

### Improved Spoke Tenoning and Felly Boring Machine

Many small wagon makers and wheelwrights scattered about the country, will find the device here illustrated a great advantage to them, since much more work can be done with it and with less exertion than by the common way.

The arrangement consists in applying a small machine to a bench or horse, as shown in the engraving, placing the wheel with the spokes in close to it, and then cutting the tenon on each spoke with rapidity and accuracy. In detail the machine consists of a casting, A, having a mandrel with an expanding cutter, B, on the end which can be set to cut tenons

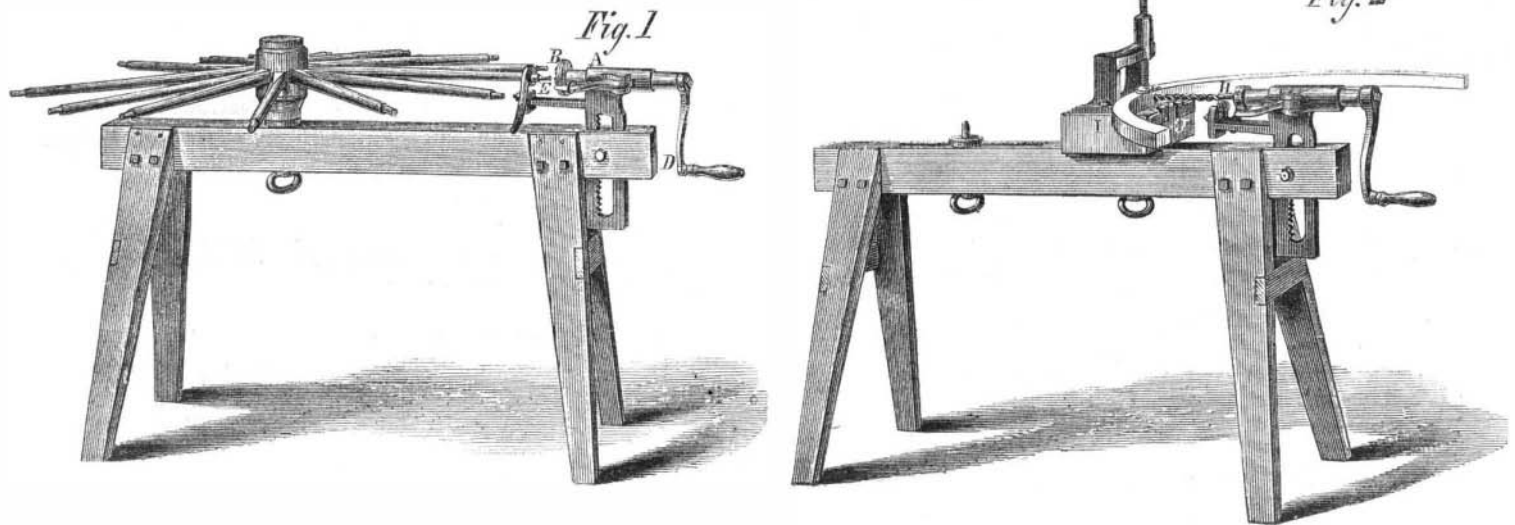
Hardinge, a spiritual medium, by the ghost of his uncle, a worthy mechanic sometime deceased. Acting upon the hint of Miss Hardinge, he made the fastener, which is certainly a good one, and if done by the spirits, as Mr. Chase claims, is certainly no discredit to their inventive genius. People often dream of valuable inventions, but they do not always turn out so well as they dream they will.

### Album for Porcelain Pictures.

Mr. J. C. Spooner, photographer, of Springfield, Mass., has shown us a new album of his invention, designed for porcelain pictures. It has heretofore been impossible to preserve such pictures except in

It consists of a pasteboard disk, A, and a tin cap, B. The pasteboard fits tightly to the jar and is almost sufficient in itself to secure the desired end, out in addition to this the cover or cap, A, is placed on top and a small quantity of cement or wax poured in over it. This immediately runs into the groove, C, and makes a perfectly tight joint, while the air, pressing on the top of the cap with great force, keeps the pasteboard disk in close contact with the jar. By the use of the pasteboard the fruit is not injured, as is the case when brought in contact with india rubber, and no wax can enter the jar in sealing or unsealing. It is in all respects simple and reliable.

For further information address J. M. Chrysler &



DOLE'S SPOKE-TENONING AND FELLY-BORING MACHINE.

of various sizes. The mandrel has a series of grooves turned in it, which receive a lever, C, formed to suit them. This lever projects, as will be seen, and is intended to feed the cutter up to the spoke.

By turning the crank, D, and at the same time grasping the projecting lever, the cutter will be revolved and fed up, thus forming a tenon in a short time. The leg of the casting, A, has a rack formed in it in which a pinion, not seen, works. This is to elevate the whole machine so, as to suit different heights, and there is an adjustable rest, E, which accurately centers and holds the spoke while being acted on. In Fig. 2 the same machine is shown adapted to boring fellyes, a bit being substituted for the cutter shown in Fig. 1. There are stops on the adjustable rest at H, which the bit holder brings up against, thus limiting the depth of the hole. At the front of the vise block, I, which holds the felly are two guide irons, J, to keep the same in position when dowel holes are bored. These machines will be found very handy. The invention was patented by L. A. Dole, on Oct. 31, 1865. Address Dole, Silver & Deming for further information, at Salem, Ohio.

