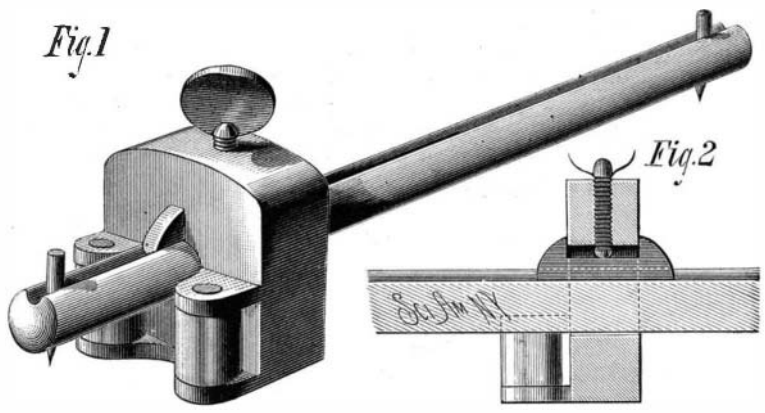
IMPROVED CARPENTER'S GAUGE.

We give herewith an engraving of an improved carpenter's gauge designed for both measuring and marking. It is especially useful in following curved surfaces. Figure 1 is a perspective view, and Figure 2 is a longitudinal section taken through the center of the gauge shaft. The improvement consists in providing the gauge with two bearing-rollers, one on each side of the shaft. These rollers are arranged in relation to the other parts, so that they furnish two bearing points equidistant from the gauge shaft and parallel with the face of the gauge head.

This form of gauge insures the same accuracy in gauging or measuring from curved edges as from straight edges.

Further information may be obtained by addressing the inventor, Mr. Alban Heiran, San Leandro, Alemeda Co., Cal.



HEIRAN'S CARPENTER'S GAUGE.

Trichinosis.

The *Veterinarian* for February has a very comfortless article on trichinosis. It draws attention to the extremely small amount of knowledge we have of the extent of prevalence of trichinæ in home-fed pork, to the certainty of this form of parasite infesting largely American pork, and to the difficulty of discriminating trichinosis in man from enteric fever and acute rheumatism. From these considerations it argues that trichinosis is probably of more common occurrence among human beings in this country than has hitherto been conceived, and suggests the necessity of some steps being taken by the Government or the Legislature to insure some greater degree of safety in this matter than now exists. Our contemporary confesses that it is much easier to advise than to act, but inertness under such circumstances is unjustifiable.

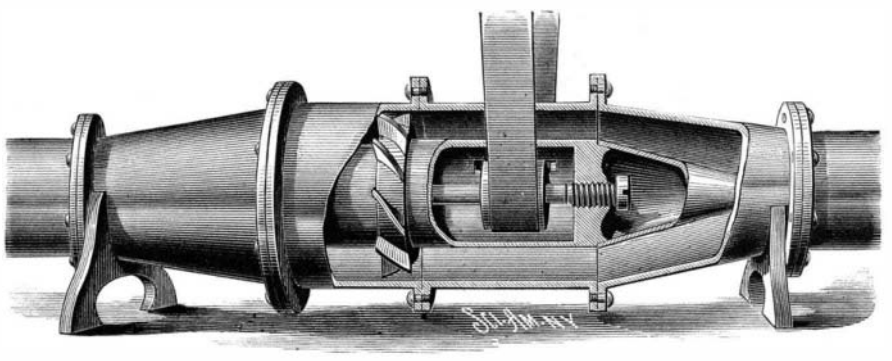
NEW FLUID PROPELLER OR MOTOR.

The annexed engraving represents a device for propelling fluids through tubes, and also for utilizing the motive force of fluids flowing through tubes.

A wheel having diagonal blades is mounted upon a shaft journaled axially in a cylindrical casing. This shaft is supported by a hollow cylinder which covers the sides of the wheel, leaving only the blades exposed.

The inner cylinder has conical ends, and is connected with the outer cylinder by hollow arms through which passes a belt, which drives the wheel when the device is used as a fluid propeller. When the machine is used as a motor the belt receives its power from the pulley on the wheel shaft. The inventor proposes in addition to the uses already named to use the device as a fluid meter.

