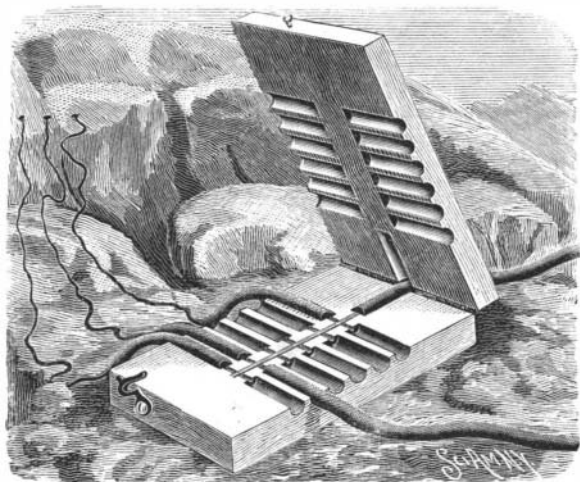


A MULTIPLE FUSE IGNITER.

The device shown in the illustration is designed to promote safety in blasting, providing for such purpose a simple and very efficient means of safely holding and simultaneously firing any number of fuses. The improvement has been patented by Mr. William J. C. Doyle, (box 874) of Aspen, Col. It consists of two block-like pieces, hinged together, so as to be folded one upon the other, and firmly secured in such position by a

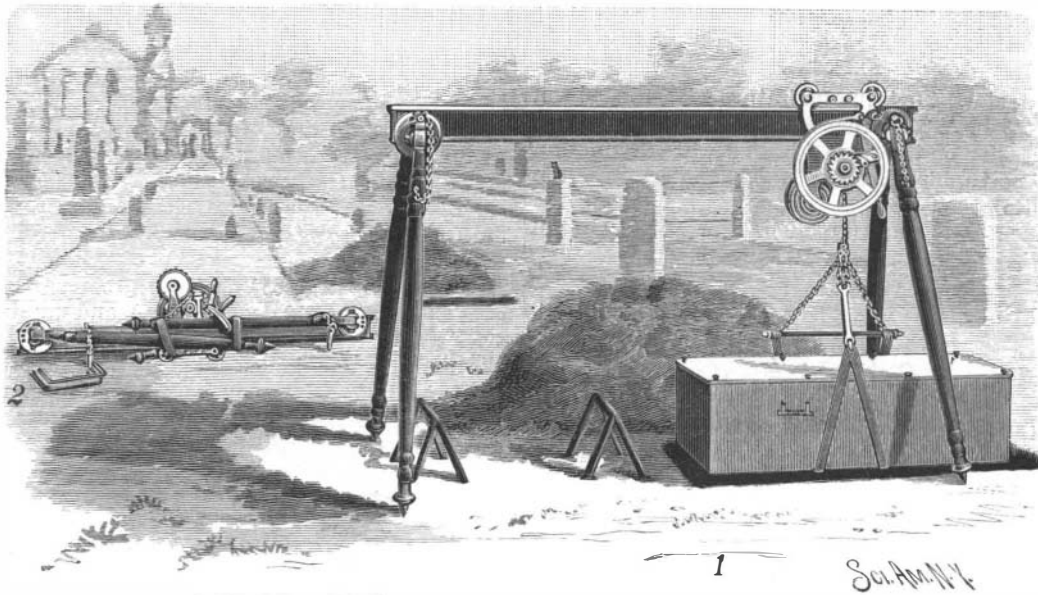


DOYLE'S FUSE IGNITER.

simple form of fastening. On each side of the inner faces of the blocks are short semi-cylindrical grooves, which, when the parts are closed, register and fit closely upon the fuse, and these several grooves are connected by a small branch groove in one of the blocks, this groove being adapted to contain fine powder, by which fire may be communicated to the several fuses. The fuse by which the others are fired may be located in the registering grooves in the hinged end of the block. If desired, ordinary black powder may be mixed damp to form a paste and moulded into the small branch grooves to dry there in position. For wet blasting, the edges of the blocks may be first smeared with cartridge soap, to make a water-tight joint.

A COFFIN-LOWERING APPARATUS.

