

New Inventions.

Improvement in Casters.

The annexed figures are views of an improvement in casters for articles of household furniture, invented by Messrs. Bird & Rose, and illustrated and described in *The Engineer*, London. The nature of the invention consists in making the lower or rolling part of casters in the form of spheres, globes, or balls, of any convenient dimensions, having their upper parts pressing against one or more smaller balls or spheres, the whole being inclosed in suitable standards or frames, either with or without anti-friction rollers, pulleys, or balls. The frame of the caster is provided with a screw, in order to lengthen or shorten it when required, to adjust the article of furniture to a proper height, and if the surface of the floor is uneven, to adjust it to the various inequalities, and give it a perfect level, which arrangement will be found peculiarly applicable to pianos and similar articles.

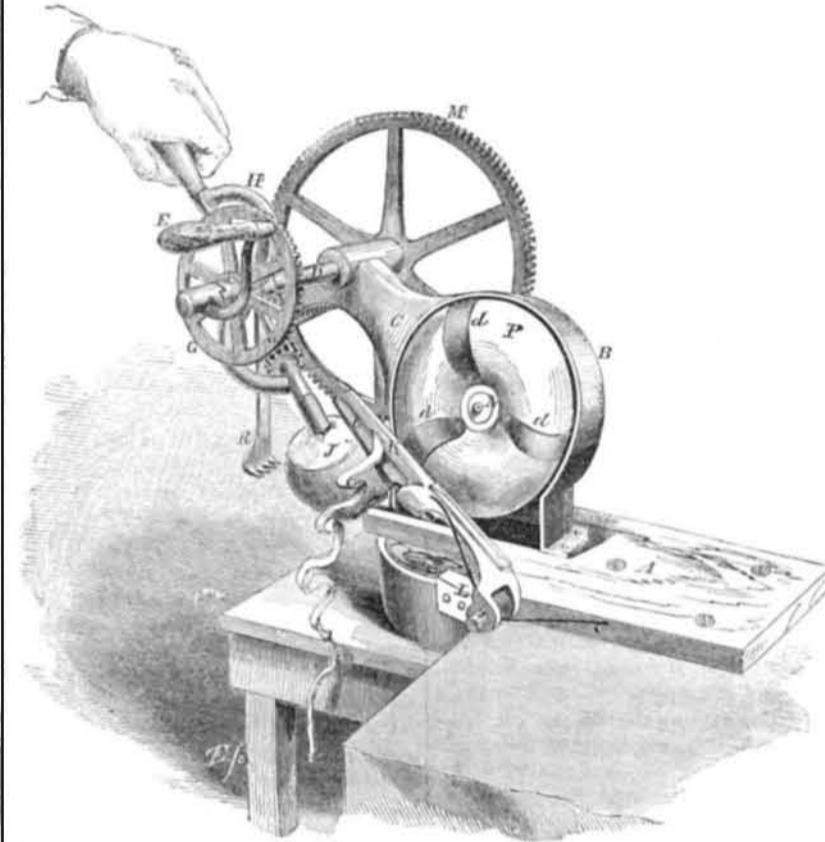
Fig. 1 is a sectional elevation of a large caster, having a propelling edge or rim without anti-friction pulleys or rollers; fig. 2 is a part sectional view of a caster with anti-friction pulleys, showing another mode of attachment to the article for which it is required; and fig. 3 is a part plan of a caster in which balls or spheres are employed, instead of anti-friction pulleys or rollers.

In fig. 1 the frame of the caster consists of three parts, *a b c*, the part *c* being the keeper. The sphere or roller is shown at *f*, being a little smaller at one-third of the diameter from the top than the propelling edge, *g*, of the frame, to allow freedom of action for moving in any direction; the upper part of the sphere or ball plays a smaller sphere or globe, *h*, placed within the cup, *i*, having a pointed or spherical surface, *k*, which is made of glass, steel, patent metal, or other hard material, which forms a fulcrum at about the center. The sphere or ball, *h*, fits loosely within its cup, *i*, so that it may be able to move in any direction, or a fast or loose convex center may be substituted for it. In fig. 3 the lower ball or sphere is bounded at the sides by anti-friction propelling rollers or pulleys, *l*, any convenient number of which may be used; but it must be observed that the said anti-friction

caster is attached, a re-action commences at *m*, which may be considered as the moving power of a lever shown by the dotted line *n*, having its fulcrum at *o*, about two-thirds of the diameter of the lower ball. The fulcrum *o* becomes the moving power of a shorter lever, shown by the dotted line, *p*, representing the other third of the diameter of the lower ball; the upper part, *p*, then becomes the moving power, which acts upon the smaller sphere or globe, *h*, causing it to move, oscillate, or rotate in its cup with endless changes of position, and allows the lower sphere to roll in any direction with ease and steadiness,

