new study in the public schools, the cultivation of genius and particularly of inventive genius. In a letter written to the Newburg Journal, from which we make the following extract, Mr. Coldwell outlines his interesting plan.

"Some children show a greater natural taste or inclination for arithmetic or grammar, or any other line of education, than do others, and yet we give them all the same general education, regardless of their natural taste and often through persistent study and encouragement some of the duller scholars at the start graduate with the highest honors and become our brightest and most successful men.

"If this be true in regard to developing genius in these general and popular lines of education, why not in the line of inventive genius? And why should not every boy be given the privilege of developing himself in this line as well as in any other? I know that inventors generally are looked upon as dreamers and cranks, but the world would be in a sorry plight without them. Next to religion we are indebted to them for our advanced civilization more than any other one thing.

"To give this a practical test I would suggest that our Board of Education offer prizes in the manual training department for the best inventions or improvements in connection with their work, or tools, either in inventing something entirely new, or any improvement in old things, or any suggestions for improvements in connection with the same.

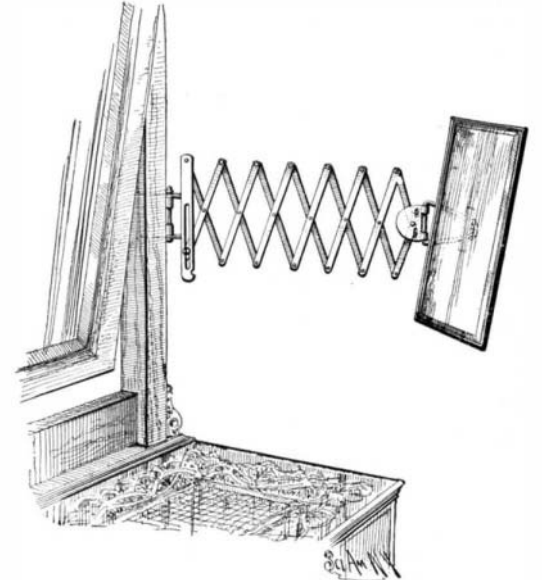
"If the Board of Education have not the power to offer these prizes, they might allow private individuals to do it. I have tried this plan in our factory, and have been surprised at the development of inventive genius among the men. During the first six months we had only eleven suggestions for improvements; during the fourth six months we had over seventy. And this rapid development was from men who had shown no marked genius in this line previously."

If the prominence of his witnesses is any criterion, Lloyd Collis, of New York city, must certainly possess a valuable patent. The patent covers an improved car coup-

ling. As witnesses to the inventor's signature we note on the drawing the names of Collis P. Huntington and W. L. Strong and on the specifications the names of Chauncey M. Depew and George J. Gould.

ODDITIES IN INVENTION.

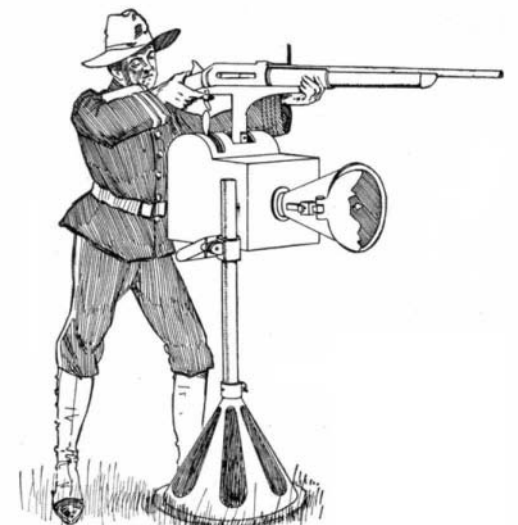
MIRROR SUPPORT.—The advantage of having a small mirror attached to a bureau mirror by an extensible bracket is readily apparent, permitting, as it does, the use of both hands when viewing one's reflection at different angles. Nevertheless such an attachment is liable to prove a great annoyance unless it can be compactly folded up when not in use. A bracket which can thus be folded is provided by a recent invention, and is illustrated herewith. It consists of a lazy tongs extending from a bar which is hinged to the bureau. One of the links of the lazy tongs is



MIRROR SUPPORT.

pivotaly connected with the upper end of this bar, while the other adjacent link is provided with a pivot-stud which passes through a slot in the bar and may be secured thereto by a thumb-nut. Obviously on raising or lowering this stud in the slot the bracket can be extended or retracted to any desired extent. The small mirror is mounted on the end of the bracket in such manner that it can be turned to any angle. The entire bracket also can be swung in a horizontal plane to any required position.

