

**A BICYCLE PACKAGE CARRIER.**

A device adapted for convenient attachment to bicycles, and especially designed to carry the ordinary rectangular lunch boxes so often used by workmen, is shown in the illustration, and has been patented by G. Griffith Clapham, of Roslyn, L. I., N. Y. Its main portion is formed of two metallic plates bent upward at their ends to constitute a resilient frame, in which the box is held by the pressure of the spring arms of

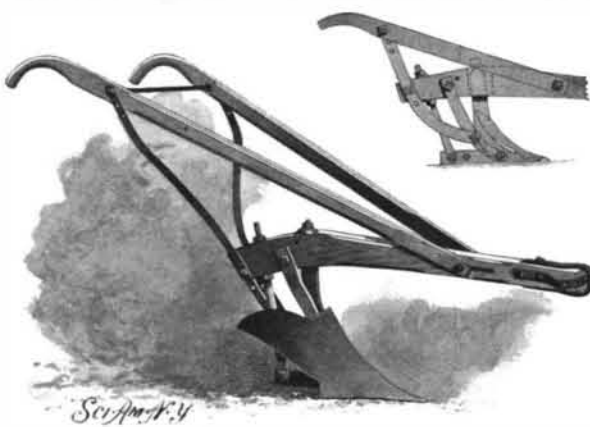


CLAPHAM'S BICYCLE PACKAGE CARRIER.

the frame. It is fastened to the backstays and central brace of the bicycle frame by means of legs, those extending to the backstays being formed of a bar of metal bent into approximately U-shape, and the carrier being rockably held on the horizontal intermediate portion. The ends of the legs have eyes, each adapted to receive a thumb screw carried by clips on the backstays. The leg extending to the central brace is hinged to the front of the frame, and its free end has an eye receiving a thumb screw that passes through jaws of a clip on the brace, permitting the leg to be readily connected and disconnected. To give the parts steadiness, with a slight yielding action, a spring arm attached to the frame plate has a jaw embracing the forward leg, the arm swinging horizontally when released from the leg, and being adapted for engagement with a finger on one of the upright members of the frame when the carrier is folded to one side, as indicated by the dotted lines, which may be readily done by loosening and tightening the thumb screws. The entire device may also be readily disconnected from or attached to the machine.

**AN IMPROVED PLOW.**

The illustration represents a plow of such construction that the point and the landside may be raised and



LAMBERT'S PLOW.

lowered, one independently of the other, the handle of the plow being also independently raised and lowered. The plow also has a peculiar form of stock consisting of side members adjustable on the beam, and a main member pivoted between the side members and capable of forward and rear movement on the beam, as shown more in detail in the small view, the main member of the stock being adapted to carry the share. The improvement has been patented by Henry B. Lambert, of Tangipahoa, La., and the large view is made from a photograph of a plow which the inventor has had in practical use. The stock is preferably made shorter than the ordinary stock, and the handles are pivotally attached thereto, the aperture for the bolt in the beam being horizontally elongated so that the handles may be adjusted backward and forward, while the construction of the clevis enables the operator to give the plow more or less land, and to plow close to cotton, corn, etc., while the horse walks at one side of the line of the furrow. The stock has two side arms curved downwardly and forwardly and a central main arm, all three arms connected at the bottom by a bolt, and the upper ends of the side arms being adjustably attached to the beam, whereby the stock may be raised or lowered at will, while the central main arm may be

secured in desired position, forward or backward along the stock. Two curved uprights or braces extend from the lower portion of the side arms to an adjustable connection with the handle, and also have an adjustable pivotal connection with the beam, whereby the handles may be raised or lowered, and the uprights carried upward or downward to regulate the position of the side arms. The landside is pivoted at its forward end between the sections of the stock, and an adjusting bar, extending upward through the beam, is pivotally attached to the inner face of the landside at its free end. The landside is reinforced at the rear portion of its outer or wearing face by an attached bar, which may be readily replaced when worn out, and the plowshare and point are bolted to a flange secured to the lower portion of the central main arm of the stock. When this arm is moved forward it throws the point of the plow down and the forward end of the beam up, thus causing the plow to take the ground well in grass and trash where ordinary plows would choke, the adjusting bar also enabling the operator to raise or lower the landside to suit the character of the ground being plowed.

