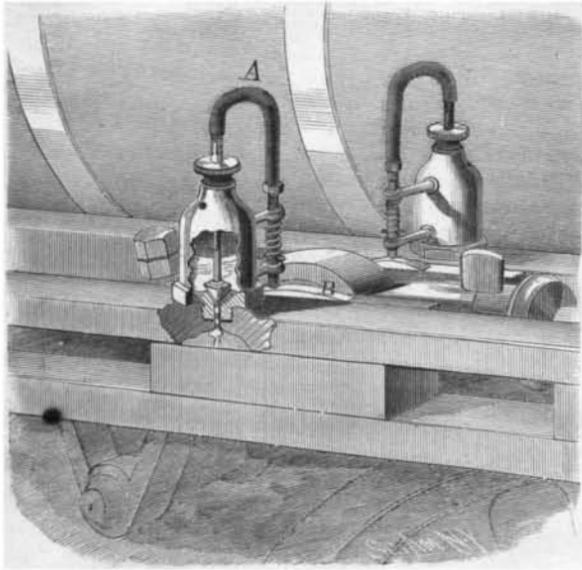


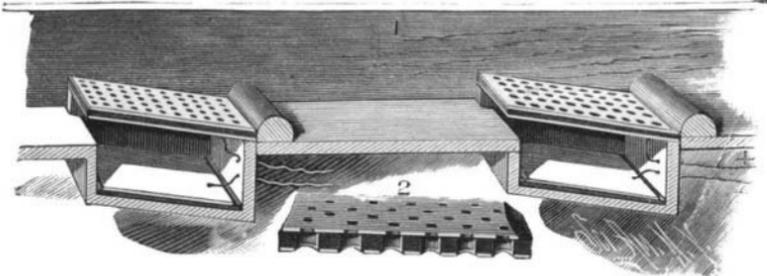
**IMPROVED OIL CUP.**

The engraving represents an invention lately patented by Mr. Albert L. Swift, of 716 Dakota Street, Leavenworth, Kas., relating to that class of self-feeding oil cups in which the spindle may be adjusted for



**SWIFT'S IMPROVED OIL CUP.**

regulating the flow of oil. The oil reservoir is formed with a screw-threaded shank, by which it is secured to the bearing for oiling the shaft, or to the bar for oiling a crosshead. The outlet is adapted to be closed by a spindle having a head formed as shown in the cut; the stem passes through a screw plug in the top of the reservoir, and its upper end is connected by a screw-threaded link with a curved rod, A. To the opposite end of the curved rod is attached a rod held loosely in keepers, and of such length, compared with the spindle, as to reach to the shaft or crosshead. A coiled spring is so arranged as to press the rod downward, so that the head of the spindle will normally close the outlet, and prevent the passage of oil from the reservoir to the bearing. Upon the shaft or crosshead, in line with the rod, is a small cam, B, that serves to lift the rod and its connections, as the shaft

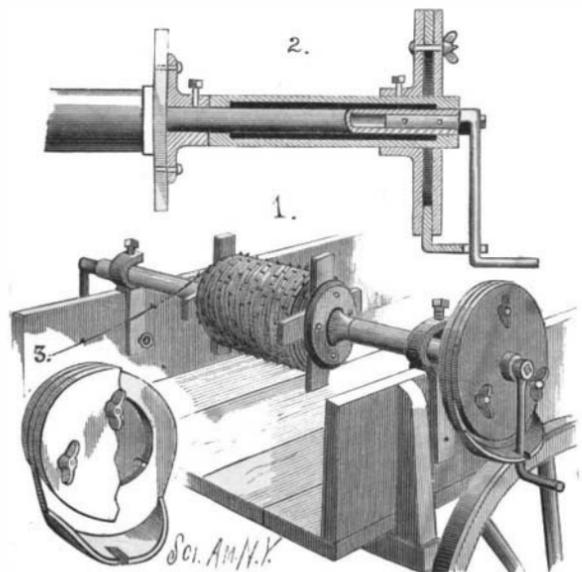


**PIKE'S IMPROVED AMALGAMATOR.**

revolves or the crosshead reciprocates, to permit the escape of oil. A regular feed of oil is thus obtained while the machinery is in motion, and there is no drip or loss while the machinery is quiet. The reciprocating motion of the spindle keeps the oil from hardening in cold weather, and very heavy oil may be used, as the head will force it through the outlet. By means of the screw connection, the amount of oil fed may be regulated. It will be seen that the parts are simple, and may be durably constructed.

