New Inventions.

Improvement in Tailors' Measures.

Mr. C. S. Gates, of Morrisville, Vermont, has invented an improvement in measures for taking the dimensions and proper form of the human frame, for the purpose of cutting garments to fit the body in the most proper manner. He employs flexible moulds, having perforations and numbers in them, which, being laid upon or applied to the human body, indicate the exact points for cutting the garment to the proper shape to suit the person measured. The benefits of a flexible measurer to delineate the shape, are apparent, knowing how variously modified human frames are, and how difficult it is to fit some persons. Measures have been taken to secure a patent.

The Manufacture of Barrels by Machinery.

We perceive in great numbers of our home exchanges an article quoted from the Glasgow (Scotland) Daily Mail, describing an invention recently introduced into that city for the manufacturing of barrels by machinery. It would appear that many in our country are not aware of the existence of machinery here for manufacturing barrels from the stave—completing the barrel by continuous operation. The readers of the Scientific American, however, know this to be true. Barrel machinery is now of a somewhat old date in America. In this country, celebrated for an abundance of the finest timber, we have also the best machines for working in wood. In 1827, we think, the first patent for dressing staves by machinery was taken out by a Mr. Wm. Hale, and since that time quite a number of other machines have been invented. We have published engravings of three of them, and there are one or two in existence which we have not yet had an opportunity of illustrating.

Ships' Cable Nippers.

Mr. Robert Dixon, of Brooklyn, N. Y., has invented a new and useful contrivance for attaching the cables of ships to the messengers employed in hauling them up, for which he has taken measures to secure a patent. The nippers consist of metal jaws hinged together at one end, whereby they are easily closed and released, and in the inside the jaws have recesses, which, when they (the jaws) are closed, form openings in which the cable and messenger are held secure from dragging endwise, by knots, if the cable be of rope, or by the links of the chain. These nippers are far superior to the rope kind which are in common use.

Improved Mortising Machine.

Mr. Avery Kinney, of Homer, Cortland Co., N. Y., has invented and taken measures for securing a patent for some very valuable improvements in mortising machines. He employs two tables or bed pieces, one upon the other, the upper one, across which the boring frame travels, slides in the direction of its length over the second, it being operated by rack and pinion, and so connected and operating together as to admit of the auger being moved or set at different points on the timber without loosening the machine and re-fixing it, in the manner required by other mortising machines.

Improved Fence.

Mr. Robert McConnell, of the city of Pittsburg, Pa., has invented and taken measures to secure a patent for improvements in picket fences, whereby he unites the fence by tie rods passing through the pickets and intermediate pieces, in combination with loose swivels, so that the different sections of a picket fence can be put together in a very cheap and expeditious manner.

Endless Printing Press.

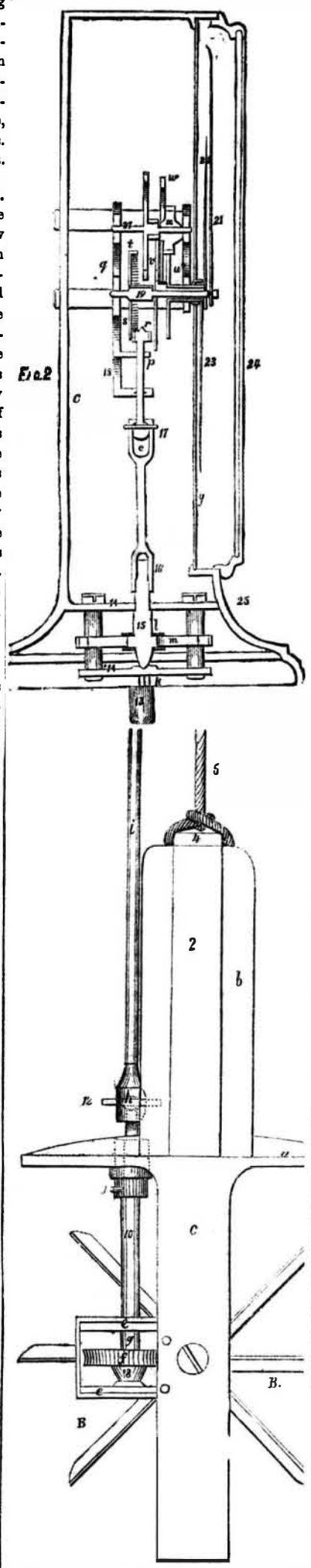
Mr. J. O. Osborne, of Akron, O., writes us he has projected a printing press, by which he thinks he shall be able to print a Bible in one second of time. The idea embraced is, to have the forms stereotyped and curved for cylinders, and to have the cylinders so duplicated as to print both sides of the paper or book at one operation.

