

**A NEW TYPE-SETTING MACHINE.**

**JAMES E. MUNSON**, a stenographer, gave an exhibition recently at 28 Centre Street, of an automatic type-setting machine of his invention. Mr. Munson's apparatus is a complete novelty, inasmuch as it runs the type into the galleys fully justified and corrected, something never before accomplished by a type-setting machine. The primary principles of Mr. Munson's invention are speed and the possibility of justifying and correcting the type before it goes into the galleys. In order to accomplish the justifying and correcting, Mr. Munson has perfected a keyboard which, made like that of an ordinary typewriter, perforates a strip of paper of about the width used in the Wheatstone telegraph system. The perforations consist of various combinations of letters based upon an alphabetical principle invented by Mr. Munson. Although only about 175 combinations are needed, 1,013 can be made on the keyboard if necessary. When the paper leaves the perforating machine, the letters are so far apart that a strip 13½ inches long represents one line in a column of printed matter. The operator of the machine goes over this strip with a fine rule, and sees that the divisions of words and spaces come to the end of the line correctly. If they do not, he has a perforating hand tool with which he "spaces out" the characters, so that they justify on the paper strip.

When he has finished justifying the strip, it is run through another machine at a higher rate of speed, and the perforated characters are brought so close together that four inches of paper represents one line in a printed column. This strip is then put into the type-setting machine proper. This is an electric motor, with a sharp-pointed armature connected with magnets representing the characters on the paper. As the armature passes through the perforations in the paper, connection, is made with rods over the magnets, which in their consequent action drop a type into a groove upon a rapidly revolving platform by which it is carried instantly to pick-ups, which, in turn, put it upon a supporting rail. It is then carried automatically to the galley and dumped, fully justified and corrected. In yesterday's exhibition, Mr. Munson used the Thorne type-setter and distributor in connection with his automatic apparatus, which can be applied, he says, to any type-setting machine now in use. It is capable of setting from 8,000 to 13,000 ems per hour. The machine is not yet perfect, but Mr. Munson believes it soon will be in practical operation.

An important feature in connection with the invention is that verbatim reports can be made upon any number of perforated slips at a time, and a slip supplied to each newspaper having one of the machines. Furthermore, the slips can be run through an automatic telegraph machine in Washington, and fac similes forwarded to any point in the country directly to the newspapers, thus saving delay in handling matter by the ordinary Morse telegraph and in composition. Mr. Munson hopes to be able to use compressed air as a motive power, and to have the machine on the market within a few weeks. He has been assisted by Mr. A. Wisching, electrician.—*N. Y. Times*.

TRADE papers that get their information on engineering matters from the daily papers should revise the items so that they will "read sense," as proof readers say, to wit: in speaking of the 'City of New York,' a contemporary says:

"A delay of eighteen hours was occasioned by the breaking of the wings in one of the slide valves."

What is the "wing" of a slide valve?

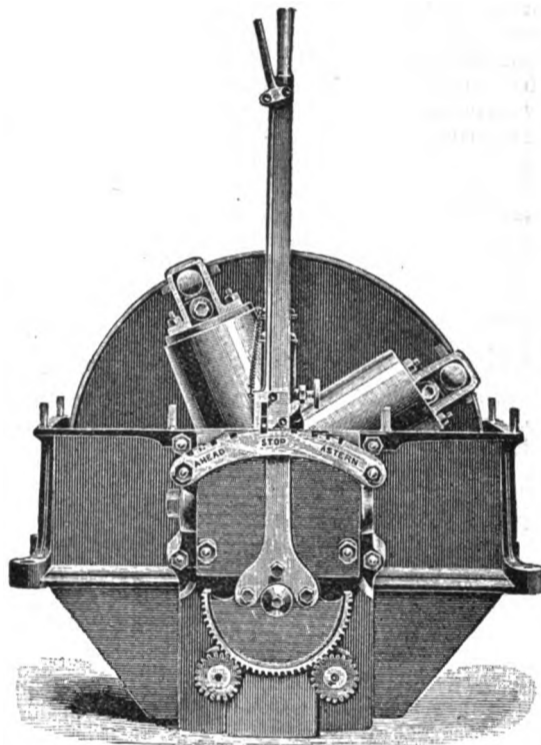
N. B.—There are no slide valves on the 'City of New York's' engines.

WE give the last four issues of the year free to new subscribers, and will forward club forms to all who may desire them.

