How Paper Collars are Made.

We find the following in an exchange:—"At the end of the first room are piles of pure white paper, awaiting their turn to be guillotined in a machine furnished with twenty-two shear blades, which cut the paper into the requisite strips for the collar, on precisely the same principle as a gigantic pair of scissors, thus leaving no rough edge. The product of two paper mills is consumed in this factory, and at the rate of a tun to a tun and a half per day; the average production being about one hundred thousand collars per day, which find a ready sale, despite the numerous imitations with which the market is flooded. From the hands of the attendant who turns out the pure, even strips of paper, they pass into the hands of another fair executioner, who brings the incipient collar nearer its birth by passing it through another pair of knives, by which it acquires shape in an instant. Still another machine marches relentlessly up and down, and as the collar leaves its iron embrace, the three button holes are visible, large, clean cut, firm holding and easily handled.

"The collar is now placed between two dies or clamps, passed under a quick, heavy pressure, and emerges again stamped with that close imitation of stitching which renders it so perfect an imitation of its linen brother that the difference can hardly be distinguished; it is stamped also with the size and corporate mark. Next comes the crimping machine, which draws the curved line on which the shape of the collar turns, and which by allowing space for the cravat insures a smooth fit. They then pass through the nimble hands of a damsel, who with deft fingers flying with lightning-like rapidity, turns the collar over as no machine has yet been able to do; from these hands it passes to the molding machine, where it is bent round into perfect shape and finished as a perfect collar.

"This process is an important one, requires skill in the operator, and strength in the paper, which must be of the best to resist the immense strain required to mold the collar into perfect shape.

"The collar is now, as it were, born shapely, trim and elegant, and ready to adorn the neck of the most fastidious, having passed through seven distinct processes in its manufacture. It is once more taken in hand by women and packed into boxes by the hundred, or in the well-known little round boxes of ten each, which are so convenient to toss into a valise when off for a week in the country or elsewhere. For the item of boxes the company expend over $60,-000 per annum. The first machine turned out the collar entire, performing the whole work at once, but slowly and imperfectly; but the genius of the inventor, quickened by the rapidly increasing demand for the article, added improvement after improvement, by one machine after another, until the manufactory is now capable of turning out five millions of collars per month.

"The American Molded Collar Company employ in this manufactory seventy neatly-dressed, intelligent looking American women, most of whom are young. These women earn a dollar per day, and their work is clean, healthy and not very laborious. Mr. Gray, who first commenced to manufacture in the spring of 1863, has now eight patents on collars and machine, having previously secured them in Europe; three of the directors of the Company went there this summer with skilled mechanics and American machinery, to take measures to establish the manufacture in England, France and Belgium, where they will probably soon attain that popularity which the American molded collar has achieved in this country."

Value of City Property.—The lot on the corner of Broadway and Ann street, in this city, made vacant by the burning of Barnum's Museum, was bought by Mr. James Gordon Bennett, who proposes to erect thereon a fire-proof building for the *Herald*. The lot is 55 feet by 100 feet, and $450,000 was paid for it, and $200,000 besides to Mr. Barnum for his unexpired lease of it. Non-residents can thus get an idea of the value of some city lots.

The *Great Britain*, a broad-gage English locomotive, with 18-inch cylinders and 24 inch stroke, has worked up to 1000-horse power. So says the London *Engineer*.

WING'S MILLSTONE DRESS.

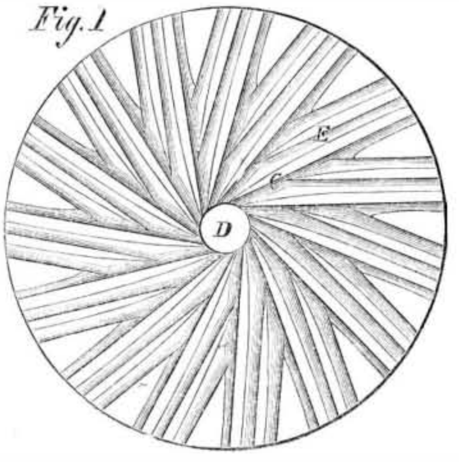
These engravings represent a new method for dressing millstones, for which it is claimed that unusually good results are obtained. The appended description is furnished by the inventor;—

"Fig. 1 is a plain view of a runner stone inverted, having my improved dress.

"Fig. 2 is a vertical section of the same, showing the form of the furrows.

"Fig. 3 is a vertical section of a portion of a pair of millstones, dressed in the usual manner, showing the feed opening, or bosom, *a*.

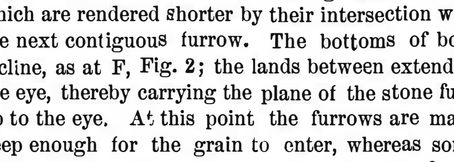
Fig. 1



"My improvement has a two-fold object, viz.: to effect the grinding as near to the eye as possible, thereby saving the power required for driving the stone, and by so doing to carry off the flour in the furrows and prevent its keeping between the lands of the stone as it approaches the periphery, whereby overgrinding is produced from greater friction, and retention of the flour between the parts of the stone that revolve the most rapidly.