TARGET PRACTICE WITHOUT AMMUNITION.—The raw recruit may now be perfected in target practice without wasting any ammunition or exposing himself and others to the dangers resulting from carelessness and poor marksmanship. This can be accomplished by using a new apparatus recently patented by a Swedish inventor. The apparatus comprises a dummy gun mounted upon a universally jointed support which permits the gun to be pointed to any desired direction. A pointer co-operates with this support to indicate even the slightest movements of the gun. The parts are normally so adjusted that when the gun is aimed di-



TARGET PRACTICE WITHOUT AMMUNITION.

rectly at the target the pointer registers with a bull's-eye mark at the center of a glass disk on the front of the apparatus. A clamping device is actuated, when the trigger is pulled, to lock all the parts against further movement. Deviations from the proper aim may be then determined by noting the position of the pointer. In practice it may be found desirable to secure a mirror in front of the registering disk so as to reflect the position of the pointer to the marksman. The unskillful operator being provided with a registering target close at hand can thus more readily observe his defective aim and more quickly learn to perfect himself in target practice.

Brief Notes Concerning Inventions.

Charles Filer, who was paroled recently from the Trenton State Prison for good conduct, is the inventor of a blind lock stitch sewing machine which he devised while serving his fourth term for burglary. The machine is said to have been patented in thirty-four countries, and its inventor is reported to have received large sums for his patent rights. Filer is about forty-two years old and has spent nearly twenty years of his life in prison. He claims that all his good fortune sprang from his imprisonment, for if he had not been forced to work in the prison tailor-shop he would never have thought of the blind-lock stitch-machine.

During his lifetime, Charles L. Pullman, brother of George Pullman, invented a number of devices for different purposes, and he spent the greater part of his time before his death in the endeavor to introduce these inventions and get some substantial recognition of the value of the devices. One of them, an automatic means of ventilation, has proven to have considerable merit, and is now being exploited by quite a powerful concern with a manufactory at York, Penn. The system is said to be adapted to the ventilation of street and railroad cars as well as all kinds of buildings, and it has been adopted in the construction of a number of office buildings. The feature of the Pullman apparatus is that the flow of air is so regulated by means of an automatically-operated valve, that there is a constant inflow of air without any objectionable draft and at the same time excluding the rain and dust. Some of these ventilators are in operation in the White House.

An improvement in the construction of freight cars, designed to facilitate the handling of grain, has been made recently by J. L. Hamel, a millwright formerly of Grafton, N. D., but now employed in a Minneapolis grain mill. His design of car is particularly intended for the unloading of grain, which operation is performed in a remarkably short time as compared with the old method. This is done without the removal of the side doors, there being openings in the bottom of the car, manipulated entirely from the outside by means of a convenient lever. It is necessary only to run the car over a hopper and open the valves, and the grain runs out by its own weight without any further attention. There is provision for covering these openings in the floor when it is desired for the purpose of loading some other character of freight. A car can be emptied in this manner in from three to five minutes.

The method of bringing a vessel to a stop by the use of brakes in the shape of fins fixed along the side of the hull below the water-line, has recently received the indorsement of an agent of the Canadian government appointed to examine into the merits of the scheme. The Canadian government turned over the steamer "Eureka" to the inventor of this system, Louis Lacoste, and James Bowdin, Master of Dredging of the Harbor of Montreal, was appointed to witness the tests, which were made in the rapids of the St. Lawrence River in the vicinity of Montreal. In his report, Mr. Bowdin says the experiments were entirely successful. He says that after the steamer had attained a speed of eleven miles an hour, the fins were opened and the steam shut off, and the craft was brought to a full stop in less than her own length. Many tests of stopping the boat under different circumstances were made, and all were said to be very successful. In the matter of turning the boat with the aid of the fin brakes, it was found that she could very readily be reversed in her own length. In order to test the strength of the brakes, one of them was opened as the boat was proceeding at full speed, and it successfully withstood this severe trial.

