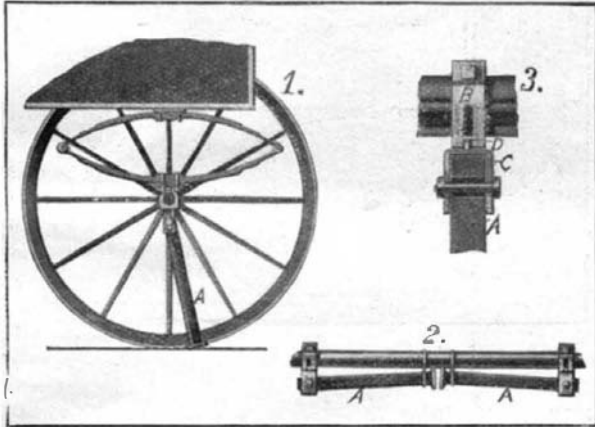




AN IMPROVED VEHICLE JACK.

An improved vehicle jack has recently been invented, which is of a type adapted to be fastened to and form a permanent attachment for a vehicle. The jack is so mounted that it can easily be brought into operative

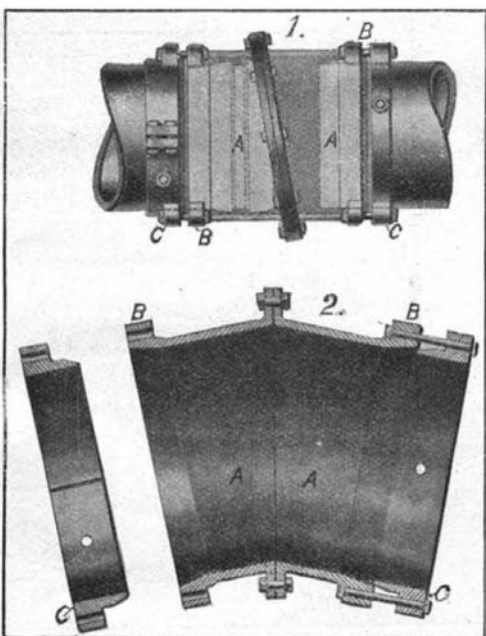


AN IMPROVED VEHICLE JACK.

position, and carried to inoperative position with little work on the part of the operator. In the accompanying engraving the jack is shown at A. It will be observed that it comprises two legs hinged to the axle of the vehicle. The method of hinging these legs to the axle is shown in Fig. 3. A collar B is secured to the axle, and this is provided with an undercut slot. Each leg A is journaled on a transverse bolt in a yoke C. The latter is formed with a pin D adapted to enter the slot in the collar B. The head of this pin D engages the undercut portion of the slot. When the jack is not in use the legs are folded up against the axle, to which they are secured by means of hooks, as shown in Fig. 2. In the operation of the jack the legs are detached from the hooks and swung laterally on the pins D as a pivot, after which they are dropped downward, turning on the bolts in the yokes C. To lift the vehicle wheels it is only necessary to back the vehicle, when the wheels will be raised by the legs. A patent on this improved vehicle jack has recently been secured by Mr. Anthony Gordon, of Sourisford, Arthur Municipality, Manitoba, Canada.

COUPLING FOR LARGE PIPES.

Pipe lines lying on the bed of a river frequently become broken from various causes, such as the dragging of an anchor along the bottom of the river, and when the connecting ends of the pipe sections become broken, it is necessary to cut away a portion of the ends of the pipe and connect the sections together by means of a sleeve, which will make up in length for the portions that have been cut away. This sleeve must be applied when the pipe sections are in their places under water, and the couplings should be so constructed as to enable the pipe sections to lie evenly on the bed of the river, otherwise a continuous strain is exerted on the joint, which is liable to break the joint. The accompanying drawing shows a simple method of making such a connection under water between pipes of large diameter. The coupling consists of two similar cylindrical sleeves A, formed with flanges on their adjacent ends, extending in a plane inclined to the axial line of the sleeves. These flanges