**PORTABLE WIRE REEL.**

The accompanying engraving represents a portable wire reel which facilitates the unwinding of fence wire,



**ROBERTS' PORTABLE WIRE REEL.**

either barbed or plain, from spools, and winding it thereon in putting up and taking down wire fences. The reel can be readily and securely attached to the boxes of wagons or other vehicles. Upon the ends of a

tubular shaft are detachable cranks held in place by nuts. Upon opposite sides of, and equally distant from, the center of the shaft are secured two flange collars, one being permanently secured; the other is loose upon the shaft, and is held in place by a set screw. Between the collars is placed one of the spools upon which fence wires are wound when sent to market. The spool is secured to the collars, so that it will be revolved by them. Upon the end parts of the shaft, between the collars and cranks, are placed sleeves, which may have bearing boxes in their ends to lessen the friction (as shown in the sectional view, Fig. 2), and which are designed to serve as handles in holding and carrying the reel and as guards to prevent the clothes of the operators from being injured by the revolving shaft. With this method of construction, the collar secured by the set screw, and the sleeve and crank at that end of the shaft, can be readily detached to allow a spool to be put on or taken off. Near the outer end of one of the sleeves is secured a flanged collar (shown in place in Figs. 1 and 2, detached in Fig. 3), which carries an annular disk held in place by bolts provided with hand nuts. Between the flanged collar and annular disk is placed a second disk resting and revolving upon the bolts. One side of the second disk carries a laterally projecting flange tapered from its middle part toward the ends, and formed with a central recess, as shown, so that the crank will carry the disk with it in its revolution. By tightening or loosening the nuts of the bolts, the disk will be put under more or less friction, so that any desired tautness can be given to the wire as it runs off the spool. Set screws hold hooks to the sleeves; the shanks of the hooks are forked to receive the side boards of the wagon box, and are perforated to receive pins by which the hooks are detachably held to the side boards.

This portable wire reel is the invention of Mr. David A. Roberts, of Creston, Ill.

**IMPROVED AMALGAMATOR.**

This invention is designed to supply a want where fine mineral is lost from gold and silver mills, and also for use in places where the gold is "flour," and cannot be saved by ordinary means. Another use for which it is intended is the washing of tailings which will not pay for remilling, but which may have enough amalgam and quicksilver in them to yield a profitable return by sluicing large quantities through the amalgamator.

A feature of the amalgamator is its adaptability to heavy flumes where gold mining is carried on; the perforated plate—or grizzly, as the miners term it—protecting the working plate or bath of quicksilver below from the heavy gravel or rocks which come down, while the finer stuff is sent through the perforations, and, by the force of the current, is worked into the main box again. The action of the water in passing through the box is such that the finest particles of mineral must come in contact with the amalgamating surface below, while the force of the current is strong enough to prevent any "filling up."

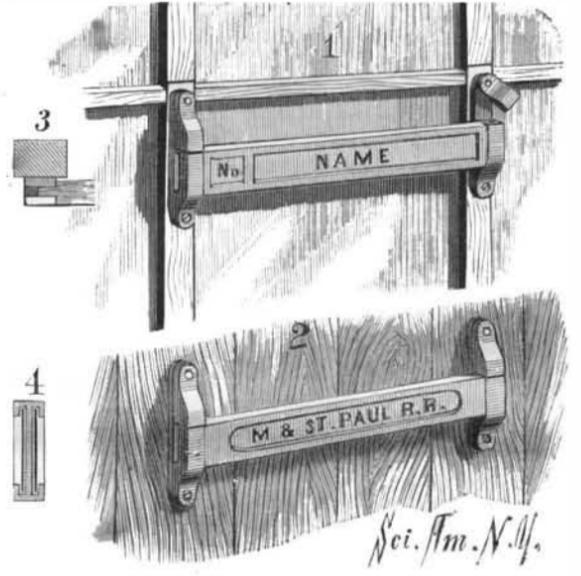
When the two plates are connected with an electric battery—the lower plate being the negative, and the upper the positive—a current is formed, the ore and water passing through completing the circuit. This method has the advantage of confining the force of the electric current within the fixed box, the stream above and below not dissipating it. The application of electricity is simple and exceedingly effective in working on "rusty" gold, and in keeping the quicksilver bright and active for amalgamating.

