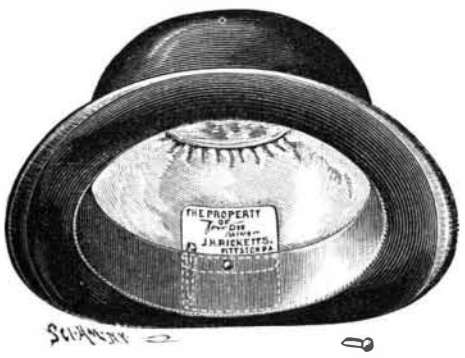
AN IMPROVED HAT TAG.

The illustration represents a very neat and simple form of tag, adapted for attachment to the sweat band of a hat or cap, and designed to bear the wearer's name and residence, or other desired information. On the reverse side is space for lot, number, size, price, brim, crown, dimensions, and block, a feature which hatters and wearers will appreciate. It is a patented invention of Mr. John H. Ricketts, corner of Main and Water



RICKETTS' HAT TAG.

Streets, Pittston, Pa. The tag is preferably made of celluloid, zylonite, rubber, or other waterproof material, with rounded corners, and has near the center of one side an eyeleted opening for the reception of a pivot pin by which the tag may be fastened to the sweat band. The pin consists of a head and two pliable members extending therefrom, to be bent in opposite directions upon the inner surface. The tag, thus secured, may be turned downward beneath the sweat band, as shown in dotted lines. Messrs. C. W. Findley & Co., Philadelphia, are agents for this tag.

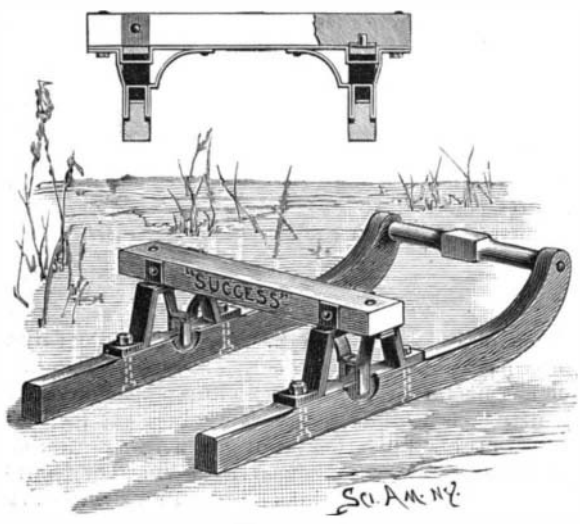
A Premium on Population.

At the last session of the legislature of the province of Quebec a bill was passed authorizing the government to offer a reward of one hundred acres of crown lands to the fathers of all families of twelve or more living children. The prolific character of the French Canadian *habitant* of the rural districts is proverbial, and no sooner was the bill passed than applications for the one hundred acres came pouring in with alarming rapidity. Up to date no fewer than 1,250 fathers whose quivers are full have presented their claims, and the Premier has been obliged to establish a special office in connection with the department of agriculture, with a superintendent whose duty it is to investigate the claims, which must be supported by the *cure*, the mayor, and the doctor of the place. The cause of this high birth rate among the agricultural classes of Lower Canada lies in the fact that early marriages are the rule; added to this the people lead a healthy life, morally and physically, and, though ready money is scarce, wholesome food is plentiful. This bill, which has now become law, will tend to keep the members of large families at the work of agriculture, and while it will act as an *encouragement des autres*, will powerfully assist in the population of the unsettled districts.—*N. Y. Med. Jour.*

THE "SUCCESS" BOB SLEIGH.

In the sleigh shown herewith, styled by the inventor the "Success," the runners are designed to be flexible and free to move to conform to uneven surfaces, while two bearings are furnished upon the sleigh runner, one on either side of the central point. The knees bear on the tops of the runners at two points, and each knee has on its flat upper surface a stud entering a hole in the beam through an apertured plate secured thereon. To the under surface of the beam is secured a cast or forged double standard, as shown in the sectional view, which extends centrally under each knee, and has downwardly projecting forked arms adapted to embrace the upper portion of the runners and prevent them from moving laterally. The sides of the runners are recessed so that the outer faces of the forks lie flush with the inner and outer sides of the runners. Arranged in this way, each runner is free to move independently of the other, and the load is so distributed as to admit of a light and strong construction. When the standards are to be cast they are preferably made in two pieces, but when of wrought metal they are formed as one double standard.