Aquatic Velocimeter---Ships' Way Measurer.

[Continued from the First Page.]

9, on its top, taking a socket in the lower end of a short vertical arbor, 10, as shown by dotted lines in figures 1 and 2; the arbor goes through the top of the box, *e*, and through the plate, *a*, of the frame, beneath which a set collar, *g*, and pin, 11, keep the shaft, 10, from rising off the wheel, *f*: above the plate, *a*, the arbor, 10, has a pin, 12, that takes a two part slot in a socket, *h*, at the lower end of a

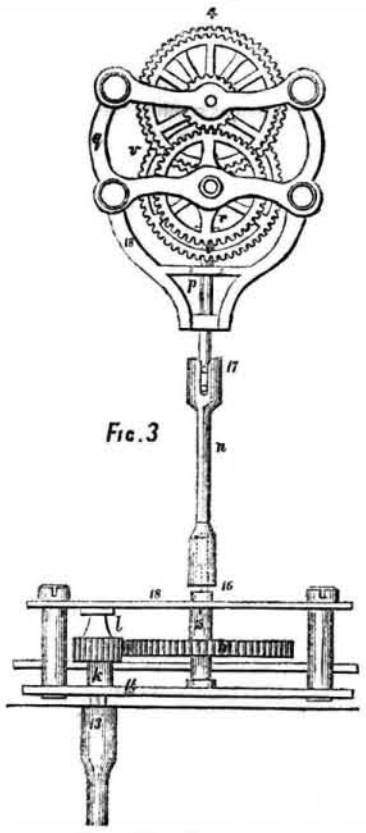
Fig. 2



vertical rod, *i*, this is prolonged up, through the tube, A, and finishes at top with a square key socket, 13, which receives the square end of a short arbor, *k*, set in a two part frame, 14 14; this is fixed in the lower part of the clock-work case.

The arbor, *k*, carries the leading pinion, *l*, of twelve teeth, this gears into a leading wheel, *m*, of sixty-six teeth, set on a spindle, 15, which goes through the upper frame plate, 14, and finishes with a short square, having a round end above it, these parts receive the socket piece, 16, of the coupling rod, *n*, fitted to the top of the spindle, 15, so that the coupling rod, *n*, may be first lifted and turned to set the register hands above, and yet not be entirely detached off the spindle, 15. The top of the rod, *n*, is formed as a ball socket, *o*, with a pin, 17, to attach or detach the lower end of the first clock-work arbor, *p*; above this the back plate, *q*, of the clock frame, is lengthened down with two bracket pieces, 18, through which the rod, *p*, passes, receiving on its top the bevelled runner pinion, *r*, of ten teeth, fitted to gear into the bevelled face wheel, *s*; this has sixty teeth, and is set on an arbor, *x*, which backs on the plate, *q*, and goes forward, carrying the next pinion, and the canon pinions and tubes between that and the face, and outside the face carries the hand, 21; this hand counts rods up to one mile; next the wheel, *s*, a pinion, 19, of eight teeth is made with the arbor, *x*, and gears into the wheel, *t*, of eighty teeth fixed on an arbor, 27, above, and carrying on the same arbor a pinion of eight teeth, that gears into a wheel, *v*, of eighty teeth, on the canon arbor, this arbor goes through the clock face, finishing just

Fig. 3



within the point of the arbor, *x*, and carries the hand, 22, which counts miles up to one hundred in number; the canon arbor is fitted with a pinion of sixteen teeth that gears into a wheel, *w*, of eighty teeth, this wheel rotates freely on the arbor, 27, with a hub that is formed as a pinion, *x*, of thirty teeth which gears into a wheel, *u*, of sixty teeth, this is set on the second canon arbor which goes through the face, just short of the first canon arbor, and carries the hand, 23, which counts tens of miles, up to one thousand miles; *y* is the dial plate, and three sets of divisions; *z* is the basil, carrying 24, the glass over the dial, and at 25 an opening and door is shown, by which the fingers can be introduced to reach the socket, 16, to set the hands in unity at the time the skip is taking a departure, and thereby avoid removing the glass and basil, and yet set the hands in unity, without touching them. The parts are shown as in a vertical metal box, placed on a pedestal, but the whole may be placed on or in a box, or frame of wood or metal as taste or convenience may dictate.

