IMPROVED RAG-PICKER.

As, in the great laboratory of nature, the most disagreeable and worthless substances are transformed into beautiful flowers, delicious fruits, or waving fields of grain, so, in the operations of the paper-maker, the rags that hang from the limbs of the beggar, or are raked from the mud of the gutter, are converted into smooth and beautiful sheets, and endowed with the marvelous power of bearing the impalpable thoughts of the present generation down the current of time to generations yet unborn. Viewed in this true light, the working of rags loses the contemptible character with which a conventional prejudice has regarded it, and we behold a portion of that thaumaturgic power which excites our perpetual wonder in the action of the mysterious forces of nature. This consideration may induce us to examine improvements in a rag-picker with at least as much interest as we feel in examining those in any other machine.

The accompanying engravings illustrate an improvement in that class of rag-pickers in which the operation is conducted in the inside of a drum, by means of a revolving cutter in combination with stationary knives. The trunnions, a, of the drum, B, are made hollow, in order to permit the passage through the drum of the shaft, c, which carries the revolving cutters, and of the bar, d, which supports the stationary knives. The knives are four in number, as shown at e e e e, Fig. 2, and the revolving cutters are wound spirally around their shaft in the usual manner. This shaft is furnished with drums and belts at both ends, so that the wear in its journals may not change its parallelism with the knives. The bar, d, slides at both ends along the inclined planes, f, and is adjusted by this motion in proper proximity to the cutters by means of the set screws, g; a spring being interposed between the screw and the bar in order to allow the knives to yield in case of encountering any hard substance, as a nail, and thus avoid breaking the machine. This adjustment is one of the novel features of the invention, and the other consists in the employment of the conductor, h, Fig. 2, for regulating the supply of rags to the cutters. This is attached to the bar, d, in the inside of the drum, as shown. The rags are introduced through the door, J, and while the machine is in operation the hollow trunnion is closed by the plate, K, which is made to fit into it. The motions are effected by ordinary mechanical devices.

The patent for this invention was obtained, through the Scientific American Patent Agency, Feb. 14, 1860, and persons desiring further information in relation to it will please address the inventor, Joseph Storm, at Woonsocket, R. I.

STORM'S IMPROVED RAG-PICKER.

Fig.2

OUR MEASURES.

We hope Congress will not forget to devote attention to the reforming of our laws relating to weights and measures. So far as it relates to lineal measures, we hope our mathematical instrument-makers will take the *measure* into their own hands in a scientific manner, and adopt the "centessimal rule," either with or without any Congressional action.