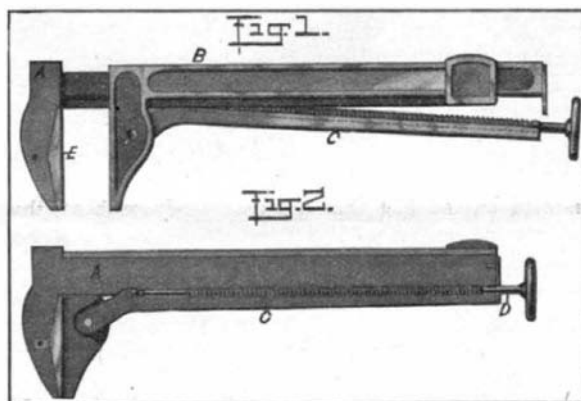


COUPLING FOR LARGE PIPES.

are provided with bolt holes equally spaced thereon, so that the sections may be rotatably adjusted on each other before being bolted together, so as to extend in any line between a straight line and a right angle. In the illustration Fig. 1 shows a straight line coupling, while Fig. 2 shows the method of coupling the sleeves at an angle with each other. This adjustment permits of coupling the sections so that they will conform to the contour of the ground upon which they lie. A series of lugs B are formed on the outer ends of the sections. Bolts which pass through these lugs are adapted to engage apertures in similar lugs formed on the sections C. The outer ends of each sleeve section and the inner edge of each set ring are beveled. In use a soft metallic packing is placed between the set ring and the sleeve, and is compressed firmly against the end of the pipe section by tightening the bolts which pass through the lugs B. A patent on this improved type of coupling has recently been granted to Messrs. Erick T. Christensen and David M. Tulloch, Hanover Square Building, New York city.

QUICK-ACTING WRENCH.

Pictured in the accompanying engraving is an improved wrench of such design that the jaws can be quickly adjusted to the work, after which they may be moved to clamp the work as tightly as may be desired. The wrench consists of a shank A with a fixed jaw formed thereon. Fitted to slide on the shank is a sleeve B, which is formed with inwardly-projecting flanges adapted to engage a pair of grooves in the shank A. At the end of the shank a collar is secured, which serves to prevent the sleeve B from being dis-



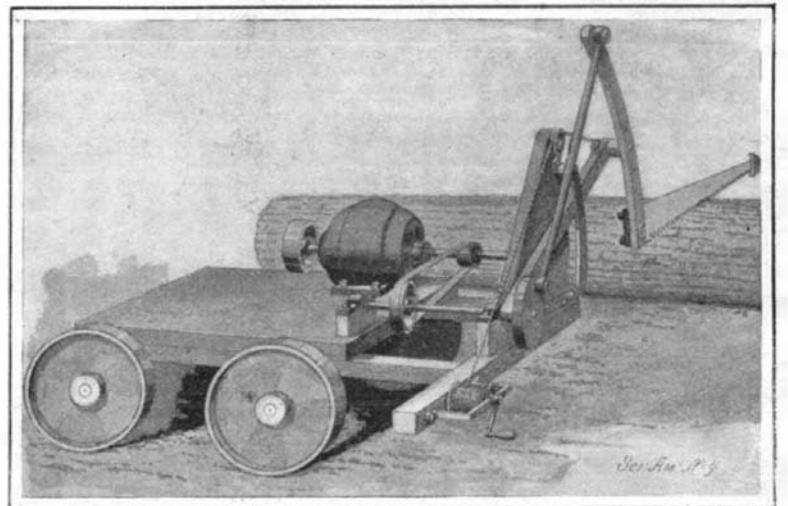
QUICK-ACTING WRENCH.

engaged from the shank A. The sleeve B carries the movable jaw of the wrench. Pivoted to this movable jaw is an auxiliary shank C. An adjusting screw D is adapted to engage a thread formed partly in the main shank A and in the auxiliary shank C. This screw is provided with a head at its inner end, which is seated in a groove in the shank C. In use, when it is desired to move the jaw of sleeve B quickly toward the fixed jaw, the shank C is swung downward, as shown in Fig. 1, so as to disengage the screw D from the segmental thread in the shank A. After the jaws have been moved to approximately the position desired, the shank C is swung up toward the shank A and held in engagement therewith by means of a hook, which is passed around the body of the screw D. Thereupon, by turning this screw the jaws may be drawn tightly into engagement with the work. The jaw A is provided with a serrated surface adapting it for use as a pipe wrench. In order to convert the wrench into one of ordinary form a plate E is provided, which is fitted into the jaw A. A tongue formed on this plate projects into a recess in the jaw, and a transverse adjusting screw which passes through the tongue serves to hold the plate firmly in place. Mr. C. M. C. Kirk, of Nahcotta, Wash., is the inventor of this improved wrench.