By the means of a new attachment to a flute, there is secured a hitherto unknown quality of music which is a combination of the flute and the clarinet. The invention consists of a reed head which is transversely fitted to the head of the flute in such a manner that it may be turned around the barrel of the instrument freely. If the music to be performed calls for the ordinary flute, the regular mouth hole of the instrument is used, the reed head being slipped out of the way. If within the range of the clarinet, and even below the range of that instrument, the mouthpiece is turned around until it covers the hole and forms the "duo flute," as it is called. This change from one to the other can be made instantly and entirely without the use of the fingers, or even removing them from the keys, the musician using his lips for the purpose. The effect secured is said to be richer than the clarinet, something like the violoncello, and even more mellow than the saxophone. Another important feature is the wonderful diminuendo and crescendo possibilities. The volume of the tone can be swelled or diminished better than in any other reed instrument. The duo flute can be tuned by the performer to be in accord with the pitch of any other instrument. This remarkable instrument is the invention of E. P. Rogers, of New York, the son of the cashier of the Nassau National Bank of that city.

Legal Notes.

THE MEANING OF "UNFAIR COMPETITION."—The case of Allen B. Wrisley Company vs. Iowa Soap Company contains an excellent discussion of what is meant by "unfair competition in trade." (122 Fed. Rep. 796.)

The complainant company manufactured from 1876 until the commencement of the suit a soap branded "Old Country Soap." In 1898 the defendant company began to make soap which it likewise branded "Old Country Soap."

It is a well-known rule of law that geographical terms as well as words in common use to designate a locality, cannot be monopolized as trade-marks. The term "Old Country" is obviously such a term. The Court of Appeals, before whom the case finally came for decision, confirmed the decision of the Circuit Court, and held that the bill could not be sustained for infringement of a technical trade-mark.

The use of geographical or descriptive words to institute or maintain unfair competition may, however, be lawfully enjoined by a court of equity to the same extent as the use of any other terms or symbols, on the ground of unfair competition. Deceit is the basis of suits of this character. The intention to palm off one's goods as those of another, and the use of suitable means to effect that intention, are both essential elements of a good cause of action for unfair competition. Intent to deceive, coupled with actual means calculated to convey a false impression, is necessary. "In searching for this intention, however," said the Court, "and considering the means adopted by a manufacturer in selling his wares, it must be remembered that the intent to institute or maintain unfair competition and the use of reasonable means to effect this purpose, are to be commended and permitted, not restrained. Every manufacturer has the right to sell the goods he makes or owns to the public, to his own customers, or to the customers of his competitors—if he can—at lower prices, and on better terms than those furnished by them, and by these, and by all fair means, to divert their trade to himself, even though his activity and enterprise may destroy the business of his rivals. The only intention the law condemns is the purpose of a manufacturer or vendor to palm off his own goods as those of his competitors, and the only acts from which such an intention may be lawfully inferred are those whose natural and probable effect is to perpetrate such a fraud."

It would follow from this, that the line of demarcation between acts indicative of a lawful and of an unlawful intention runs wide and clear between those which would, and those which would not be likely to induce the common purchaser, when exercising ordinary care, to buy the article of the vendor as the product or property of his competitor. The duty is imposed upon every manufacturer or vendor so to distinguish the article he makes or the goods he sells, from those of his rival, that neither the name nor the dress is likely to deceive the public or mislead the common buyer. He is not required to insure to the negligent or the indifferent a knowledge of the manufacture or the ownership of the articles he presents. His competitor has no better right to a monopoly of trade of the careless and indifferent than he has, and any rule of law which would insure it to either would foster a competition as unfair and unjust as that promoted by the sale of the goods of one manufacturer as that of another.

In the case under discussion by the court, it could not be shown that the defendant intended to palm off his soap as that of the plaintiff, since he had taken care to distinguish his wrappers from those of the complainant.