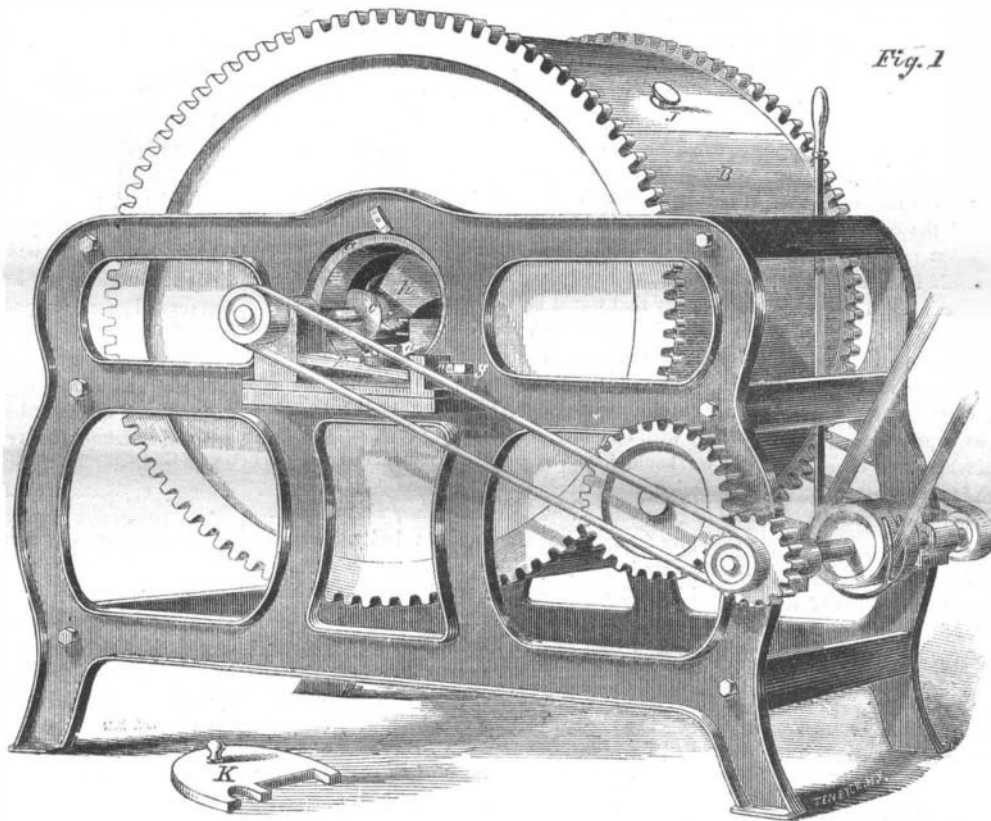A carpenter's rule is divided into 96 parts for a foot. The decimal division would make it contain 100. At present 144 square inches make a square foot; decimally, 100 square inches would make a square foot. At present, 1,728 inches make a cubic foot; decimally, 1,000 inches would better answer the same purpose. At present there is no easily ascertained value between a square foot and a square inch; but decimally, if a square foot costs one dollar, a square inch costs one cent. If a cubic foot costs one dollar, a cubic inch costs one mill. If the foot be divided into 10 inches instead of 12, the computation of inches becomes a mere child's play. For instance: Here is a box measuring 2 feet 5 inches long, 3 feet 7 inches high, and 4 feet 9 inches wide; what are the solid contents? Now, let any one multiply together these three dimensions, in the old way, covering the slate with figures, noting the difficulty and length of the operation, and then compare it with the simple problem, which would stand, reckoning 10 inches to the foot, as follows: $2.5 \times 3.7 \times 4.9 = 45.325$ feet. The multiplication of feet and inches would become as simple as the multiplication of dollars and cents. Such measures have been conveniently used by surveyors, and they have been lately adopted in some English machine shops.

DISCOVERY OF A NEW PLANET BETWEEN MERCURY AND THE SUN.—As we have referred to a photographic method by means of which the existence of a planet between Mercury and the Sun might be ascertained, our readers may perhaps be glad to learn that the discovery that such planet does exist has been made by Dr. l'Escarbeaut, of Orgeres, a small town in France. The existence of this planet was assumed by M. Leverrier, the distinguished chief of the Imperial Observatory at Paris, from the perturbations in the movement of Mercury, and his calculations have been verified by the observations of the amateur astronomer whose name we have given above. From the flood of light in which the planet revolves, it is difficult to ascertain anything very precise with respect to its dimensions, and so forth; but there is little doubt—the fact of its existence being established—that our able astronomers at the Royal Observatory, and elsewhere, will, before long, gives us some better account of it than which we at present possess. —*Photographic News.*
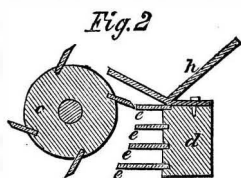
NEW BUILDING STONE.—A good sand or freestone, easily worked, of a favorable color, and possessing strength and durability, is very desirable for building purposes in our cities. There are very few sandstones that are suitable for the construction of houses; Connecticut, New Jersey, and New Brunswick furnish all that are used in New York. None of these equal granite or Westchester marble in strength and durability, but they are much cheaper. Last week we examined a very beautiful specimen of building sandstone, obtained in the township of Esqueesing, C. W. It exists in a mountain in four-feet layers, and the formation is at least 250 feet deep, and can be easily quarried. It is of a very soft drab color, is said to be very durable, and can be laid down in this city for 35 cents per cubic foot. The quarry is not far from the Grand Trunk Railway, and is, by land and water, distant about 489 miles from New York.

CUTTING GLASS.—Alex. Taylor writes as follows to the *Photographic News:*—"In treating of glass, I may give you another way of cutting bottles, shades or any glass vessel the neat thing you wish, and that is to get a rod of iron heated to redness, and having filled your vessel the exact hight you wish it to be cut, with oil of any kind, you proceed to very gradually dip the red-hot iron into the oil, which, heating all along the surface, suddenly the glass chips and cracks right round, when you can lift off the upper portion clean by the surface of the oil. This never fails, and many a couple of serviceable bell glasses have I made in this way from a six-pound confection bottle. If the above is suitable, it is at the service of your readers, and forms only an installment of hints which one photographer could give to another."