

## IMPROVED METHOD OF HANGING SIDE ARMS.

The usual method of slinging sergeant's hangers and the dress swords of Knights Templars is objectionable because of the rigidity with which the sword is confined to the body. Every commissioned officer appreciates the advantages of the long slings by which his sword is attached to the belt and which allows perfect freedom of body. The design seen in the engraving secures this freedom to those who carry the straight sword. Instead of locking the sword in the belt itself, or a short frog attached to it, the sword plate—in the engraving a Maltese cross—is suspended from the belt by a looped chain, or a strap which insures perfect freedom to the motion of the body and adds much to the elegance of the equipment. In the engraving the hook on the scabbard is passed through the hole in the cross, which retains the sword secu-



rely in place. The design is very handsome and the plan convenient.

Patents for this improvement were granted through the Scientific American Patent Agency, Aug. 13, 1867. Rights and samples can be obtained by addressing the Virgil Price Manufacturing Company, 144 Green street, New York city.

## PLAN FOR CITY STREETS.

A correspondent from Pittsburgh, Pa., A. R. H., proposes for the relief of crowded streets a series of iron wheel-ways for ordinary vehicles. He proposes rails of about one foot wide, the edges to be somewhat raised to retain the wheels on the rail, yet the lips being so formed that less obstruction would be offered to the turning of the wheels off the track than is presented by crossing the tracks now in use for street cars. Where the streets are wide enough the cars might run next the walk on either side, and ordinary vehicles occupy central tracks. He proposes, also the abolition of curbs, and that the walk and roadway be on the same level, the gutters being a sufficient depth, provided with frequent openings into the sewers, and be covered with movable gratings, so that passengers by the cars or ordinary vehicles need not wade through the mud of the streets in getting on or off.

We think the essential and prominent features of our correspondent's plan were proposed some time ago. This, however, does not detract from their value. We, nevertheless, cannot understand the value of his proposed improvement, especially in streets devoted mainly to business. If vehicles, like pedestrians going one way, held to one side of the street, or one track, and their progress was continual, it might do, but when the loading and unloading of teams compels the vehicle to block the way during the process, the continuous track would suffer many interruptions. Also, if the walk and roadway should be on the same level we cannot see how either those who rode or those who walked could be preserved from the mud and slush of the street.

One of the principal annoyances of passengers through the business streets of a city or town is occasioned by the work of loading and unloading goods. The team occupies a portion of the street and the skids make a bridge across the walk. The only remedy we know is a back or private way to every block or line of buildings as is the case in the modern and newer portions of Boston, Mass. The rear of the buildings has a roadway through which teams carrying coal, wood, milk, produce, merchandise, and goods of all kinds can drive, and unload or deposit in the rear of the building, while the street which fronts the block is kept free for carriages and pedestrians. The planning and arrangements of our city dwellings and business buildings is most disgraceful in this particular.

## The Largest Circular Saw.

The largest circular saw on exhibition at Paris is from the United States, exhibited by the American Saw Company, Trenton, N. J. The plate was rolled in the celebrated works of Messrs. Jessop & Sons, Sheffield, England, and they certify that it was the largest circular plate ever rolled. The plate proper was seven feet and two inches in diameter and weighed 590 pounds, and was No. 2 gage in thickness. With Emerson's patent teeth inserted it was seven feet four inches in diameter. The furnace and tank being of sufficient size to heat a saw eight feet in diameter, there was no trouble in hardening and tempering the saw as perfectly as they could one as many inches in diameter. All told, thirty-five days, seven and a half hours were expended in smithing and straightening the saw. It was ground to 5 gage on the rim and 3 in the center, is without a blemish, and is true and in perfect condition to run. Allowing six inches for collars, it

will cut a board 41 inches wide. It contains 48 teeth, the saw having been ground and polished with shanks of teeth inserted. These shanks were removed and the new teeth inserted and riveted without making the slightest perceptible difference in the strain of the saw.

On one side there is etched the American Eagle, holding in his beak the motto, *E Pluribus Unum*. Then follow the words, "Manufactured by the American Saw Company, New York, U. S. A. J. E. Emerson's Patent, Sept. 12, 1865, and Aug. 26, 1866. 88 inches in diameter—No. 581.