The construction of this amalgamator, which is the invention of Mr. Edward Pike, of Salt Lake City, Utah, is so clearly shown in the cut as to need but little explanation. Immediately below each riffle is a quicksilver-tight box having an inclination the reverse of that of the flume. Above each of these boxes is a double perforated plate composed of duplicate plates of either copper or iron insulated from each other. In the bottom of each box is an insulated amalgamated copper plate. To these plates the wires are attached, as shown in the cut.

**LABEL HOLDER.**

This device is designed for holding labels on letter boxes, pigeon holes, etc., in such a way that the label can be easily removed, and at the same time cannot drop off or become detached. The metal case is formed with slots in the front and back, and a longitudinal upright partition, as shown in the sectional view, Fig. 4. The labels are slipped into the holder through end slits. When made as shown in Fig. 1, the number appears in the small slot and the name in the large one; this form is designed for letter boxes. In Fig. 2 the names only appear, one on each side of the holder, thus adapting it to be reversed; this holder is intended for use on railway mail cars. The holder is held at each end in a bracket secured on the front of the box or pigeon hole.

The bracket has an upwardly projecting prong on its front edge, forming a pocket for receiving the flat tenon on each end of the holder. The holder is held in place by a pivoted latch on the front of each bracket. Fig. 3 is a sectional plan view of one end. This label holder

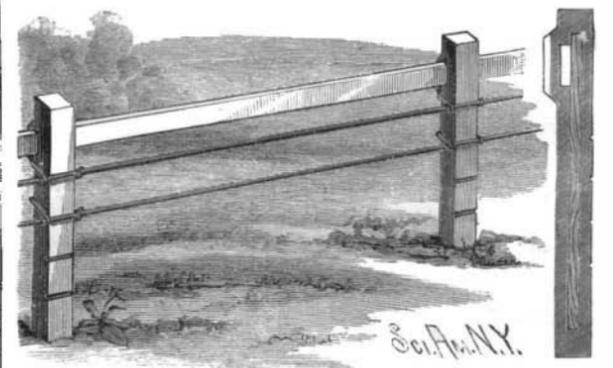


**CANNON'S LABEL HOLDER.**

—the invention of Mr. Edward A. Cannon, of Pensaukee, Wis.—can be easily placed in or removed from the brackets.

**A FENCE POST OF ARTIFICIAL STONE AND WOOD.**

A most substantial fence post, and one not liable to be affected by the weather or deteriorate with age, is shown in the accompanying illustration. It is made of cement or other artificial stone composition, formed around a core of wood or metal extending to within a short distance of the ends of the posts, or even through the stone covering. In the back portion of the posts are pockets or mortises, as shown in the side view, for



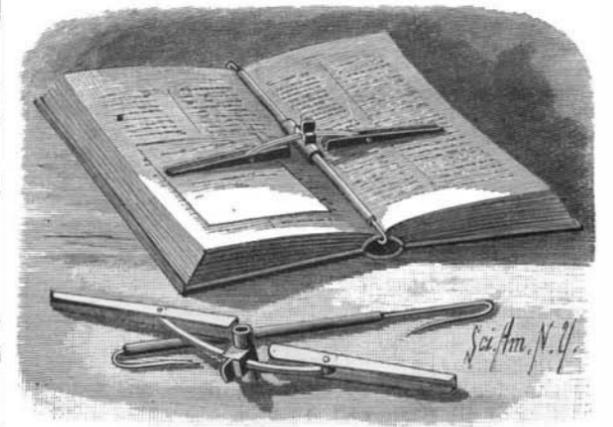
**WHEELER'S IMPROVED FENCE POST.**

receiving the ends of the top rail, where it is desired to have the lower portion of wire, or there may be enough more of these mortises to make a many-barred fence if desired. There are transverse grooves in the artificial stone to receive fence wires, to be held in place by wires passed around the post. The post may be made square, polygonal, or round, as preferred, the core preventing breakage from a blow or transverse strain, and keeping the post from falling to pieces if cracked, while the core itself is preserved by its covering from rot or decay.