the spheres being made of glass, iron, brass, wood, or other suitable metal, or composition, and are admirably adapted for gun carriages, signal posts, turn-tables, sofas, pianos, harps, or any kind of furniture or article requiring to be moved about. Instead of the one smaller ball, *h*, in the cup, *i*, any desired number may be used; and also, instead of anti-friction propelling pulleys, balls or spheres may be employed, placed in suitable cups or holders, as shown in fig. 2. When desired, any of the cups for holding the spheres or balls may be bounded by india-rubber springs, or other material, in order to prevent noise.

SMITH'S APPLE PARER.



This figure represents the Apple Paring Machine, for which a patent was granted to Marvin Smith, of New Haven, Conn., on the 26th of August last.

A is the bed board of the machine; it is secured by screws at one end only to a table or bench. B is a hollow dished case secured to the board, A. This case is cast with a projecting arm, C, which supports the driving spindle, D. E is the handle for driving this spindle, and is firmly secured on its end. F is a sliding clutch collar which has a handle, H, for managing the fork, which it sustains, also the pinions which rotate the fork with the apple on it. G is the bevel pinion on the collar F; it gears into the pinion at *a* on the fork spindle, L. The collar of the handle, H, is loose upon spindle D, and swings upon it, moving the fork through the arc of a circle to the action of the paring knife. When the pinion, G, is rotated, as shown, by the handle, E, the pinion, *a*, rotates the apple fork with the apple, J, on it, against the knife blade, *b*, and the apple skin is stripped off between the blade and the guard finger, K, as represented. The knife stock, of which the guard, K, forms a part, is jointed at L to allow it and the knife to be moved up and down in the arc of a circle, as the operator moves the apple on the fork, by handle H (commencing at the stem,) up against it. A stiff spring presses the knife against the apple, J; the paring knife thus accommodates itself to the motion of the apple fork, which is managed by the operator's hand, as shown.

When the apple is pared, it is sliced as follows:—The wheel, M, gears into a pinion on the back of case B; this pinion is secured on the end of a small spindle, N, passing through the case; on this short spindle is secured the ogee plate, P, which has three slots in it. Over these are secured three slicing knives, *d d d*; at the cutting edge of each a small space is left open into the slots mentioned. When the apple is pared by the knife, *b*, the operator pushes over handle H, sliding collar F on spindle D—pushing and pressing the apple, J, against the face of plate P. The fork, R, is then pressed against the apple to

prevent it rotating. The wheel, M, gearing into the pinion on spindle N, rotates the slicing disk, P, and its knives, *d*, slice the apple, J, as they rotate—the cut apple being carried through the slots into the inside of the case, B, and falling down through its bottom into a receiving vessel below. Apples can be cut very fine for making cider, or any other purpose, by the knives, *d*. The left hand of the operator directs or manages the apple against the paring knife, and the slicing knives, while his right hand rotates the apple when being pared, and also the knives, *d*, while being sliced.

This is a very neat and strong apple parer and slicer; it is not liable to get out of order. With it a boy twelve years old, after a little practice, can pare and slice a bushel in fifteen minutes, in the most perfect manner. O. F. Parsons & Co. have sold the right for the State of New York for \$7,400, and the right for Massachusetts for \$2,200.

More information may be obtained respecting it of the agents, O. F. Parsons & Co., No. 14 Chambers street, this city.

The Compass on Iron Vessels.

On the schooner *Mahlon Betts*, built in 1855, of iron, by Messrs. Betts, Pusey & Co., of Wilmington, Del., the compass, when in the binnacle, in the after end of the cabin, was so much affected by local attraction as to be entirely useless at sea. Learning that Capt. Morris, of the steamer *R. B. Forbes*, of Boston, (which vessel is also of iron,) had discovered and practiced the remedy; the owner applied to him, and the result was, the compasses were adjusted in their usual place, by means of magnets, so as to be reliable in a degree seldom attained even in vessels built of wood. And now after a trial of about one year on our coast, ranging from Boston to Savannah, the result has been very satisfactory—Captain Godfrey placing entire confidence in their correctness.

Wonderful New War Machine.

An article is now going the rounds of our cotemporaries, taken from a correspondent of the *Journal of Commerce*, this city, describing

a most wonderful machine for annihilating armies, sinking ships, and bombarding cities. It is described as resembling a small grindstone, turned by a crank, and will discharge three hundred one ounce balls every minute, attended by only two men.