The accompanying illustration represents an improved apparatus for the use of undertakers, the small view showing the device folded for transport. It has been patented by Mr. John B. Beugler, of Dayton, Tenn. Upon a beam supported by four legs travels a carriage having friction rollers and a lock lever by which the carriage may be locked in a desired position. Near the center of the carriage are depending ears in which is pivoted a grooved pulley in side recesses of which are coiled springs, one end of each spring secured to the wheel hub and the other end to the ears. A chain attached to this wheel passes over a sprocket wheel on a shaft, which also carries a large loosely mounted grooved wheel outside of the carriage, a ratchet wheel on the shaft being engaged by a pawl on the loose wheel, the latter being surrounded by a brake strap and acting as a brake wheel, for which a brake lever is held in convenient position. The lower end of the chain is attached to a bar, to each end of which one end of a strap is secured, the opposite ends of the straps being also connected by a shorter bar. A locking device of novel character is employed, by which the proper adjustment is effected when the casket has been placed upon the straps. This adjustment is readily made with the coffin either at the foot or side of the grave, when, by turning the large wheel, the coffin is sufficiently raised to be readily guided to the proper place in the grave or vault. The operator, by means of the brake lever, has full control of the speed of descent, and should the coffin catch or lodge



BEUGLER'S APPARATUS FOR LOWERING BURIAL CASKETS.

on any projection, the locking device would not cause its release. When, however, the coffin comes to rest, the chain is slightly slackened, and the locking device then disengages itself, and the chains with the straps constituting the sling are automatically carried upward out of the way, the chain being rewound. The legs being adjustable, the device is designed to operate on a side hill as well as upon level ground.

"THE EXPERT" RUBBER BAND DATING STAMP.

The R. H. Smith Manufacturing Company, of Springfield, Mass., who have been for over twenty years leaders in the manufacture of rubber stamp goods and who are the sole owners of the metal-bodied rubber type so widely used, have recently placed on the market a new dating stamp called "The Expert," that has a number of valuable and novel features. The illustrations which we give in this connection show the construction of this stamp very clearly.

The dates and other shiftable printing characters are upon three endless belts, which are mounted to revolve around a central core, the lower end of which forms the backing for the characters while in position to print. From the upper side of this core block rise three standards, the center one for the day belt being highest, as that belt has thirty-one characters and the other two but nineteen each; central on each standard rises a thin blade-like support having a crotched or open bearing at its top end, and upon each of which freely revolves a steel wheel having a central axis. The belts run over these wheels and are shifted by a very novel device which clamps the belt firmly to the wheel, moving both along just the distance from one printing face to another. Between each wheel and the flat shoulder of its standard is interposed an elliptical sheet steel spring, having a slot through it allowing it to pass on over the blade; the lower edge of the wheels resting upon the crowned side of the springs, which, by the tension of the belts, are compressed nearly straight, thereby imparting to each band a gentle tension of about four ounces, and as the belts are so made as to bend only in squares, each square of printing characters is thus effectually held in line while printing—an important advantage never before attained.

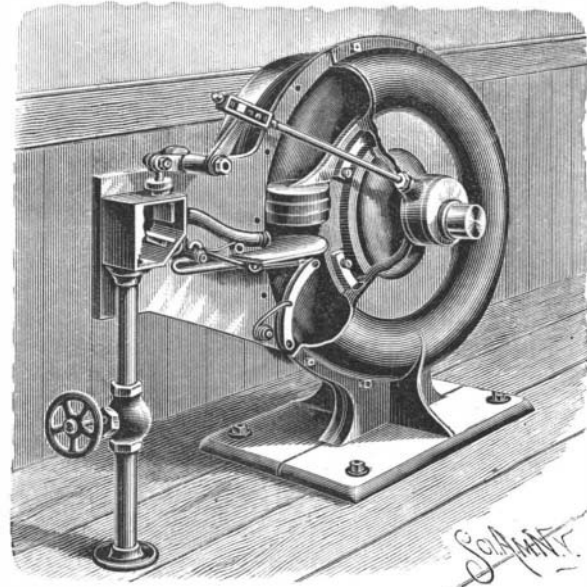
The case or shell is cast all in one piece, of hard, white metal, with partitions running through the center, forming a compartment for each band, making it impossible for the bands or their wheels to interfere with each other or become displaced. The core, with its mounted printing belts, slides into the case on substantial guides, and is adjusted to the height of the fixed die by screws passing through ears at each end of the core block, drawing it against a spiral spring in a manner admitting of ready adjustment to the thickest or thinnest die, or even a die thicker at one end than the other.