This invention has been patented by Mr. Benjamin Wheeler, Jr., of Zanesville, O.

**BOOK AND COPY HOLDER.**

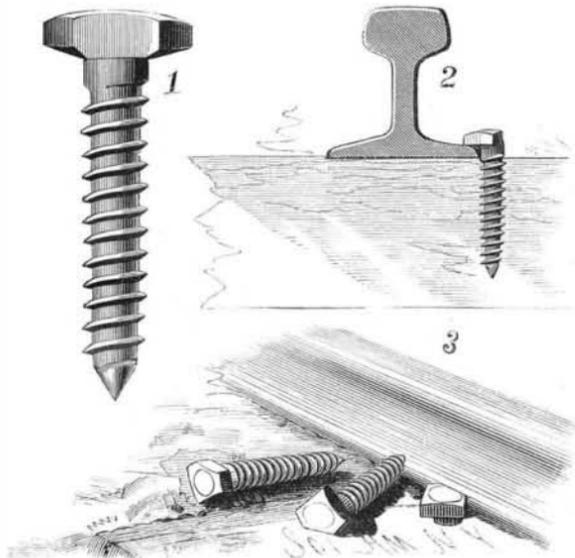
The engraving shows a very convenient and easily applied book and copy holder, invented by Mr. Amos Hockett, of Wilmington, Ohio, and the use of which greatly facilitates the copying of documents and access to the book. The general form of the holder and



**HOCKETT'S BOOK AND COPY HOLDER.**

the manner of applying it to a book are shown clearly in the cut. A tubular rod is provided at one end, with a suitable hook engaging the back binding of the book, and at the opposite end is a sliding hook,

the shank of which slides within the rod. The holder is composed of one or more wires attached to a thimble sliding upon the exterior of the rod; the outer ends of these wires are pivoted between the sides of bars which rest upon and hold the leaves down when the device is in place on the book. The holder proper may be shifted up or down the rod as desired.



HUNTINGTON'S IMPROVED RAILROAD SPIKE.

and manuscript to be copied may be held in convenient position by passing it between one of the holders and the face of the page. By means of the sliding hook, the holder can be adapted for books of different sizes.

Large Vine.

The largest vine in the world is said to be one growing at Oys (Portugal), which has been in bearing since 1802. Its maximum yield was in 1864, in which year it produced a sufficient quantity of grapes to make 165 gallons of wine; in 1874, 146 1-3 gallons; and in 1884 only 79 1/4 gallons. It covers an area of 5,315 square feet, and the stem at the base measures 6 1/2 feet in circumference.

IMPROVED PLATE ROLLING MACHINE.

Scriven & Co., of Leeds, are now manufacturing a useful form of plate rolling machine, Scriven and Tweedy's patent. This machine is specially designed for light work and for shops where it is advisable to have a tool which may be adapted to various kinds of work. Its special features are the arrangement of the movable rollers below the fixed ones, and of a pivoted cheek. It may be used either for rolling flat plates or for bending for donkey boilers or masts and spars. It will be observed that any wear in the roller journals tends to bring the rollers together, instead of, as in the ordinary rolls, to let them drop apart. The common tendency to bending the end of the plate is thus obviated, as

the lower rolls are adjusted to their level by hand. The general arrangement of the machine will be understood from the illustration.

When the machine is required for bending plates, the two outer top rollers are removed. The bushes of all the top rollers are fitted in sleeves; when these are

withdrawn, the cheek is swung round, and the rollers lifted out by the cranes, fixed in snugs at the corners of the machine. It will be seen that tubes of any diameter can be rolled in this machine, and are easily removable by swinging back the cheek as described.

The lower rolls are susceptible of very fine adjustment by the hand wheel and screw gear, and a gauge is placed on the end of the machine to show the exact position of the rolls. The two outer rolls of the lower course are easily removed, if it is desired, to reduce the wear and tear when the machine is being used for small bending work. The guides for the four bottom rollers are so arranged that the bushes can readily be lifted out.