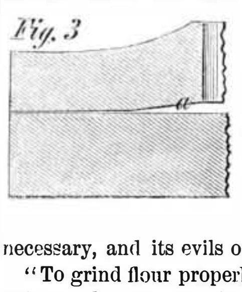
"In the ordinary mode of dressing millstones for grinding wheat flour the lands run of equal width, and form parallel lines from the periphery to the eye, leaving the furrows of equal width and parallel with the lands. I take from the lands, or surface of the stone, and widen the furrows as they approach the center.

Fig. 2



"The furrows, in my method, consists of two series —the leading furrows, C, which diverge tangentially from the eye, D, outward to the periphery, diminishing slightly in width—and parallel with each of these are two or more auxiliary furrows, E, which fill the angular space between the leading furrows, and which are rendered shorter by their intersection with the next contiguous furrow. The bottoms of both incline, as at F, Fig. 2; the lands between extend to the eye, thereby carrying the plane of the stone fully up to the eye. At this point the furrows are made deep enough for the grain to enter, whereas some millers reduce this surface around the eye for a short distance below the common plane of the lands. This opening or hollow is called the bosom, and its object is to facilitate the entrance of the grain between the stones. By my plan of dressing, however, this is rendered wholly unnecessary, and its evils obviated.

Fig. 3



"To grind flour properly the kernels should not be pulverized between the lands, but between the sloping and inclined sides of the furrows, which prevents the flour from being spoiled while grinding, and this is accomplished by the method of dress which is here shown, the object being to make the lands act as guides at the eye, to direct the grain into the furrows.

"A further advantage is that it can be used in any stone where there are straight furrows without dressing any more of the lands away than my furrows require. When introduced it does not require one-half the labor to keep the stone in order that the common dress does, and it is also an improvement in grinding damp grain of any kind."

The inventor will sell rights of mills, towns, counties or States on reasonable terms. Patented on March 21, 1865, through the Scientific American Patent Agency. For further information address Abram Wing, Mayville, N. Y.

Alloys.

Every thoughtful metal worker, who has his hands too full of his daily employment to spend much time in experimenting on the properties of the metals he uses, must have often wondered how it came to pass that with all our boasted knowledge of chemical and metallurgical subjects, we have as yet only succeeded in inventing some half-dozen useful alloys. Brass, pewter, gun-metal, German silver, and type metal are really all the alloys that we can name as entering into the manufacture of the more common articles of trade in this country. The causes of this apathy in experimenting on the properties of mixed metals are manifold. The practical metal-worker of the present day is generally ignorant of the chemistry of the metals he uses; and even if he were well informed, he would be too busy fighting the great battle of competition to set himself the extra task of experimenting upon alloys. But metal workers will turn round very naturally and ask how it is that practical chemists, whose business is to make experiments, do not investigate the capabilities of metallic mixtures more frequently than is at present the case. We fear very much that the only answer to be given to this is that scientific chemists of all countries have, almost without exception, been bitten with a mania for nearly exclusively pursuing their researches and expending their talents upon organic compounds.

This department of scientific chemistry is so vast and so fruitful in results that it is quite a rarity to see an article in a scientific journal upon a metal or metallic compounds. Even those chemists who have not wholly given up the study of inorganic compounds seem to apply themselves to analytical observations or to the investigation of the rarer metals. As an example of the want of knowledge of the capabilities of alloys, we may instance the discovery lately made by M. Pelouze, of the French mint, that the best metal with which to alloy silver is zinc, and not copper, as we have always believed. Now, considering that silver has been known from the remotest ages, and zinc, at any rate, since the birth of modern chemistry, it seems singularly strange that no one ever thought of trying the effects of these two metals on one another until now. To take the case of iron, a merely cursory examination of the second volume of Percy's "Metallurgy" will show that some of the very simplest questions relating to this most common and important metal remain as yet unanswered. Such an apparently vital matter as the formation of steel is a bone of contention at nearly every meeting of the French Academy of Sciences, one party persisting in declaring that no steel can be made without the intervention of both nitrogen and carbon, while the other side as manfully contend that nitrogen has nothing to do with cementation, carbon being the only element concerned in the process. This example shows that not only does the action of one metal upon another, in a state of combination, require patient study, but also the effect of the addition of varying proportions of the metalloids, such as carbon, phosphorus, silicon, sulphur, etc., to different metals, remains still to be discovered.—*Chemist and Druggist.*

Packing Pistons.

Before a vertical engine piston is packed it should be wedged into the exact center of the cylinder by driving blocks on four sides, and verifying the work by exact measurements with a stick that must both "touch and go" on the rod. The packing will then hold the piston true, and the engine will work far better than where the piston is packed by a guess.

It is said that in and around London, at the present time, no less than about 150 miles of railway are in course of construction, involving an outlay of thirty millions sterling at the ordinary rate of calculation.