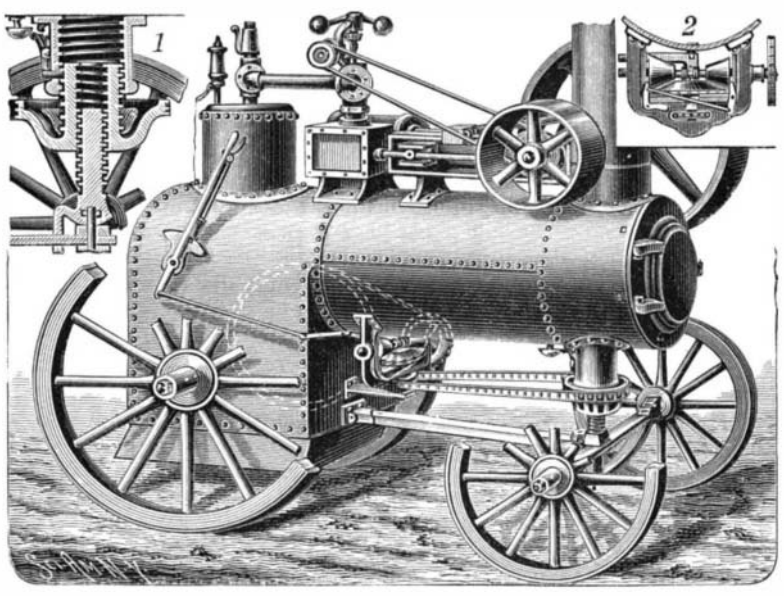
For further information relative to this invention address Mr. C. Nichols, the patentee, Helena, or Messrs. A. J. Davidson & Co., Helena and Bozeman, Montana.



NICHOLS' BOB SLEIGH.

A LEVELER FOR TRACTION ENGINES.

The illustration represents a construction whereby the boiler of a traction engine may be easily leveled when resting upon or traveling over uneven ground. It forms the subject of a patent issued to Mr. Frank Saxon, of Worthington, Minn. Bolted to the under side of the boiler, near its forward end, is an internally threaded drum, fitting within which is the screw-threaded hollow hub of a sprocket wheel, the hub being also internally threaded to fit a vertical screw-threaded support held by a king bolt on the forward axle, as shown in Fig. 1. The arrangement is such that the sprocket wheel will have a double action, screwing the hub into the drum and screwing the support into the drum—or the opposite—thus raising or lowering the boiler. Upon the hub are notches adapted to engage a bell pawl pivoted on the rear of the drum, whereby the bell will be sounded when the boiler reaches a level position, or either extreme in its up and down movement. In a depending bracket secured to the under side of the boiler at its rear is a short vertical shaft carrying on its upper end a beveled friction wheel or pulley, as shown in Fig. 2, the shaft also having a sprocket wheel connected by a chain with the forward sprocket wheel. Mounted in the rear bracket, above



SAXON'S BOILER LEVELING DEVICE FOR ROAD ENGINES.

