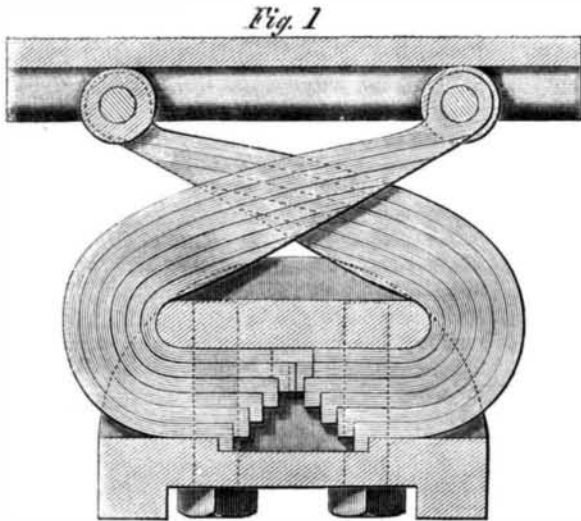


**Improved Car Spring.**

However good the old-fashioned elliptic and semi-elliptic springs may be, still their great expense, and the large amount of space they occupy, have been inducements to inventors to rack their brains to bring out some other description of spring that would combine elasticity with cheapness and compactness. The principle of those at present in use are, first, the solid india-rubber cylinder, which makes a good spring for passenger cars, but is soon destroyed under freight cars. Then comes spiral springs which are used in various ways. The Camden and Amboy railroad use six or eight of them, made of about three eighths round steel, and two and a half inches



**TOSHACH'S CAR SPRING.**

diameter, directly over the journal, and exposed to all-weathers. Some one else puts a large number of small springs, about one and a quarter inches diameter, in a box, appropriately called a nest, but a very hard nest even for a freight car. Another stuffs the Camden and Amboy railroad spring full of wool and puts a series of them in a box. There is another spiral spring, however, made of a respectable looking bar of steel, an inch and a half wide and three-fourths of an inch thick, with a groove up the center of it on each side, and which is coiled into cylinder five and a half and six inches diameter, with an india-rubber cord running the entire length of the spring between the coils, and fitting into the groove referred to, thereby combining the two best known elastic substances. Without, however, referring to any more of these inventions, we will come at once to the one herewith illustrated.

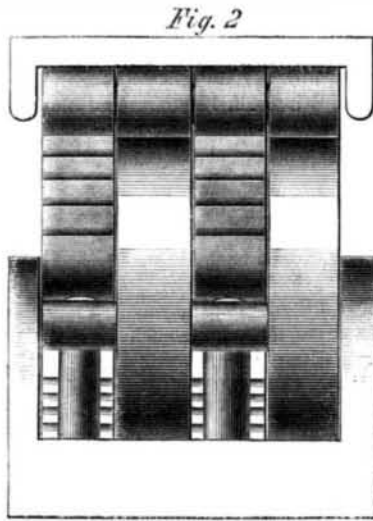
The inventor of this spring claims that he has a good, elastic, compact, and cheap spring, that acts on the same principle as the semi-elliptic. It will be observed by inspecting the engraving that two or more springs are placed alongside of each other, and point in opposite directions, so as to have an equal bearing, and thereby render the spring independent, in itself, ready for being set in any position. The engraving shows the inventor's arrangement for freight cars, but there are other modifications of it included in the patent, such as a circular head over the clamp piece, made of iron or india-rubber or some other material, to assist the spring as the weight comes on it. Different descriptions of covers may also be used, and the number of steel bars may, of course, be increased or decreased in size or number, or both, so as to insure the proper degree of elasticity and strength according to the work to be done. The principle of the spring being so simple and fully represented in the engraving, we hardly think any further description of it is necessary from us, than merely to say that the full size of the spring herewith illustrated is six and a half inches long, five inches wide and six and a half inches high, which, however, need not be a standard size; any further information may be had by addressing the inventor and patentee, William Toshach, 54 William street, New York. Patented August 30, 1864.

We observe that Mr. Wm. H. Van Gieson has become the successor to the Waterbury Machine Company, near the depot, Waterbury Conn. See advertisement. Mr. Van Gieson is an enterprising machinist.

**A Large Filter.**

A new filter of large size has just been invented by Mr. George Hutchinson, and is being applied at the Allegheny Water-works, Pittsburgh, Pa. It is thus described:—

Mr. Hutchinson's improvement consists of an upright cast-iron cylinder, say ten feet high, and of several times the diameter of the supply pipe, of cast iron; it is intended to excavate a foundation for this cylinder, and place it upright, at the outer end of the supply pipe, with which it is to be connected by an opening, mid-height of the cylinder which is to be open below and tight on top. The open end of the cylinder rests on broken stone, some five feet below

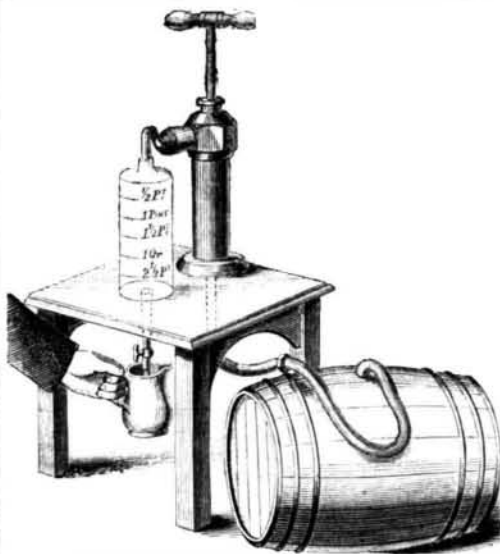


the river bed, and it is also embedded in the same. The river water in percolating through this five feet of broken stone and gravel, to the cylinder, and thence through the supply pipe to the pump wells—will be somewhat clarified in the passage; it will at least be freed from chips, sticks, ice or leaves; it will also, it is claimed, collect a large part of the sand held by the water, and thus prevent this grit from getting into the pump valves, where it is a source of much annoyance.

In case the "tip-rap" surrounding the metallic cylinder should become so charged as to impede the free passage of the water, Mr. Hutchinson has provided for forcing a column of water out upon it, through a wash-out valve, which would readily free the pipe from any lodgment.

**A NEAT THING.**

In England many dealers in volatile oils, etc., use



a patented arrangement for measuring which is neat and economical and might be used in this country with advantage both to consumer and dealer. The accompanying engraving shows it clearly. The idea is to attach a glass vessel to the discharge pipe of a common pump, said vessel being graduated and marked for different qualities of the substance measured. There is a cock and a pipe at the bottom through which the contents of the glass measure can be discharged into any vessel held beneath. The

pump connects by a pipe to the cask in which the oil is. This device saves evaporation, use of different measures, risk of explosion and waste from slop, and insures good measure—the whole amounting to a great deal where large sales are made.

**SELF-REGISTERING COMPASS.**—A patented compass, the invention of Commander Arthur, of the British ship *Excellent*, was tried on board the *Royal Sovereign* during her cruise, and attracted much attention from officers on board. It is for registering a ship's course at sea on lined and prepared paper, working on a cylinder by clockwork, the direction of the ship's head being taken and marked by an indicator pencil every two minutes and a half. It can be placed in any part of the ship where there is no local attraction, and does not require to be placed with the ship's compass.

[This is not a new idea but its action may be more reliable than that of others made heretofore.—Eds.]

DR. HUGO MULLER has found that rosaniline and its colored derivatives are instantaneously decolorized by cyanide of potassium, a series of splendidly crystalized, perfectly colorless bases being produced.

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