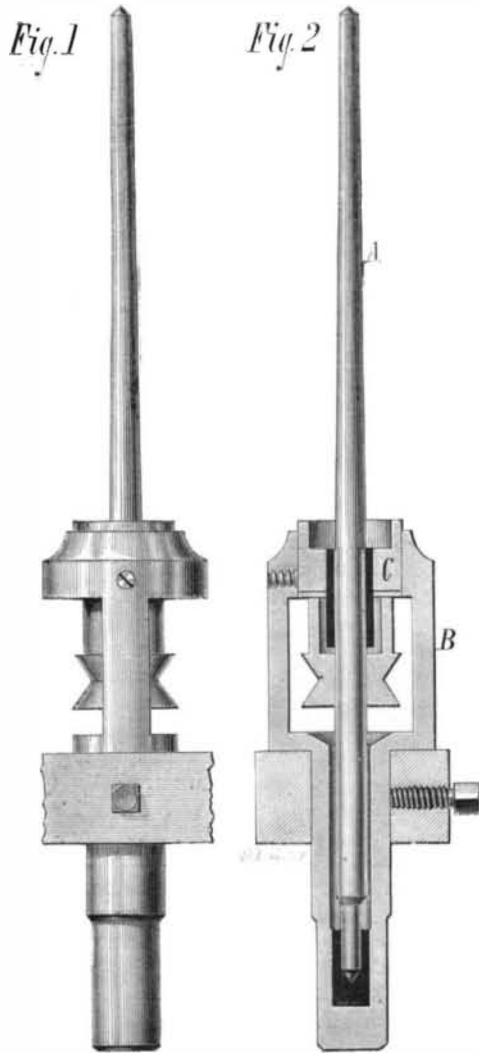


his depth, that person has everything to gain and nothing to lose by getting some knowledge of it, even though the knowledge may be limited.—Hon. W. E. Gladstone, M. P.

AN IMPROVED SPINDLE.

We give herewith a side elevation and sectional view of an improved spindle and bolster patented by Messrs. Joseph Duffy & Henry Whorwell, of Paterson, N. J. The object sought by the inventors is to provide a bolster which will



DUFFY & WHORWELL'S IMPROVED SPINDLE.

properly support the spindle, and yet permit of readily removing the spindle and its whorl when occasion requires, and to facilitate the lubrication of the spindle bearings.

The spindle, A, revolves in its bolster, B, which is secured in a socket in the supporting rail by means of a set screw. The tubular lower portion of the bolster, together with the bridge piece that supports the upper bearing of the spindle, are formed of a single piece, and the sleeve, C, in which the spindle revolves is of the same diameter as the whorls, so that when the sleeve is loosened the spindle, together with its whorl, may be removed from the bolster. An annular oil cup is formed in the upper end of the sleeve, C, and an annular collar formed on the upper side of the whorl incloses the lower end of the sleeve, C, and returns to the bearing the oil that runs through the sleeve.

We understand that three frames, containing in all 900 spindles of this improved kind, have been built by the Danforth Locomotive and Machine

Works, and are now in operation in the Watson Works at Paterson.

This spindle can be readily adapted to frames now running inferior spindles. The inventors claim that this spindle is clean, economical, free running, and substantial.

Further information may be obtained by addressing Messrs. Duffy & Whorwell, at the Danforth Locomotive and Machine Works, Paterson, N. J.

THE OTTER.

Although by no means a large animal, the otter has attained a universal reputation as a terrible and persevering foe to fish. Being possessed of a very discriminating palate, and invariably choosing the finest fish that can be found in the locality, the otter is the object of the profoundest hate to the proprietors of streams and by all human fishermen. It is so dainty an animal that it will frequently kill several fish, devouring only those portions which best please its palate, and leaving the remainder on the banks to become the prey of rats, birds, or other fish-loving creatures.

For the pursuit of its finny prey the otter is admirably adapted by nature. The body is lithe and serpentine; the feet are furnished with a broad web that connects the toes, and is of infinite service in propelling the animal through the water; the tail is long, broad, and flat, proving a powerful and effectual rudder by which its movements are directed; and the short, powerful legs are so loosely jointed that the animal can turn them in almost any direction. The hair which covers the body and limbs is of two kinds, the one a close, fine, and soft fur, which lies next the skin and serves to protect the animal from the extremes of heat and cold, and the other composed of long, shining, and coarser hairs, which permit the animal to glide easily through the water. The teeth are sharp and strong, and of great service in preventing the slippery prey from escaping.

The color of the otter varies slightly according to the light in which it is viewed, but is generally of a rich brown tint, intermixed with whitish-gray. This color is lighter along the back and the outside of the legs than on the other parts of the body, which are of a paler grayish hue. Its habitation is made in the bank of the river which it frequents, and is rather inartificial in its character, as the creature is fonder of occupying some natural crevice or deserted excavation than of digging a burrow for itself. The nest of the otter is composed of dry rushes, flags, or other aquatic plants, and is purposely placed as near the water as possible, so that in case of a sudden alarm the mother otter may plunge into the stream together with her young family, and find a refuge among the vegetation that skirts the river banks. The number of the young is from three to five, and they make their appearance about March or April.

On account of the powerfully-scented secretion with which the otter is furnished by nature, it is readily followed by dogs, who are always eager after the sport, although they may not be very willing to engage in single fight with so redoubtable an opponent. An otter has been known to turn savagely upon a dog that was urged to attack it, to drag it into the water, and to drown it. The best dogs for the purpose are said to be the otter hounds. Even human foes are resisted with equal violence.

The fur of the otter is so warm and handsome that it is in great request for commercial purposes. The entire length

of the animal is rather under three feet and a half, of which the tail occupies about fourteen or fifteen inches. On the average, it weighs about twenty-three pounds; but there are examples which have far surpassed that weight. Mr. Bell records an instance of a gigantic otter that was captured in the river Lea, between Hertford and Ware, which weighed forty pounds.

NEW BARREL LIFTER.

It is difficult to conceive of a more ungainly and inconvenient object to handle than a common barrel. It is very well calculated for rolling about on a level surface, but when it is desired to lift it from one level to another, as from the ground into a wagon, for example, or carrying it up and down steps or stairs and through narrow passages, it is quite a difficult matter.



BROWN'S BARREL LIFTER.

The engraving shows a device, the invention of Mr. William Brown, of 65 Java street, Greenpoint, L. I., which is intended to facilitate the handling of barrels. It is a very simple and efficient contrivance, and is adapted to barrels of different sizes. It consists of two pairs of triangular castings, A, each pair being connected by a handle, B, and a curved iron or steel bar, C, at the top, and the iron hoop which surrounds the barrel passes through mortises in the lower arms of the castings and is held in place by set screws. The hoop may be adjusted to barrels of different sizes by loosening the set screws and sliding the ends of the hoop one way or the other through the castings.

The manner of applying the lifter will be clearly understood by referring to Fig. 1 in the engraving. An upward strain upon the handles puts a lateral strain upon the hoop, and brings the curved bars, C, against the side of the barrel with sufficient force to admit of lifting it by the handles. A patent is pending for this invention in the United States Patent Office. Further information may be obtained by addressing the inventor as above.



THE OTTER.—Lutra Vulgaris.