

COMBINATION GRINDING MACHINE.

Since the introduction of solid emery wheels as a substitute for files and grindstones for sharpening saws and other tools, several different machines have been devised, each adapted to the grinding of particular classes of implements. By the apparatus represented in our engraving, it is claimed that all the tools used by wood workers can be sharpened, so that, in one machine, not costly in price, is furnished all that is required for grinding saws, planing knives, molding, and hand tools, in an effective manner, and with considerable saving of room, power, and expense.

The nature and construction of the device is sufficiently shown in our illustration. It is furnished with improved countershaft and patent belt shipper (not represented), and also with improved boxes, which exclude all dust and emery from the bearings. At either side, is shown the saw and planer knife grinding attachments, which may be readily detached whenever the machine is required for other work. Four wheels, we are informed, of different shapes, for grinding molding tools, may be used at once.

The efficiency of this apparatus has received a merited recognition in the shape of premiums from both the Cincinnati and American Institute Fairs of 1872. The machine can be procured only of the Northampton Emery Wheel Company, of Leeds, Mass., or of their agents. A list of the agencies in the principal cities will be found in our advertising columns.

Manufacture of Mad Stones.

A Virginia paper says there is a man in that State who is engaged in the manufacture of mad stones for the cure of hydrophobia. The original madstones were brought from France and Italy, and have the appearance and the weight of the more porous kind of bone. The domestic manufacturer gets the bone itself, and saturates it with some chemical or other, and sells small bits of it at \$5 each. Besides its virtue as a relief for hydrophobia, the bone is said to cure tetanus. "The cases of lock jaw," says the Virginia editor, "are too few to make this discovery important. Can't some one invent a cure for limber jaws? They cost the State a great deal."

IMPROVED SELF CAR COUPLER.

This is an effective and simple device for automatic coupling, so arranged as to preclude the necessity of a man going between the cars. No springs or intricate machinery are used; it is impossible for the pin to be thrown out by any jarring or wrenching of the train, and the apparatus can be readily substituted for the old-fashioned coupling without necessitating the removal of the latter.

Fig. 1 is a perspective view of the invention, and Fig. 2, a sectional view, the former showing portions broken away.

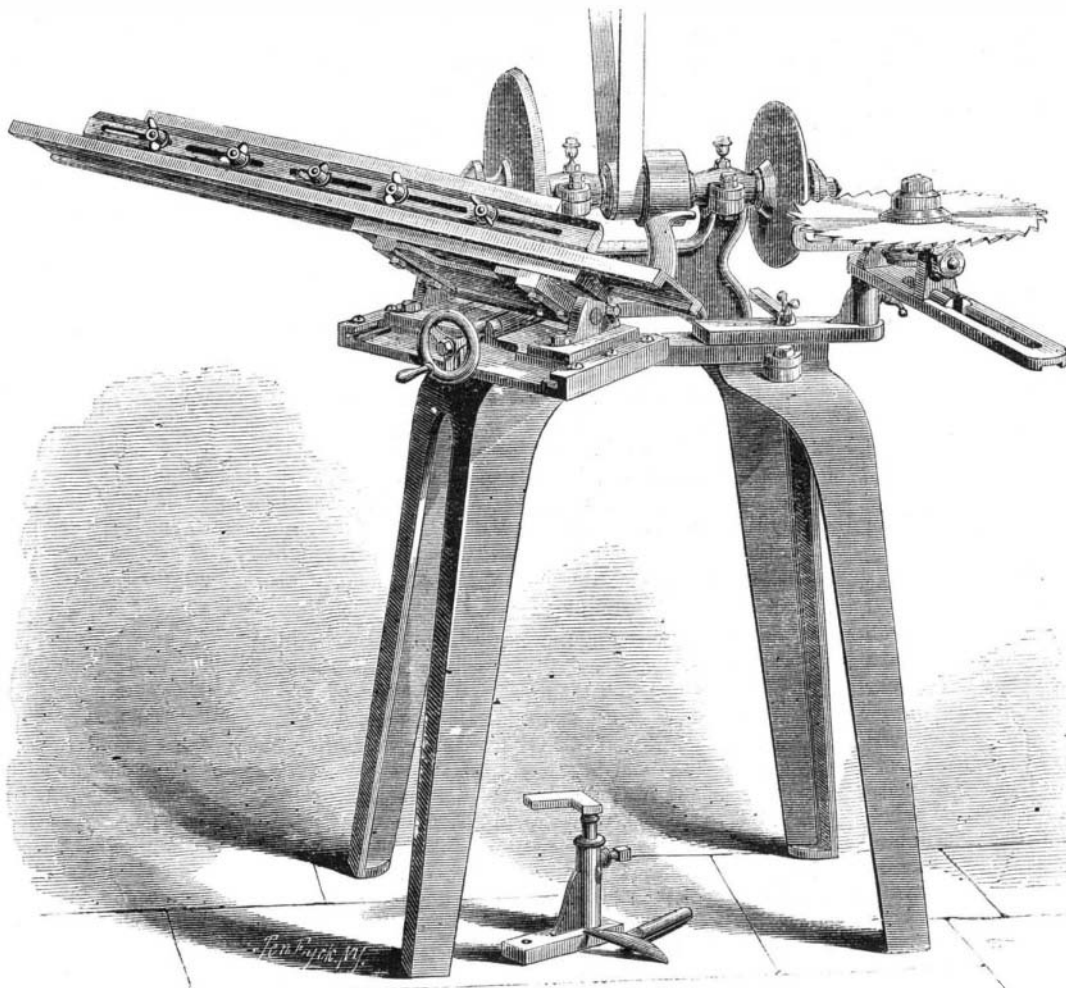
A is the bumper, in the rear part of which works a slotted bar, B. C is a bell crank keyed to a horizontal shaft, D, which passes through the bumper in rear of the bar, B. Through an orifice in the upper horizontal portion of the latter, the pin, E, passes. This pin is of an ordinary description, and its head is countersunk in its support. G is a plate attached to the bar, B, and arranged to turn over the head of the coupling pin in order to prevent it from being jolted or otherwise thrown out.