**The Census of Egypt.**

The statistics of the census taken last June of what is called Egypt proper—that is, Egypt up to Wady Halfa—have been classified elaborately by Boinet Bey of the Finance Ministry, says The London Times. The main results are as follows:

In 1846, under Mohammed Ali, the population was estimated at only 4,500,000; the census of 1882, which was a most imperfect one, showed over 6,750,000; and last year's, which may be considered as fairly accurate as is practicable, indicates a total population of nearly 9,750,000. Of this total 50.8 per cent are males, and 49.2 per cent females. After deductions for women, children under seven years, and Bedouins, it is calculated that 12 per cent of the males can read and write, the remainder being entirely illiterate. The native Egyptians number 9,008,000, to which must be added 40,000 originally from other parts of the Ottoman Empire and 574,000 Bedouins. Of these last only 89,000 are really nomads, the remainder being styled semi-sedentary.

Of foreign residents there are 112,500, of whom the Greeks are the most numerous, with 38,000; then come the Italians, 24,500; British (including 6,500 Maltese and 5,000 of the army of occupation), 19,500; French (including 4,000 Algerians and Tunisians), 14,000; Austrians, 7,000; Russians, 1,400; Germans, 1,300; and the remainder are divided among 10 different nationalities. The classification according to religion shows nearly 9,000,000 Moslems, 730,000 Christians, and 25,000 Israelites. The Christians include the Coptic race, numbering about 608,000, of whom only a very small proportion profess the Roman Catholic and Protestant faiths. Among the town populations Cairo contains 570,000; Alexandria, 320,000; Tantah (the largest town in the interior of the delta), 57,000; Zagazig and Mansurah (the next in importance) 35,000 each; Port Said, 42,000; Ismailia, nearly 7,000; and Suez, 17,000. From these figures it may be gathered that over 50,000 persons derive their living from the Suez Canal. Assiut (the largest town of Upper Egypt) contains 42,000, and Kenh ranks next with 24,000. The total number of centers of population, comprising towns, villages, farm settlements and Bedouin encampments, is given as 18,129.

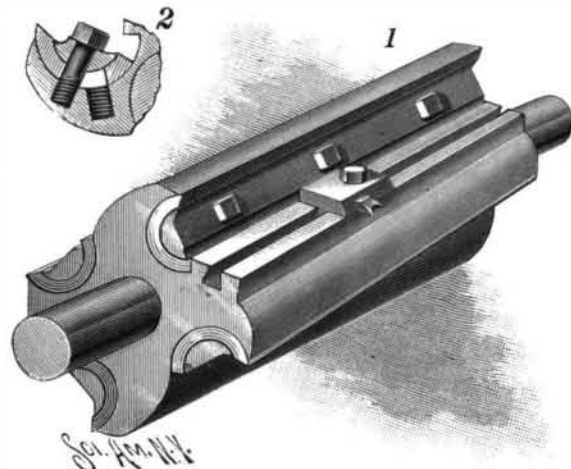
**A Clay-spouting Well.**

The government artesian well at Lower Brule agency is certainly a freak of its kind, says The Omaha Bee. Originally the pressure threw a solid six-inch stream of water to a height of twenty-one feet above the top of the well casing. Subsequently the pipe became temporarily choked up, and at such times the water would not flow at all for periods of two or three days. Then without apparent cause the pipe would suddenly become clear and the water would again spout to the height of twenty-one feet. After continuing for a few days, during which time it almost constantly spouted large quantities of sand, it would once more become choked and cease to flow. This became so frequent and regular that in time the agency employes became accustomed to it and paid no particular attention to the freakiness of the well, which is constantly under their observation. But now the matter has taken another and more peculiar turn. Arrivals from the agency report that, commencing about three weeks ago, the well has been at intervals forcing out apparently endless quantities of blue clay. This in itself is nothing strange, but the manner in which the clay is carried through the pipe is something out of the ordinary. The blue clay entirely fills the six-inch pipe and arises slowly above the top of the casing, exactly as sausages emerge from a sausage machine, until the top is so high in the air that it becomes overbalanced, when five or six feet topples over upon the ground. The continued upward movement of the clay in a few minutes causes more of the column to topple over. This has continued until circular pieces of the blue clay aggregating several hundred feet in length have been