The change of the machine from a flat plate roller to a plate bender can be effected in fifteen minutes. A very important point about this machine is that it is entirely free from any obstruction above the rolls, leaving a clear space for the manipulation of the work. A number of these machines have now been sent out, and all are giving complete satisfaction.

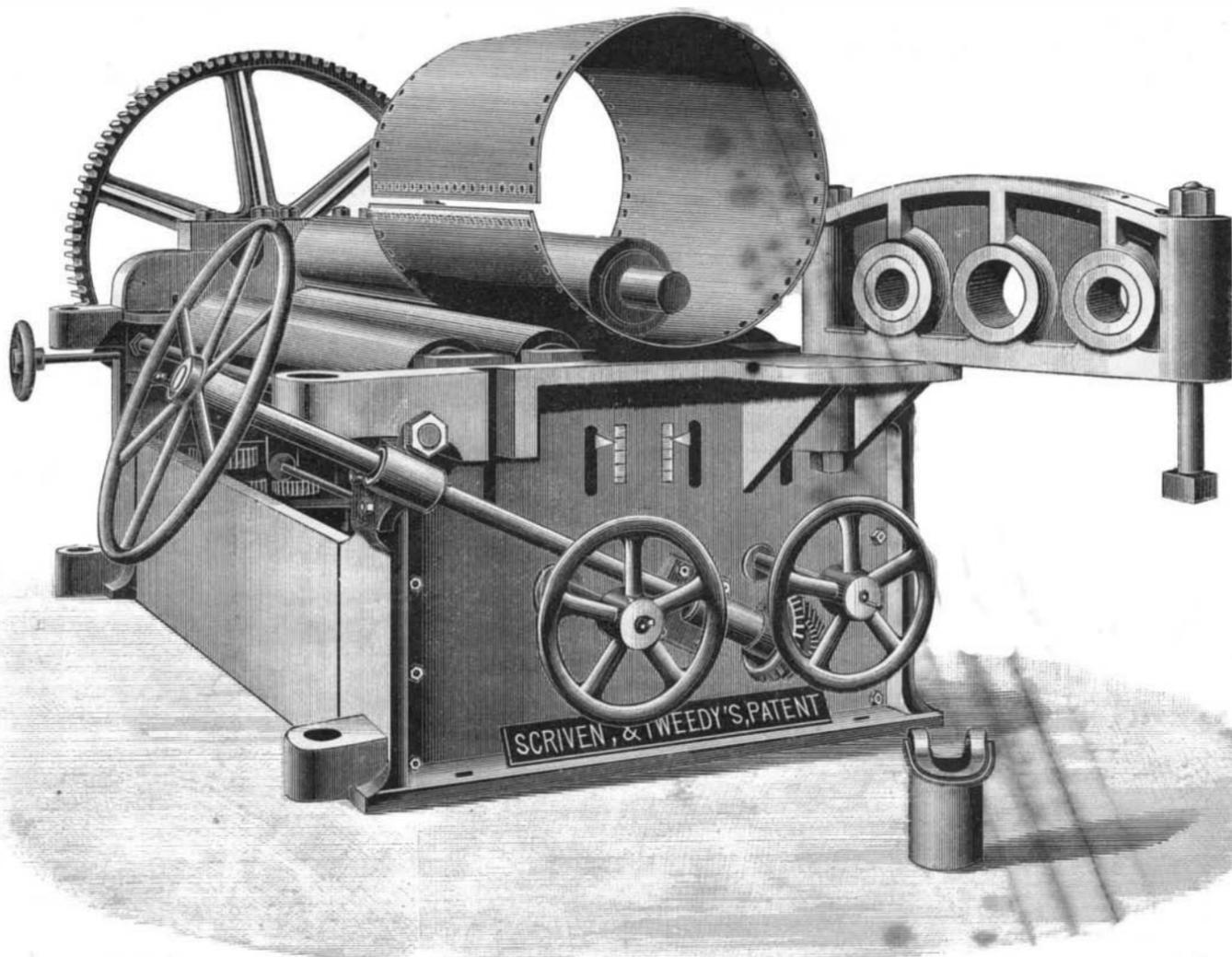
Our illustration shows the machine with the two outer top rollers removed, and the machine prepared for cylindrical bending work.—*Mech. World.*

IMPROVED RAILROAD SPIKE.