### WESTERN STEAM BOILERS.

Mr. William H. Glynn, an engineer of Dubuque, Iowa, writes us to say that his experience, in regard to priming of Western steam boilers and the malproportion of them, accords with that of Mr. Schaeffer, which was recently published in the SCIENTIFIC AMERICAN.

Mr. Glynn states that he has frequently seen cylinders coated inside as if they were whitewashed—the result of priming; and, further, that many accidents also take place from the bursting of steam pipes. This, he thinks, takes place from a sudden checking of the water and steam, by the fall of the steam valve, which induces a sudden strain that the pipe cannot bear. He thinks priming is also caused, in many instances, by opening the throttle too wide, when the cylinder is cold. The steam will be condensed in the cylinder, forming a partial vacuum, which the water from the boiler naturally flows into. He also says that he finds no more trouble in keeping water in tubular boilers than in two flue boilers, if the former are clean.

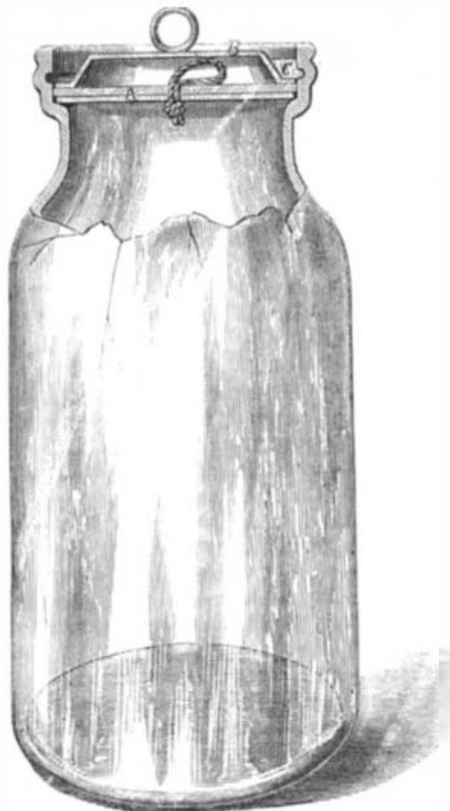
### A Spiritual Invention.

Mr. Frank Chase, of South Sutton, N. H., states that the blind fastener, illustrated on another page of this number, was revealed to him through Emma

frames, for unless special care is taken the transparency of the picture, which gives it its chief value, is entirely lost. Mr. Spooner makes his albums with a glass front in one part of it, so that by sliding the picture back it can be readily held up to the light and sun and still be preserved from injury. Externally the album is handsomely finished and is so constructed that a number of pictures are alternately exhibited through the same glass.

### CHRYSLER'S FRUIT JAR.

Many persons still use cement or wax in sealing fruit jars, and prefer that plan to others, as being cer-



tain under all circumstances. For this mode of closing fruit jars the cap shown in the engraving will prove a very convenient one.

Son, No. 15 Pine street, Lockport, N. Y. Patented Nov. 21, 1865.

### A SEVEN-TOOL LATHE.

The London *Artizan*, of April, gives an illustration of a new lathe for turning crank axles. All machinists know that there is a vast amount of work on these, and that it is necessarily slow and tedious. The body of the crank has not only to be cut out, but a vast amount of turning on the bearings beside. Where this is done on a common lathe the job is a long while in it, and both employer and workman get sick of the sight of it.

To expedite the process a lathe has been devised by Mr. Ramsbottom, of the Crewe Locomotive Works, England, which has a tool for every essential part. That is to say, the sides of both cranks are faced at once, making four tools and four slide rests at work on this part; the two bearings are also turned up at once, and one of the ends is faced, making seven tools at work at one time.

It is stated that these tools work well together, and that the workmen have no trouble in attending to them. Of course, since the lathe operates well, comment is superfluous, but it will occur to all practical men that axles cannot be true turned in this way, for the spring of the throw, in passing over, would be likely to cause the tools to jump into the bearings and mar them.

Most, if not all the crank axles in the Crewe Works are now made from Bessemer steel, and by another peculiar machine the throw of the crank is cut out from the blank in about ten hours, which is quick work.

M. TARDIREL states, that if a perfectly smooth and polished plate of glass, ivory, or metal is caused to rotate with great velocity in a horizontal plane, it does not communicate its own motion to a highly finished ball which may be placed upon it.

[M. Tardirel need not have inconvenienced himself to have stated that.—Eds.]

GOOD IDEA.—On the *Chemin du fer du Nord*, tubular stays have been used for locomotive fire-boxes to some extent, the escape of water through the stay showing at once that it has suffered from corrosion. These stays are made by drilling through the solid bar,