**REVOLVING CYLINDER ENGINE.**

THIS type of engine has recently been revived in England by Mr. Arthur Rigg, who has given it his name, why we do not know, as one of the first engines we ever saw was of this character, and that is nearly 40 years ago. An illustration of Rigg's engine is here given, taken from *Industries*, and also the appended description of it:

The engine has four single acting cylinders revolving round a common stud. The outer ends of the pistons are attached by pins to the rim of a flywheel disk, which is keyed on the propeller shaft. The centers of the disk and stud do not coincide, but are set apart by a distance equal to half the stroke of the pistons. It will thus readily be seen that as the disk revolves the piston travels alternately out and in, and although there is a relative reciprocating movement between each cylinder and its piston, there is no absolute reciprocating movement, the only movement which can impart slight vibration to the framework being the small oscillation or pendulum action due to the eccentricity between the flywheel disk and the stud on which the cylinders revolve.



The cut-off is regulated by piston valves, which are worked by means of the two spur pinions in connection with a toothed segment and reversing lever. The engine is completely covered in, but the top cover has been removed to show some of the cylinders and the attachment of the piston rods to the flywheel disk. The engine indicates 13 h.p., with 80 lb. boiler pressure, and at ½ cut-off. The cylinders are 6 in. diam. by 3 in. stroke, and the maximum speed is 450 revolutions per minute.

[The very low piston speed, only 225' per minute, obtained by this engine, shows its weakness at once.—*EDS. ENGINEER.*]

It is stated that plans are being prepared in the navy department at Washington for two new monitors, which, if the report is to be trusted, will be marvels of offensive and defensive strength. They are to carry a 110 ton gun, to be heavily armored, and to steam 18 knots an hour, all on a displacement of 3,500 tons.

THE German military authorities have experiment successfully with night attacks by the aid of electric light. The beam of light is reflected from a mirror two hundred yards distant from the lamp, so that the enemy cannot tell where the battery is.

CLAUSIUS (Rudolf Julius Emanuel Clausius), a celebrated German physicist, who was an accepted authority on the mechanical theory of heat and kindred matters, died on the 24th of August, aged 67 years.

A NEW material of special interest to ship and yacht owners and builders has been brought out by Mr. W. Wells, chemical manufacturer, Leith. It is a white pitch or caulking glue. The only material hitherto available for forming white deck seam has been putty, a material possessing only very limited powers of cohesion, and without either elasticity or strength—so essential in any caulking substance—to enable it to retain its hold of the timbers during the expansion and contraction of the deck under weather influences. The fact of such a novel material as white pitch having been invented, which can be melted and run into the seams in the same manner as ordinary pitch, and possessing strength, elasticity, and adhesiveness, is of great interest to ship and yacht builders and owners, by whom such a substance as white pitch has long been regarded as a desideratum. The new material has a high melting point, and is, we are informed, stronger and more tenacious than ordinary pitch.

IN relation to the recent law of this State, which abolishes the halter and substitutes electricity as an agent for capital punishment, W. H. Preece, one of the foremost electricians of London, says:

"It is proposed to replace hanging by the more painless and sudden application of a powerful electrical charge; but those who have assisted at this hasty legislation would have done well to have assured themselves of the practical efficacy of the proposed process. I have seen the difficulty of killing even a rabbit with the most powerful induction coil ever made, and I know those who escaped and recovered from the stroke of a lightning discharge."

"WHEN will managers learn the lesson that other people have rights, and that there is no justice in subjecting spectators to the annoyance of having their ears filled, and their patience tried, by fakirs? The practice is universal, to allow hawkers, peddlers and swindlers to occupy valuable space on the grounds, and in the halls, while those who pay at the gates are the sufferers. Where is the society that will set the example and banish all those things and retain only what is legitimate?"—*Unknown Eastern Paper*.

The "fakir" is a nuisance, but our Eastern contemporary must remember that fairs are run to make money for somebody, and the more fakirs there are the more money there is paid. This is the true inwardness of the fakir.

A WOMAN capable of teaching chemistry well can get a good job at the Women's Medical College of Pennsylvania. The trustees have left the professorship of chemistry vacant, and appointed a lecturer for the present, hoping to find a woman for the place.—*N. Y. Sun*.

Well, they won't find any. Chemistry smells too badly and explodes too much to be popular with ladies.

QUINN & Co., boiler makers, of Portland, Me., send blotters to their friends; on the back of them are sundry trade apothegms which are both sarcastic and sound. For instance:

"Buy a good boiler, but don't hire a cheap man to spoil it and then blame the boiler. When a man is blown up by a boiler explosion he should keep going, as he is of no use when he gets back."

THE MAGNESIA SECTIONAL COVERING is growing in favor with marine engineers. Messrs. Robert A. Keasby & Co., of 56 Warren St., N. Y. are putting it on the tugs 'Ariosa' and 'Nonpareil,' and steamers 'William Lewis' and 'Anson E. Burlingame,' and are negotiating for several others. The Magnesia covering gives great satisfaction.

ANNO DOMINI 1888 is more than half worn out now, and we shall soon trade it off for 1889.