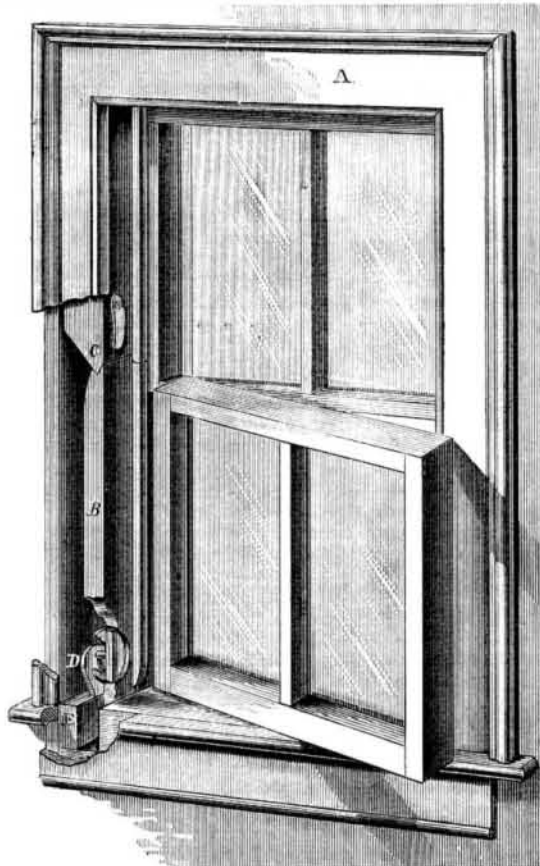
The manufacturers say this saw was so much larger than any that they ever manufactured before, that to get the stranger into the factory, they were in somewhat the same predicament as the man who won the elephant at a raffle, and had to take down and cut away parts of the building. In each room where the monster saw had to be introduced for the purpose of being properly prepared, a way had to be opened with ax and saw.

The mandrel hole is 2½ inches in diameter, and the pin holes ¼ of an inch in diameter and 4 inches apart from center to center. The saw is for a right hand mill. 375 or 400 revolutions per minute will be a proper speed for it to run; it is capable of cutting 6 inches to each revolution, and with fifty horse-power it is capable of sawing 50,000 feet of inch lumber in ten hours.

## CROLEY'S IMPROVEMENT IN WINDOW FRAMES.

The object of the device which the engraving illustrates is to provide a ready means for removing the sashes of windows and adjusting the weights without disturbing the moldings, cases, or stops, and defacing the frame. The object is perfectly accomplished in an exceedingly simple manner, with no injury whatever to the window and no detraction from its elegance. The improvement can be made in any window frame already in place as well as in those in process of manufacture.

By reference to the engraving it will be seen that a portion of one of the slides is removable. Let A, represent a window frame, B is a portion of the slide which fits the permanent part at C, by a V-shaped joint, and is held in that fixed position by a cam-latch, D, on the lower end, which engages with the ledge, E. This latch turns on a stud passing through a circular plate of metal let into the slide so that the bar by which the catch is turned is flush with the outer surface of the slide.



Now if either sash is to be taken out the cam-latch is turned part round, which permits the movable piece of the slide to be dropped into the recess, E, when the piece can be withdrawn, leaving a wide, open space sufficiently deep to release the sash, when shoved into it, from the guide. The process of replacing the sashes is similar. After they are in place the movable piece is fitted at the top, the bottom held in place, and the catch turned. The same means of removal apply, of course, to the attachment of weights.

Patent papers for this improvement bear date April 9, 1867. Carpenters, builders, and manufacturers who may be interested can address the patentee, C. Croley, 168 Water street, Dayton, Ohio. Rights for sale and working models furnished if desired.

## The Preservation of Wood.

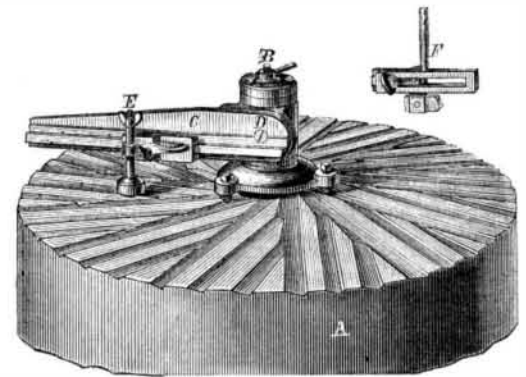
Economy is the great source of the people's wealth. So the time and labor-saving machines and material-saving articles that have been and still are being invented in our country, saving time, labor and property, are first among the causes of the rapid increase of wealth, the prosperity, and growth of the United States.