In actual use the main casing will be connected with the pipes through which the fluid is to be moved or through which water flows if it is to be used as a motor.



FLUID PROPELLER OR MOTOR.

This improvement is the invention of Mr. John B. Vliet, of Dartford, Wis.

NEW LAWN EDGE MOWER.

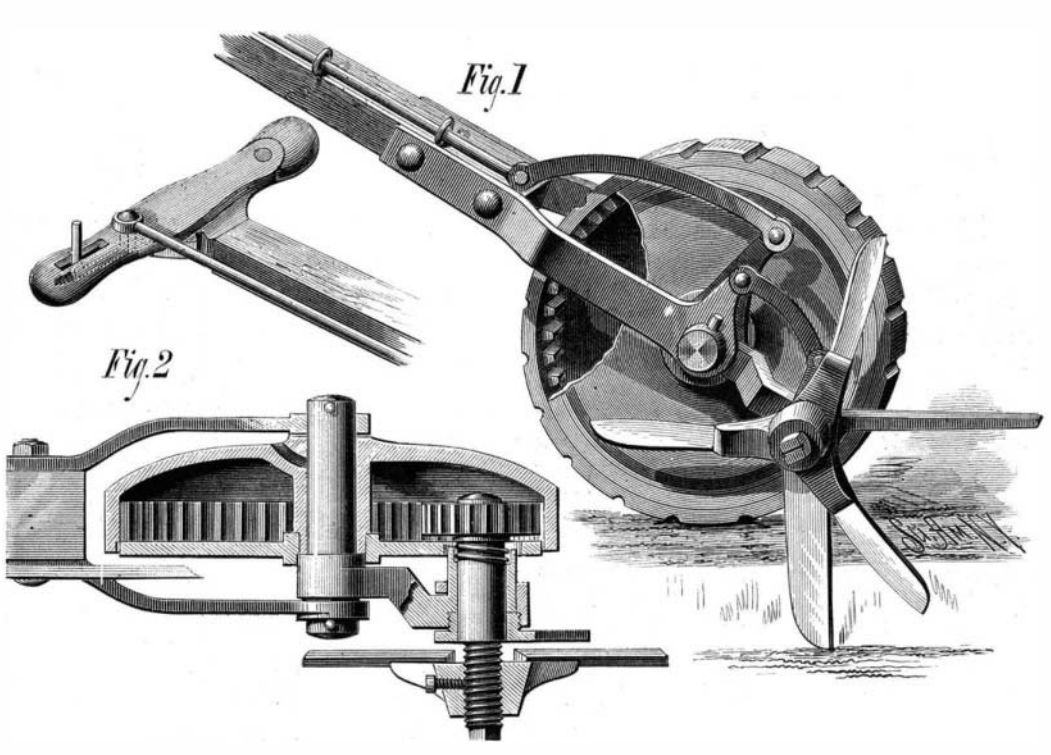
The annexed engraving represents a simple and effective machine for mowing the edges of lawns, borders, etc., a work that is generally done by hand tools with considerable labor if indeed it is done at all.

By reference to the engraving it will be seen that a three-bladed cutter, driven by a single drive wheel, is arranged to revolve in front of a nearly vertical stationary cutter. Both the stationary and rotary cutters are supported by an arm extending forward from the main axle of the machine. The height of the cutting mechanism is adjusted by moving the main axle in one direction or the other by means of a lever at the end of the mower handle, acting through the connecting rods extending down the handle, and jointed to and extending upward from the main axle. The stationary cutter and a horizontal finger or guard are secured to a sleeve on the shaft which carries the three bladed cutter, and they are kept at the proper angle by a link connecting an arm on the knife-supporting sleeve with an arm on the lower end of the handle.

Fig. 1 shows the mower in perspective; Fig. 2 is a section taken through the axes of the drive wheel and the rotary cutter; and Fig. 3 shows the lever at the upper end of the mower handle.

This mower is provided with ratchets to admit of drawing it backward without revolving the knives, and it has all necessary adjustments to compensate for wear.

Further information concerning this useful invention may be obtained from the inventor and patentee, Mr. Timothy Hanley, 1679 Tremont street, Boston Highlands, Mass.



HANLEY'S LAWN EDGE MOWER.

Engines for Farmers.