All of these parts are clearly shown in the accompanying engravings. The finger piece of each shifting clamp projects through a slot in the case. The whole is well made and nickel plated. It will also print the day of the week in connection with any hour of the day, and the side of the stamp on which the year is given has a number of words not found on any other stamp, such as "Received," "Ans'd," "Ent'd," "Paid," "Filed," "Sent," etc. This stamp is an important advance in dating stamps. The manufacturers will be pleased to give additional information to those interested.

EXPERIENCE in electrical welding shows that the metal is strengthened at the point of welding.

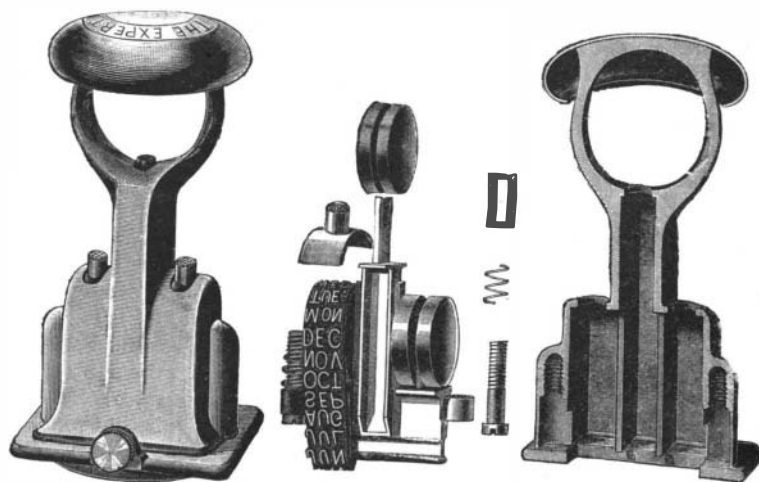
AN IMPROVED ROTARY ENGINE.

This improved engine, which has been patented by Mr. Hermann Betten, is designed to utilize the steam or other motive agent to the fullest advantage. The cylinder and its base preferably con-



BETTEN'S ROTARY ENGINE.

sist of two parts bolted together, and the piston, secured on the main shaft, has a circular head traveling in the outer circular space of the cylinder. Below the steam inlet pipe a gate is arranged to slide into or out of the cylinder, a spring-pressed arm connected by a link with the gate holding the latter in its inner position, as shown in the illustration, during the most of the revolution of the piston. As the revolution is nearly completed, the piston head strikes the arm, whereby the gate is drawn outward until the head has passed. The gate is also pivotally connected by a link with a



NEW RUBBER BAND DATING STAMP.

valve in the steam chest, so that the steam is shut off during the time the gate is withdrawn as the head is traversing this portion of the cylinder. The steam chest has a transverse partition dividing it into two compartments, one of which is connected with the source of steam supply and the other with the pipe leading to the cylinder. In the latter compartment slides the cut-off valve controlling the amount of steam admitted to the cylinder, this valve being connected with one arm of a bell crank lever, and the other arm of the lever being adjustably connected with an eccentric rod operated from the main driving shaft. This form of engine may be arranged with two cylinders attached to a main driving shaft if desired.

For further information relative to this improvement address Messrs. Naber & Betten, New Vienna, Iowa.

World's Fair Notes.**A WHALER AT THE FAIR.**

The old whaling bark Progress, which has now reached Detroit on her way from New Bedford, Mass., to Chicago, where she and her contents will constitute for the benefit of World's Fair visitors a complete exhibit of the whale-catching industry, has a remarkable history. She has made 17 trips around Cape Horn, all of them successful. Forty times has she crossed the Arctic Ocean in search of the whale and his valuable blubber. In 1869 she set sail and joined the Arctic fleet. In 1871 terrific storms scattered the fleet and all met disaster except the Progress, which came back to New Bedford with 300 sailors, seven captains, five women, and three children, the survivors of the wreck. She carries six whaleboats, which have all seen actual service, and each one is provided with a complete equipment of paraphernalia. These boats are sharp at both ends, and can be driven at great speed by six good oarsmen.