Among the issues of patents noticed this week, in our journal, is one invented by S. G. Harding, of Morrison, Whitesides Co., Ill., under the name of "Harding's Wood Kyanizer,"

which bids fair to hold a prominent place among inventions in the benefits, it is likely to accomplish for mankind. He claims by chemical and experimental knowledge that it will render any kind of wood harder, tougher, less combustible, and more durable, preserving wood from the decaying influences of the atmosphere, water and earth, three or four times longer than if used in its natural state. The principle of its working is to precipitate and coagulate the albumen, a putrifiable substance contained in the sap, and fix the ammonia, thus rendering those decaying elements passive, and harmless, also filling the pores of the wood with minerals that will make the stick almost as solid as stone, resisting the entrance of oxygen—the vegetable-destroying element—and water.

## GILMORE'S DEVICE FOR STAFFING MILLSTONES.

The ordinary way of trueing a millstone is by the aid of a staff of wood, made generally of several pieces, and of wood not liable to springing or warping. In the eye of the stone



must be driven a center of wood in which a center point is made that shall govern all the after process. If a mistake is made in the initial process the further the work proceeds the more eccentric or further from truth is every subsequent operation. It is a matter of some delicacy, requiring good judgment and a correct mechanical eye to lay out a stone with these means. It consumes time and entails much labor and careful oversight. In fact, the workman has no permanent and reliable initial point and his labors are necessarily protracted, and when finished, sometimes unreliable.

Also, in making the lands and furrows there is involved a large expenditure of time and much carefulness. It is a continual testing and adjusting, annoying to the workman partly from the incessant labor and repeated trials of the correctness of his work, and partly from the doubt whether, when his work is finished, it will be correct. To aid the miller in these important preliminaries is the object of the device illustrated in the accompanying engraving.

A, represents a millstone having an upright stud secured to the eye of the stone by a bolt, which passes through a plate on the under side of the stone up through the stud, which is hollow, and is secured by the lever nut, B, on the top. The base of the stud is broad and furnished with three set screws, equi-distant from the center, which bear upon the stone and serve to adjust the stud in a position perpendicular to the face of the stone. A box fits the stud and carries a horizontal arm, C, the outer end of which can be raised or depressed turning on the pivot, D, which secures it to the box. The outer face of the arm has a dovetail rib on which slides a block that carries a marker, E.

To true the stone the stud should be secured to its center and adjusted by means of the set screws until the horizontal arm, when, with the marker it is swept around the stone, will show an average level. The bottom of the marker is then painted and moved back and forth from circumference to center, or, with the arm, swept around the stone. The dressing of the stone follows, of course, the marks. F represents a marker adapted for laying out the furrows. It can be attached to the arm instead of the marker, E. The position of the arm relatively to the center of the stone is calculated so that the arm is parallel to the leading furrow. The operation of staffing the furrows is similar to that of leveling the stone's face. Practical millers will readily perceive the advantage of this staff.

For further particulars address L. Anderson, Painesville, Ohio.

## New Water Mat.

Dr. J. L. Prentiss, of the Kansas State Medical Society suggests a very excellent and simple means of applying water dressings to the human body for medical purposes.

It consists of a light rubber tube about seven or eight feet in length, (longer or shorter as necessary), coiled in the form of a lamp mat, to the desired dimensions, and retained in shape by means of light cords extending from the center to the circumference, and tied around each coil, one end of the tube (from the center) being left of sufficient length to introduce into a pail of water, and the other (from the periphery), with a stop cock attached, extending to the waste pail.

By means of a current of water through this coil, any desired temperature may be produced and maintained. The smallest size tubing is the best and costs but little.

We are indebted to O. B. Kinney, Esq., of the Raritan and Delaware Bay Railroad, for a fine specimen of fossil shark's teeth from the Squankum Marl pits, described in a recent number of our paper. These fossils, according to the calculations of geologists, once belonged to fish that swam around New Jersey in days prior to the Noachian flood.