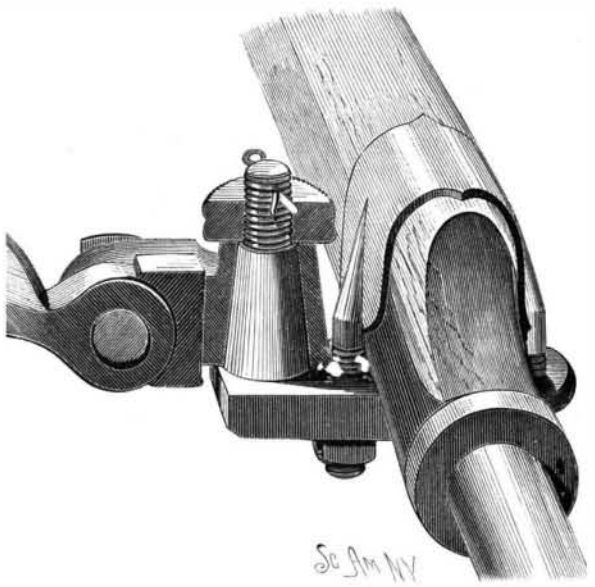
the beveled friction pulley, is a horizontal shaft, longitudinally movable in its bearings, on which are arranged conical friction pulleys, adapted to bear against the opposite sides of the beveled face of the friction wheel, so that when one of the cone pulleys is brought into engagement therewith it will turn in one direction, the engagement of the other cone pulley turning it in the other direction. The shaft has on one end a sprocket wheel, to which power is transmitted by a suitable chain from the engine fly wheel, as shown in dotted lines in the main view, and centrally on the shaft are collars between which fit the bifurcated ends of a bell crank lever, pivoted to the boiler, and connected by a rod with a lever pivoted in easy reach of the engineer. Pivoted to the sides of the bracket are dogs to prevent the engagement of the friction and cone pulleys without the movement of the lever, adjacent to which is a rack with a central notch to hold the lever in position. By moving the lever forward one of the cone pulleys is made to engage the friction wheel, a backward movement of the lever moving the opposite cone pulley into engagement with the friction wheel, thus communicating motion to the forward sprocket wheel to raise or lower the boiler.

Indian Mounds in the Capon Valley.

A region very rich in Indian remains, whence quantities of stone arrowheads and other products of aboriginal manufacture have been collected, is found in the Capon Valley, West Va. Dr. J. H. Porter has reported very rich finds, and it seems as if the region were worthy of special attention from American anthropologists. One of the mounds, a regular ellipse, nearly 200 feet long, is described, but has not yet been excavated. Dr. Porter's work will be the subject of a report by himself to the Smithsonian Institution.

AN IMPROVED THILL COUPLING.

The device represented in the accompanying illustration is simple and durable in construction, and is designed to permit of quickly changing the shafts for



GOSNEY & JONES' THILL COUPLING.

single or double teams, without disturbing the relative positions and connection of the shafts with the shaft box. It has been patented by Messrs. John Gosney and David B. Jones, of Wilmington, Delaware. The clip is attached in the usual manner to the front axle, and on the front projecting end of the clip plate is secured a substantial pin or stud on which is fitted to turn a shaft box, our views representing the shaft box partly cut away to show the pin. This shaft box is held in place on the pin by a nut, the latter being locked in position by a split key passing through the threaded upper end of the pin on top of the nut. The shaft box has the usual fork in which is held the bolt forming the pivot for the eye of the shafts, and in such fork is held a block of rubber to act as an anti-rattler. With this construction the shafts can readily be detached from the clip plate without removing the bolt, by taking out the split key and unscrewing the nut, when the shaft box lifts off the pin and another shaft box can be placed thereon and similarly locked in place.

For further information relative to this invention, address Mr. D. B. Jones, 841 Market Street, Wilmington, Delaware.

AN IMPROVED BRIDLE.

The bridle herewith represented is simple and comparatively inexpensive, and forms a combined bridle and check device, readily convertible for service with either an overdraw checkrein or a side checkrein. It is also adjustable to fit animals' heads of different sizes, making an elegant, light, and very substantial bridle and check. It has been patented by Mr. John H. Rafferty, of No. 12 Green St., Worcester, Mass. Except its metal trimmings and bit, and the brow band, this bridle may be made practically of one continuous leather strap, the checkrein strap being made partly of the leather straps forming the bridle, and stitched fast to the bridle straps. The cheek and face pieces of each side are formed as continuous straps connected at one end to the crown strap, and extending rearward at the other ends to form a checkrein.

W. G. of Ill.—The publication of the ARCHITECT AND BUILDERS EDITION of the SCIENTIFIC AMERICAN was commenced November, 1885. We can furnish you all the numbers from that date for $12. If you order bound copies, they will cost more.

RAFFERTY'S BRIDLE.