It is stated that the inventor is an American, now in England, and that the British Government has offered him \$1,000,000 for it, if he can enlarge it so as to discharge six-pound shot. It is also stated that successful experiments were made with this machine at Washington before a board of naval officers, and one of the old Commodores remarked that "it could send a ship to the bottom in five minutes."

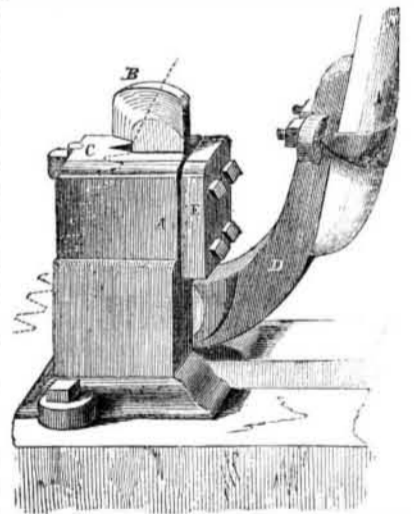
The account of this infernal machine is a fabrication; there is no such machine in existence. The maker of the story is perfectly qualified to shoot bullets with a cheese press.

Improved Saw Gummer.

This figure is a perspective view of the saw gummer for which a patent was issued to L. A. Dole, on the 9th of Sept., 1856.

A is the metal block or stock of the gummer, and is composed of two sides and top plate, with a recess in the middle, and is bolted down to the floor. B is the punching movable die, which is connected by a bar with the lever, D, which moves it up and down. C is the recessed stationary die, secured firmly in the top of block A. E is a plate which secures the bar of the movable die, B, in place, to work up and down. A saw, in dotted lines is represented being gummied in the machine; it rests on the die, C. The lever, D, which is a forked eccentric, is inserted in a recess in the stock, and securely attached to the lower end of the peculiar die bar; having its upper surface bearing against the shoulder formed by the recess, while the flanches below sustain it, giving both an upward and downward motion to the die, B, by a simple motion of the lever, D, without the aid of springs or other devices.

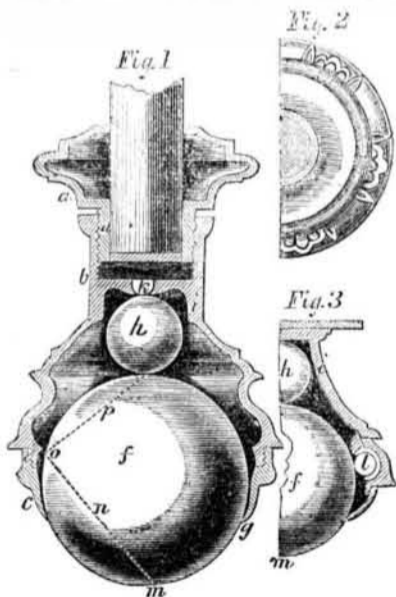
The body or stock of this gummer is compact in form, having securely fitted into it a heavy cast-steel die bar of a form peculiar to this gummer. The punching die, B, seen above the stock, projects from the front edge of the die bar, of which it forms a part; and being the only portion of the machine above the female die, on which the saw rests; an unobstructed view of the work is secured, while the greatest desirable facility for shifting the position of the saw is obtained.



The arrangement of the dies in this machine avoids all trembling or vibratory motion, rendering this machine equally adapted to gumming or cutting the teeth of mill, cross-cut, circular, and other saws—giving the operator the privilege of alternately changing the saw, and also of cutting the teeth of any desirable shape without straining or twisting the saw.

Although extremely simple in its construction, this machine has arranged, in an ingenious manner, all the essentials desirable in a saw gummer, while many of the objections, common to this class of machines, are obviated.

Dole, Silver & Felch, of Salem, Columbiana Co., Ohio, to whom this patent was assigned, have commenced their manufacture with a view to supply the trade throughout the Union. Any desired information may be obtained by addressing them as above.



rollers or propelling pulleys have no weight whatever to sustain, the whole weight resting vertically on the bottom sphere and center point, leaving the propelling edges and propelling balls or pulleys perfectly free from any weight or resistance. When desired, a caster is attached to the article having an adjusting screw, either with or without a set nut in the frame of the caster for raising or lowering the article on which it is fixed, as shown at fig. 1. This caster, with the screw, is for the purpose of adjusting the article to the exact height required, and fixing it to a perfect level, which is often very difficult, on account of inequalities in the surface of the floor. In the improved caster, the large sphere or ball is made of glass, and the small one of ivory, or similar material, thus making it a double spherical insulator, peculiarly applicable to pianos, harps, or other musical instruments. When force is applied to the article to which the