deposited on the ground adjacent to the well, necessitating the employment of men to remove the huge deposits before the top of the casing becomes completely buried. The discharges of blue clay are accompanied by very little water, and the clay, probably from the great pressure required to force it through the well casing, is always as dry and hard as a brick. Another peculiarity is that these eruptions invariably commence a short time prior to the advent of windy or stormy weather and continue until the weather again becomes settled.

**AN IMPROVED WOODWORKING TOOL.**

The accompanying engraving represents a cutter head for planers and other machines, designed to readily cut rough, cross-grained and knotty lumber very smooth, without tearing up the grain or jerking out the knots. The tool is also designed to be run at a high rate of speed, to allow a mill owner to advantageously work up stock that might otherwise be disposed of as culls. The improvement has been patented by George R. Boyd, of Cairo, Ill. It comprises a cylindrical

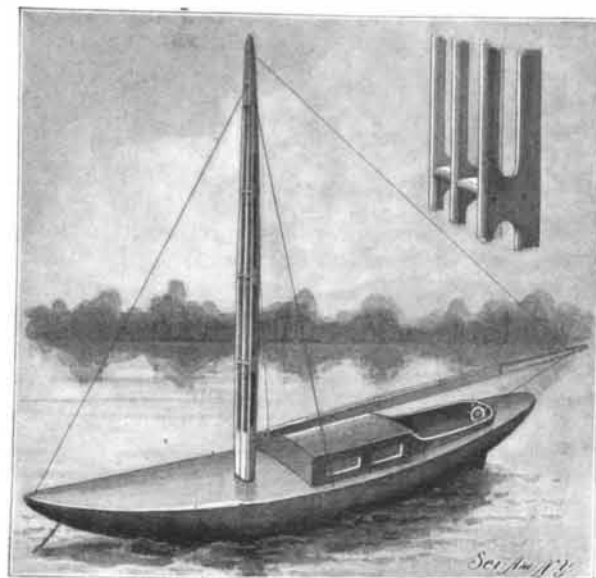


BOYD'S CUTTER HEAD.

body in which are longitudinal segmental grooves in which segmental cutters are adjustably held. Each segmental knife is engaged at its top surface by a correspondingly shaped key fastened in place by set screws extending through elongated slots in the cutters, and the segmental grooves form lips to engage the cutter close to its cutting edge, the outer surface of each lip forming part of the cylindrical surface of the body. The cutting edge of each cutter stands slightly beyond the cylindrical surface of the lip, so that chips are not liable to pass between the lip and the cutter. Each of the keys, as shown in the small section, Fig. 2, has a flange at one side and a cut-away portion at the other side, to admit of the keys being reversed when the cutters are ground down. On two oppositely arranged lips of the segmental grooves are dovetailed projections which carry bead-cutters, engaged by a clamping plate, these cutters being employed to form beads on boards used for ceilings, etc.

**A LIGHT AND STRONG SPAR FOR VESSELS.**

A spar which is designed to offer but little resistance to the wind, and which is yet light and strong, is shown in the accompanying illustration, and has been patented by Thomas Clapham, of Roslyn, L. I., N. Y. The improvement is equally applicable to the mast, boom, gaff, bowsprit, and consists in building up these parts of longitudinal strips, instead of making them solid, as heretofore customary. The



CLAPHAM'S SPAR FOR VESSELS.

strips are preferably rounded at their edges, and the spars and mast may have slots or openings, as shown in the small figure, to further reduce weight and lessen the wind resistance, the strips being pressed apart by blocks to increase their strength and stiffness.