PORTABLE SAW-OPERATING MECHANISM.

A patent has recently been secured by Mr. W. K. Gor-

don, of Thurber, Tex., on a mechanism for operating cross-cut saws whereby logs, timbers, trees, or the like may be cut into blocks or lengths while the wood is flat upon the ground. The mechanism is supported on a wheeled-carriage, the wheels turning in planes at right angles to that of the saw so that the carriage may be moved along the log to bring the saw to a new place for cutting. The saw is operated by a gasoline or electric motor, mounted on a carriage.

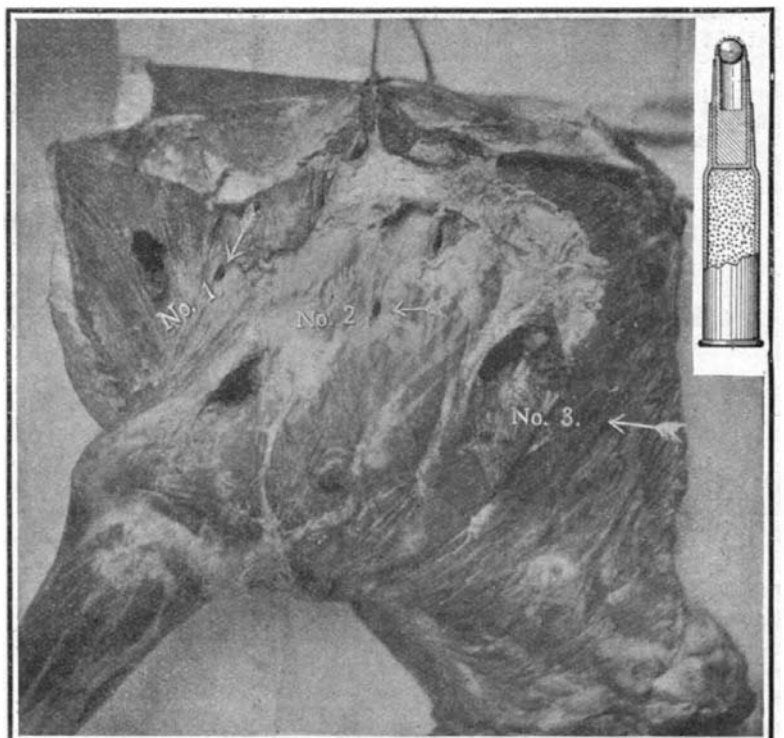


PORTABLE SAW-OPERATING MECHANISM.

The power is transmitted by means of belts and pulleys to a crank shaft on which a disk is secured. A pitman engages a crank pin on this disk and its opposite end is pivoted to a curved or segmental bar. An arm is adjustably pivoted to the bar at one end, while the other end is mounted on the crank shaft. The lower end of the segmental bar carries the saw which is pivoted thereto. A cable attached to the arm passes over a pulley and to a winding drum. This provides means for lifting the saw when it is desired to move the mechanism about, and a stop pin in the bar projects under the saw and prevents it from swinging down to the ground. In operation the machine is placed to bring the saw in position for cutting the log. The ratchet mechanism on the winding drum is then released, permitting the saw to drop down on the log. At the outer end of the saw is a shoe formed with a curved under face. Now, when the motor is operated the pitman will cause the segmental bar to oscillate on the outer end of the arm as a fulcrum, and thus move the saw back and forth. As the cutting proceeds the saw will move downward on the crank shaft as a fulcrum. The shoe on the end of the saw serves first to weight the saw and assist it in its downward movement, and then, by engaging with the ground, to prevent the saw teeth from touching the ground and being injured.

A NEW FORM OF MUSHROOM BULLET.

The small-bore, high-power rifle that is in general use to-day was originally designed as a military rifle, the object of which is to wound or maim at extreme range; and owing to its high velocity, the trajectory is so flat that the raising or changing of sights under ordinary circumstances is unnecessary. Sportsmen, seeing the advantage gained by great velocity, were quick to adopt this type of rifle. It was found that by inverting the jacket of the full metal-jacketed bullet



A NEW MUSHROOM BULLET AND THE WOUNDS IT MAKES.