Fig. 2 shows the device arranged for operation. By elevating the lever, shown on the outer end of the shaft, D, the bell crank, C, which works in the slot in the vertical portion of the bar, B, is turned so that one of the arms comes in contact with said bar and raises it. By this means the pin, E, is also lifted clear of the link opening. While one arm of the bell crank, C, is engaged in supporting the bar, B, the other arm projects into the rear of the opening in the bumper. The upper portion of the last mentioned arm, it will be noticed from the engraving, is curved or beveled. As the link, F, enters the bumper, it strikes the curved end of the horizontal arm. Acting thereon, it forces the latter downward, thus moving forward at the same time the vertical arm. The bar, B, being no longer supported, falls and carries with it the pin, which passes through the link and locks the coupling. In this position the device is shown in Fig. 1.

The chain on the lever which actuates the shaft, D, may be carried to any convenient point, so that by thus actuating

the lever, the car can be instantly uncoupled at any moment. After the link is once forced in and engaged, it does not press anything but the solid iron of the bumper, and is not in contact with the lower part of the bell crank. The bar, B, is locked by the bell crank in whatever position it may be in, and by its weight holds the lever perfectly level. This coupling, it is claimed, will always operate even on the sharpest curves. If it should get out of order it may still be employed in the ordinary manner, the pin, E, being inserted by hand.

The coupling is the invention of Mr. M. Disney, of Cali-

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fornia. Further information may be obtained by addressing Mr. H. C. Kibbe, 419 California street, San Francisco, Cal.

Marine Camels.

E. S. F., of Washington, D. C., comments on C. W. Stewart's letter, published on page 36 of our current volume, and states that the marine camel has already been invented and constructed. It is a floating screw dock which

tuns, with six driving wheels connected, single leading truck and eleven by sixteen inch cylinders.

The passenger cars seat thirty-two persons. It may be well to mention here that the lateral oscillation of these cars, when moving at fifteen miles an hour, is much greater than that upon notoriously ill-conditioned roads of broader gage, at twenty miles or more. How far this fact is due to the diminished gage is an interesting question. The weights of the box cars are about 9,500 pounds; of stock cars, 8,500; and of the flats, about 7,000 pounds; and their working loads are fixed at eight tons.

