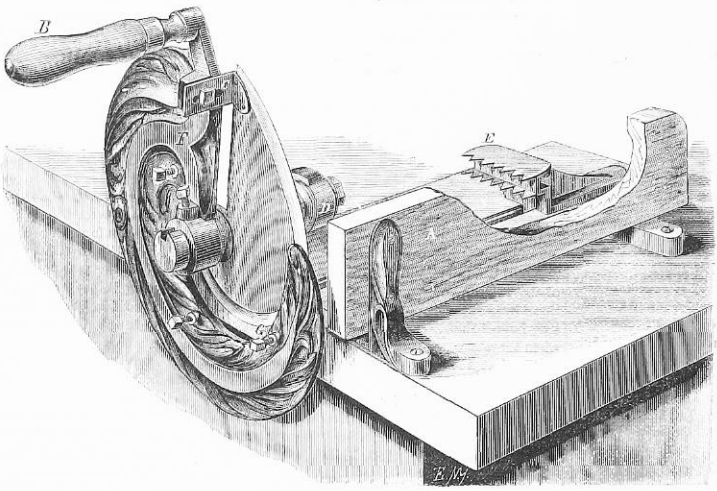
Improved Bread Slicer.

There has been a great demand of late years, especially since the war, for a convenient and simple machine to slice bread and meat with. The inventor of the one herewith illustrated says that his object has been to combine utility, neatness and durability at a moderate cost, and he thinks the end is obtained in his machine.

It is self-feeding, and by merely placing the loaf or joint of meat to be cut in the feed box, A, on turning the handle, B, the knife is revolved against the food and a slice is removed. The knife works close to the edge of the board, and can be adjusted at any time by the screws, C, in the handle. The loaf is fed up to the knife through the agency of a leather belt, D, which passes over rollers not seen; the end being attached to the clamp, E, which presses the work forward and holds it down at the same time.

In the guard, F, which protects the knife there are several cutters provided with bolts, G, which score the food to be cut in a vertical direction, so that strips may be removed instead of slices; the knife acts in conjunction with these. Any desired thickness of slice or shred can be cut by properly adjusting the feeding mechanism, and for cutting cabbage, bread, boneless meats, etc., it will be found useful. It was patented Jan., 3d, 1865, by G. B. Pullinger. For further information address J. H. Beardsley, 119 Nassau street, New York.



PULLINGER'S BREAD SLICER.

Improved Longitudinal Time Fuse.

Great difficulty is experienced in lighting the time fuses on the front ends of shells, particularly those used in rifled guns having soft cups or rings, to cut off windage, or impart rotary motion to the projectile; in these the flame from the charge is stopped too suddenly to reach the fuse. This imperfection is remedied in the shell shown herewith. This time fuse —graduated and cut like the Boreman fuse—is located in a longitudinal groove or grooves in the periphery of the shell, commencing near its base in front of the gas cup, and extending forward, entering the chamber of the shell nearer its front. Its position thus greatly increases the chances of ignition, whilst its construction is exceedingly simple as can readily be seen. Mr. Wright, the inventor of this shell is also the inventor of the ring fuse, and the cap machines which have supplied our armies since the rebellion, some sixteen machines being in operation, each capable of making fifty thousand a day. This fuse was patented March 21, 1865; for further information address. Geo. Wright, care of S. S. Fahnestock, Washington City, D. C.

Fig. 1

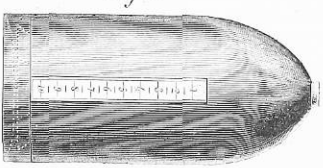
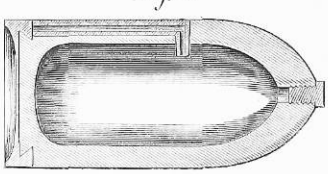


Fig. 2



WRIGHT'S LONGITUDINAL TIME FUSE.

New English Water Motor.

A rotary engine which, if it should utilise the percentage of power claimed for it by the gentleman who designed it, Mr. C. H. L. Fitzwilliams, is likely to be very largely adopted where small power is occasionally required, was described at a recent meeting of the Institute of Engineers in Scotland.