The operation and timing of the parts and the proportions of the gearing having been stated, it will be seen that forty turns of the worm, 7, will give the wheel, *f*, one turn, in one hundred and sixty feet, or thirty-three turns in one mile; the pinion, *l*, of 12 teeth going at the same speed, will give the leading wheel, of sixty-six teeth, six turns in a mile, and this giving the runner pinion, *r*, of ten teeth, the like number of turns, will give the wheel, *s*, of sixty teeth, with the arbor, *x*, and hand, 21, one entire rotation, in one mile; the pinion, 19, of eight teeth, going at the same rotation, gives the wheel, *t*, one-tenth of a rotation, and the pinion of eight teeth gearing to the wheel, *v*, of eighty teeth, gives that and the canon arbor and hand, 22, the one-hundredth part of a rotation; the pinion of sixteen teeth, gearing to the wheel, *w*, of eighty teeth, gives that the one-five-hundredth of a rotation, and this, with its hub pinion, *x*, of thirty teeth, gives the wheel, *u*, and second canon arbor, with the hand 23, the one-thousandth of a rotation for each turn of the mile wheel.

The divisions for one mile being marked as rods, give also furlongs and quarters, so that the distance run through the water can be ascertained to a fraction of a mile, if so required, by the dots between the divisions.

It will be understood that the distance run in a given time will be ascertained by comparing the hands on the dial with a clock or watch, thus practically giving the rate of the ship, in miles per hour, by mere inspection.

It is well known that many attempts have been made to apply machinery for the purpose of ascertaining the rate of speed at which a ship has moved through the water in a given time; and it is believed the best of which is known as 'Massey's Log:' this, so far as known, is a box containing machinery, which is towed through the water by the ship, and is liable to uncertainties, because a fast ship, in a short sea, will frequently jerk it out of the water, when it is in operation; the motion of the water, and of the ship, is always changing the angle of the tow line; and on hauling on board it is also liable to injury, by striking the vessel when scudding or pitching heavily; another log has been made, fitted to be placed under the counter of the ship, where it is in the eddy water the ship draws after her, and becomes uncertain in its rotation, besides being open to all the former objections, when hauling into or out of place for use; and others have been contrived in various ways; but the inventor does not know of any mechanical apparatus for ships' use that is so placed beneath the bottom of the ship as to be clear of all ordinary accidental interference, by fitting the vanes or paddle-blades, B, into a frame, constructed with grooves to slide on ribs in a tube or pipe, the bottom of which supports the frame by a bead or flanch, surrounding a disc, *a*, carrying the frame, *b*, that cuts off or prevents the effects of any vertical motion of either the ship or the water on the paddle-blades, B, to destroy the accuracy of the instrument, and fitted to act on the line of motion, so that the motive parts of the Velocimeter can be withdrawn, for any needful purpose, and again replaced for use; nor does he know of any similar instrument for these purposes, that is made to operate as a standing register of the whole distance a ship has actually run, either with or without a direct reference to time, during any portion of the distance, by the operations of the vanes or blades, B, through a rod in the tube, A, upon a registering set of clock-work wheels and hands, which the present description and engravings show as registering fractions up to one mile, and from one mile to one hundred, and thence to one thousand; so that by increasing the number of wheels and pinions, the registry may be extended to any desired distance; and the inventor does not intend to limit himself to the stated extent of the numerical registry, or to the sizes and proportions of the parts, but to vary these as may be needed; nor does he mean to be limited to the mode shown, of fitting the moving parts, but to add any mechanical means for lessening friction, and wear, whenever and wherever practical use may evince the propriety of so doing.

It will of course be understood that the motion of the ship is estimated as when moving in still water, and that any known currents are to be added, when in favor of the ship, and deducted when against her.

We hope this invention will receive the strictest attention from nautical men.