ARE CITATIONS FROM LAW BOOKS COPYRIGHTABLE?—A very important decision was recently handed down by the Circuit Court of Appeals for the Second Circuit Court in the case of the Edward Thompson Company vs. American Law Book Company (122 Fed. Rep., 922). The complainant is the publisher of two well-known encyclopedias, one of American and English law, the other of pleading and practice. The defendant is compiling a work called "The Cyclopaedia of Law and Procedure," two volumes of which were published when the suit was commenced in 1901. The complainant alleged that these volumes were infringements of its copyright.

The court compared the methods of compilation employed both by complainant and defendant. They certainly show that no very great amount of work is necessary in the production of the bulky volumes which cover a majestic yard or two of the shelves of a law library. The complainant's method was as follows:

When a topic was assigned to a writer, paragraphs cut from the United States Digest, the American Digest, and Jacob's Fisher's Digest bearing upon the

subject in question were placed in his hands. In this way the writer, without any labor on his part, mental or physical, had before him, not only the authorities collected by others, but also the paragraphs written by others, which were used by him in preparing his article. It is alleged by the defendant that all of the digests thus used were copyrighted and that the copyrights were infringed by the complainant's verbatim appropriation of a large number of these paragraphs, and that, in any event, having adopted the same method which it now denounces as piratical, the complainant is not entitled to equitable relief. The defendant's method was similar to that of the complainant except that it obtained from the owners of the copyrighted digests the right to use these works.

The only act of the defendant which is complained of is this: Lists of all the cases bearing upon a given subject, including the cases found in complainant's books, were put in the hands of the editor chosen to develop that subject. The list of complainant's cases contained authorities not found in the digests. The original reports of these cases were examined by the editor, and if the cases were found applicable, they were cited by him in support of his article; if not, they were rejected. There is no pretense that a word of the complainant's text has been copied; in fact the defendant's editors were not permitted to open the complainant's books. The list of cases furnished the editor was not copied in the defendant's work and the only use made of the list was as a guide to the volumes where the cases were reported.

The question, therefore, presented to the court was briefly this: Is a copyrighted law book infringed by a subsequent work on the same subject where the only excuse against the author is that he collected all available citations, including those found in the copyrighted work, and after examining them in text books or reports used those which he considered applicable to support his own original text? The court was decidedly of the opinion that no infringement could be charged. If it be held that an author cannot consult authorities collected by his predecessors, the copyright law, enacted to promote the progress of science and useful arts, will retard their progress.

It is well known that Motley produced his great work after years of patient research among the original archives preserved at The Hague and other European capitals and that he brought to light and translated documents which had lain dormant for centuries. The data thus collected enabled him to tread an almost undiscovered path of history. But can it be contended that a subsequent historian of the Netherlands would be debarred from consulting the same sources of information because he was guided to them by a list made up from Motley's footnotes? It is thought not. The literature of the law as it exists to-day is the result of evolution. Each author has had the benefit of all that preceded him and has thus been able to add something to the common fund intended to lighten the labors of the profession. It would be a serious blow to jurisprudence were the rule enunciated that the author of a law book is precluded from taking a list of authorities cited by a previous writer on the same subject and making an independent examination of them. Individuals might profit but the development of legal science would be hampered by such a rule—a rule not of advancement but of retrogression.

The court saw no escape from the conclusion that if the defendant was the infringer so was the complainant, for their methods in examining the authorities cited in prior copyrighted works were substantially identical. A preliminary injunction was therefore refused.

THE EFFECT OF CHANGE OF FORM AND MATERIAL ON INVENTION.—In the case of Eames vs. the Western Polytechnic Institute it appeared that a simple element in a combination was made in one part instead of two, as in a prior combination. The Circuit Court of Appeals (123 Fed. Rep., 67) decided that this did not alter their substantial identity or avoid anticipation, since it performed the same function and accomplished the same result. In a word, both were mechanically similar. The mere carrying forward or extending the application of a prior device with a change only in degree does not amount to invention.

Similarly in the case of the Drake Castle Pressed Steel Lug Company vs. Brownell & Co. (123 Fed. Rep., 87), it was held that the mere substitution of steel or of wrought iron for cast iron as the material from which a structure is made, does not constitute patentable invention, although such change of material also involves a change in the method of construction and in form, the new device being stamped or swaged from a single sheet of metal where when made it performs the same function in substantially the same way, its only change over the old structure being attributable to the inherent qualities of the materials used.