Practically, the engine may be regarded as two drums united to form one large cylinder, within which there work two pistons, each formed by uniting the halves of cylinders of different diameters, and easing down the asperities. Each piston rotates upon a shaft, which passes through the center of the drum, and as the pistons are connected by toothed wheels outside the cylinder, so that the large sides shall always be parallel to each other, it will be obvious that in each drum a water channel is alternately formed and closed between the piston and the side of the cylinder, the pressure of water in the supply-pipe acting upon the portion of the piston which connects the peripheries of the two halves. Mr. Fitzwilliams considers that if the fall is not more than 30 feet it cannot matter much where the engine is placed with regard to it; it would be just as efficient placed at the top as at the bottom of the fall. The water moves through the engine in one solid stream, during one-half of the revolution down one side, and during the other half down the other.

A comparatively small surface of the water comes in contact with the sides of the engine, so that the friction cannot be great between either the water and the engine itself, or between the different molecules of the water. The invention is likewise applicable as a water-meter, and as a pump, for which latter use it is claimed to be superior to the ordinary centrifugal pump, as it can work at quick or slow speeds with equal efficiency.

An interesting discussion followed the reading of the paper, Prof. Rankine, Mr. J. M. Gale, Mr. Dowuie, Mr. J. Elder, Mr. Yule, Dr. Joule, Mr. Day, and Mr. Fitzwilliams, taking part; and the general opinion seemed to be that it could not be used as a motive power economically, but that as a water meter it could be advantageously employed.

TRAINING DOGS.—In the course of some conversation in relation to dogs, Governor Anderson, of Ohio, related a Texan practice in training dogs with sheep. A pup is taken from its mother before its eyes are opened, and put with a ewe to suckle. After a few times the ewe becomes reconciled to the pup, which follows her like a lamb, grows up among and remains with the flock, and no wolf, man, or strange dog can come near the sheep, and the dog will bring the flock to the fold regularly at 7½ o'clock, if you habitually feed him at that hour.

New Metallic Alloys.

Messrs. T. Dunlevie and John Jones of England have patented a metallic alloy, to be employed for the bearings of shafts or frictional surfaces in machinery. The improvements consist in the combination and use of spelter and block tin, to which is added a small quantity of copper and a small amount of antimony, and the mode of combining the above in the melting pot is as follows:—First, take 4 ozs. of copper, melting or fusing it in any ordinary crucible.—When fused, add 16 ozs. of block tin and 1 oz. of antimony; and when the whole are melted together, pour the compound out into a mold. Then melt in a separate vessel 128 ozs. of spelter, together with 96 ozs. of block tin, and when both are fused, add the above ingot of copper, tin, and antimony, and fuse altogether; when properly fused in these proportions, or thereabouts, the alloy is complete. The chief features of this alloy are of great durability, and its low temperature when under the heating influence of friction.

For lining bearings, journals, etc., the bearing is to be tinned, in the ordinary method, with block tin and salammoniac. The improved lining alloy is then gradually fused, and the bearing heated, until it will fuse a solid strip of the alloy. A heated shaft, or mandril, is then inclosed in the bearing and mold, and the alloy poured in between the bearing and the shaft, remaining until it hardens; the bearing is then taken from the mold lined with the alloy.

JEFF DAVIS AND HIS 16 TUNS OF GOLD.

The flying ex-President of the ex-Confederacy is reported to be on his way to Mexico with a sum in gold variously estimated from six to thirteen millions of dollars—being the proceeds and net avails of the contents of all the banks he could get at during the closing hours of his career. The probability of its safe transport is much lessened when we reflect upon the enormous weight of it. We read, in a familiar verse of "John Gilpin:"—

> He carries weight, he rides a race
> 'Tis for a thousand pounds!

In like manner Davis carries—estimating his plunder at $10,000,000, net—the enormous weight of 16 tuns—one million of dollars weighing 3,700 lbs. Considering the condition of Southern roads and the endurance of wagons and horse-flesh, it is unlikely that the treasure will ever be carried off safely, and we hope ere long to chronicle its capture.

Mechanical Improvements.

There have recently been introduced in the Fort Pitt Works two very important mechanical improvements, the first a new plan for turning trunnions, and the second for casting shells. Heretofore, the shoulders about the trunnions have had to be shipped off by hand, a slow and laborious plan, but by the employment of another eccentric cam applied to the lathe, this portion of the gun, like all the rest, can now be turned. This great improvement has been made by Mr. Kaylor, an employee of the works. The second improvement, in the making of shells, is in casting them with five-inch sinking heads, which are subsequently turned off, instead of the small heads formerly made, by which great density of metal is obtained.

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