A writer in the *Prairie Farmer*, who seems to be familiar with the various engines in use for agricultural purposes, thinks that great improvements may be made to render farm engines more available. Of the locomotive self-propelling kind he ranks the Aveling & Porter machines as unequaled in point of efficiency, durability, and economy. The only objectionable feature of these engines, and not only these, but of all that have yet been produced, is the great weight. Inventors and manufacturers will do well to remember that an agricultural and farm locomotive, to prove satisfactory, must have the following qualifications:

1. It must be sold at a moderate price.
2. It must be well made, strong, and durable.
3. It must be so designed that one man can operate it.
4. It must carry its own fuel and water, in quantities sufficient for several hours' work.
5. The weight should not exceed 9,000 pounds.
6. It must have wide wheel-bearing surface.
7. At least 75 per cent of the entire weight should be thrown on the drive wheels so that they will not slip.
8. It must be easily and quickly started, stopped, reversed, or turned around.
9. With an ordinary load, it should travel at a speed of from four to six miles per hour.

An engine having all the above qualifications would prove to be well adapted to the needs of the farmer, and there is probably no better field than this for the inventor and manufacturer to exert their ingenuity.

The Weather and Health in Europe.

It would seem that Ireland is not the only place abroad whose people are in a distressed condition. Intense cold has prevailed over all Europe this winter, beginning early and lasting with continued severity. The effect on the public health has been trying. The mortality reports of all the large cities, according to the *Medical Record*, show an increase in the annual death rate quite striking at times. Rome has reached 38 and 40 per thousand per year. In Naples a malignant fever has been prevalent. At the health resorts on and near the Riviera cold rains, light snows, and damp days have prevailed. At Berne, one hospital received in the week before Christmas 50 patients suffering from severe frost bite. In Paris the applications for entrance to the hospitals in December were 1,000 a week in excess of the accommodations. Silesia has been frightfully ravaged by hunger and typhus, as has also Ireland at one extremity of the continent and Turkey at the other.

Very recently a Rome dispatch to the London *Standard* says: The accounts from Terra di Lavori, Naples, continue to be terrible. The population of seventeen communes especially afflicted numbers 92,382 persons. Of this number, 51,340 had been attacked by fever up to the 15th of December last. This fever means famine. The government aid is not sufficient.

Scientific Farming Practical.

Mr. Buckmaster, before a well attended meeting of farmers, held at Tadley, in England, the other day, to consider a scheme for teaching the science of farming, said that there was no opinion more deeply ingrained in the mind of the English farmer than the belief that there was some antagonism between science and practice. Some even went so far as to say that the two are incompatible. The farmer who drains his land or tries a new manure, or a new machine, or a new crop, calls himself a practical man; he despises all experiment, and laughs at the teaching of scientific men. He is not conscious that when he is thinking over new plans and adopting new methods of cultivation he may be illustrating in his daily work a series of chemical and physiological experiments of extreme complexity and importance. Men of the highest order of intellect, and whose researches were the most original, have been practical men. Practice and theory are but phases of the same form of thought. The practical farmer, if he ever permits his mind to rise above the traditions and empirical rules of his forefathers, and asks, "Could not that have been done in a better and more perfect way; would not this be an improvement?" becomes a theorist, and when he tries to realize these conceptions becomes a practical man. Theory and practice are inseparable in every art, however much men may seek to disunite them. The most practical man is often the most theoretical. Every operation is with him a theory. He recognizes no change; he will admit of no trial or experiment, because that would be an acknowledgment of science. Every science is built up of principles, and these principles carried into work are called practice. There is the science of astronomy and the art of navigation; the science of geometry and the art of land measuring; the science of mechanics and the art of making machinery; the science of chemistry and the art of agriculture. Almost every science is the basis of a cognate art. The most obvious and natural way of arriving at a real knowledge of the art of agriculture would be to know something of those principles on which the art is based, art being nothing more than the application of principles previously acquired. A farmer who is able to unite a perfect mastery of principles with a knowledge of practical details is an educated and scientific farmer. It might reasonably be inferred that the shortest and easiest method of learning any industrial art, and the surest guide to new discoveries in the art, would be a knowledge of those fundamental principles upon which the art was based. No amount of practical skill and experience could ever replace the want of scientific knowledge in farming.