The object of the invention herewith illustrated is to produce a cheap, convenient, and effective rail fastening to take the place of the common spikes, which do not at all times hold the rails from spreading apart or tipping over, and to take the place of other fastenings which are too expensive for general use. The form of the spike is clearly shown in each of the figures. To remove the rails for repairs, etc., it is only necessary to give the screw half a turn to the left in order to bring the blank or flat side of the head to the rail, as shown in Fig. 3. The rail can be readily replaced and fastened by simply turning the screw back to place (as shown in Fig. 2), which operation does not split or lacerate the rail. The screw is also convenient for use at guard rails, frogs, and switches, and where the rails are so near together as to preclude the use of drawbars in drawing spikes. The merits of this device will be readily apparent to experienced railroad men.

This invention has been patented by Mr. William S. Huntington, of 143 Lexington Avenue, New York city.

At a recent meeting of the Academy of Sciences, of Paris, M. Duclaux detailed the results of some experiments which he had made to determine the effect of sunlight upon the vitality of microbes. He found that a

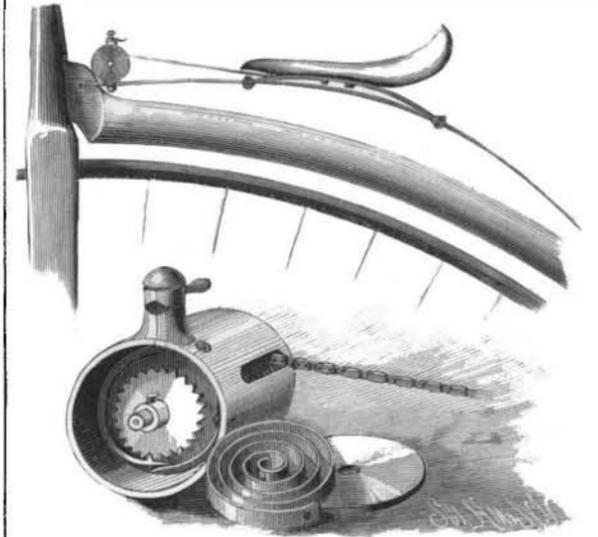


IMPROVED PLATE ROLLING MACHINE.

few hours of exposure to the direct rays of the sun were sufficient to weaken, and finally to destroy, the pathogenic micrococci used in the experiments. He argued, therefore, that the sun was the best disinfectant which we possess, the most universal, the most economical, and the most active.

BICYCLE SADDLE.

Mounted upon the bicycle spring is the saddle carriage, which is provided with rollers, arranged one above and the other below the spring at each end of the carriage. A small chain reaches from the carriage to a drum contained within a case secured to the backbone in front of the point where the spring is secured. The drum is loosely mounted on a shaft extending centrally



STARBUCK'S BICYCLE SADDLE.

through the case. Fixed to the drum are a ratchet wheel and an arbor, about which is coiled a spring, so arranged as to wind the chain upon the drum, and thereby draw the saddle forward. Suitable mechanism holds the drum in any desired position. This consists of a curved arm passing down behind the ratchet and then forward, so that a catch tooth it carries may be brought into engagement with the ratchet. The shank of this arm passes up through the center of a standard formed on top of the case, and terminates in a knob. The top of the standard and under side of a locking block through which the shank passes are so formed that by properly turning the block, the shank and its catch tooth may be raised to lock the ratchet or lowered to permit the drum to turn. The locking device prevents all possible chance of the accidental tripping of the parts.

When the rider desires to adjust the saddle toward the drum, he turns the locking block and depresses the

knob, thereby releasing the catch tooth from the ratchet, when the spring rotates the drum and winds up the chain. When the saddle has reached the proper position, the knob is released and the locking block turned to hold the parts in place. A spring acts to hold the catch tooth against the ratchet. Since the saddle can be moved to any required position upon the spring, the bicycle may be more easily mounted; and when going down steep grades, the saddle may be moved back, thereby preventing the liability of taking a "header." The backbone may be made longer, thus throwing the forks farther

forward, and allowing the rider to get higher up on the wheel when ascending steep grades.

This invention has been patented by Mr. Calvin T. Starbuck, of Wilmington, Ohio.

OIL was struck at Zaleki, O., at a depth of 2,100 feet.