The construction and equipment of the road, as it now is, cost, according to the statement of the superintendent, Mr. Buchanan, \$15,000 a mile, of which the equipment is estimated at \$1,000 per mile.

Unfortunately, no fair comparison can be made of the cost of construction of the Kansas Central, as it now is, with that of a first class road of any gage; for the cross sections are confessedly too small, and the timber substructure must be considered as at best but semi-permanent.

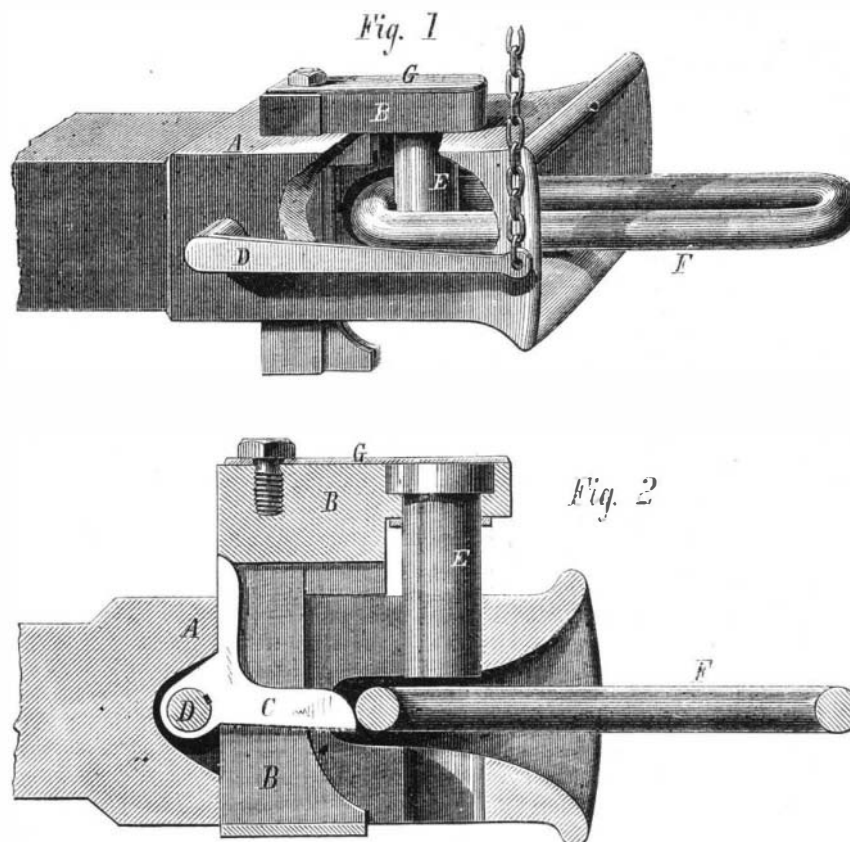
The traffic is very light. They run two daily trains each way, the mail and the mixed. The schedule times for the trains are: The mail, 14½ miles an hour; the mixed, 10 miles an hour.

The foregoing information is given in the *Railroad Gazette*, by Mr. Henry G. Prout.

The Air and Fires in Buildings.

A correspondent, B. G., states that there is a pressing necessity for some system of confining fires to the buildings in which they originate, and he points out that the air has as much to do with conflagrations in cities as fire itself. The force and heat of the air, during a large fire, are sufficient to destroy plate glass windows, and so establish communication between buildings. He therefore suggests the employment of iron shutters to close all openings in buildings; these shutters, to be worked by hand if hydraulic or steam power were not available, could be connected together, so that one operation would suffice to close them all.

At Chicago recently, a lady at church was seen to bow her head as if in pious thought. She suddenly raised it and leaned back against the seat, when an explosion occurred that shook the building. She had pressed too heavily on an air cushion bustle.

**DISNEY'S SELF CAR COUPLER.**

will lift a vessel of six thousand tons, entirely out of the water if necessary. It can be made to draw not more than ten feet of water; it can, if necessary, be self-propelling. Its lifting power consists of sixty screws, worked by two steam engines, placed on two floating hulls. The hulls are three hundred and fifty feet long by forty feet beam and fourteen feet depth of hold, the vessels to be lifted being placed between the floating hulls. One or two vessels can be raised at a time. It is a Baltimore invention.