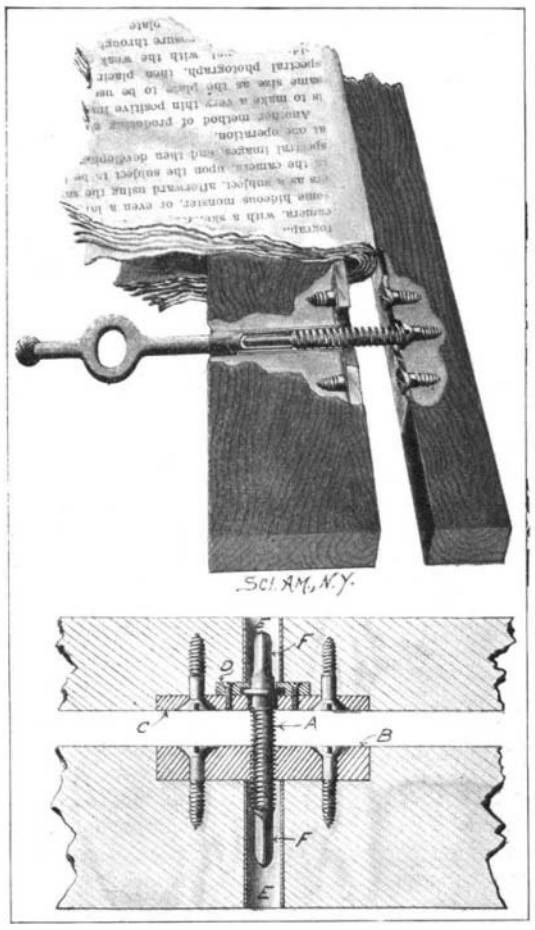
IMPROVED PAPER FILE.

A patent has recently been granted to Mr. Edmund W. Sandstedt, of Hankaw, China, for a paper file



PAPER FILE WITH NO PROJECTING PARTS.

which cannot be opened without the use of a key. This, in a great measure, will prevent an unauthorized person from removing papers from the file, at least without tearing them out. The construction of the device further offers the advantage of having no projecting parts to mutilate the papers, scratch furniture, or catch in the clothing to the inconvenience of the reader. The file comprises two rods held together at each end by a locking device and designed to engage opposite sides of the paper. Two forms of locking devices are illustrated which differ from each other only in the fact that the construction shown in the large detail view is reversible, and this construction may be described as follows: An adjusting screw, *A*, is secured with a swivel connection to one of the rods; this is effected by seating the collar on the screw between the plates *C* and *D*. A plate, *B*, is fastened to the other rod and is provided with a tapped pole adapted to engage the adjusting screw. The opposite ends, *F*, of the adjusting screw project into the openings *E* of the rods, and are made angular to fit the key. When it is desired to remove or add a paper to the file the rods can be separated by fitting the key over one of the adjusting screws and turning the screw to feed out through the plate, *B*. The adjusting screw at the opposite end is then similarly turned outward until it also disengages with the plate, *B*. The rods are thus released from connection with each other, and the necessary changes in the file are made. From the fact that adjusting screws are used for locking the rods together, it is obvious that a single sheet may be as firmly held in this paper file as a month's issue of daily papers.

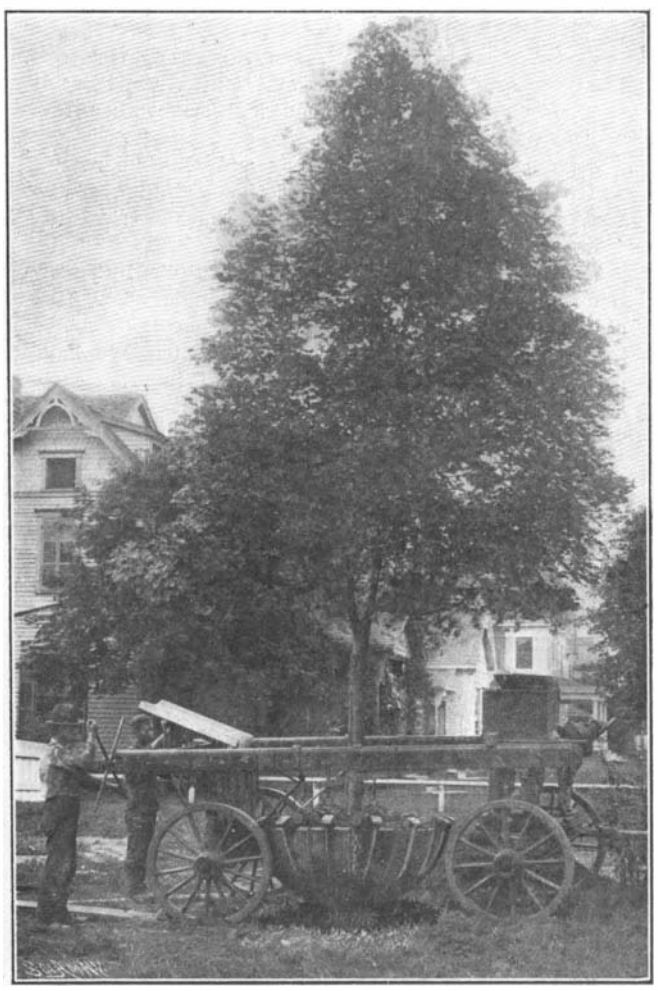
A NEW METHOD OF TRANSPLANTING LARGE TREES.

Several months ago the Scientific American described and illustrated apparatus invented by Mr. Henry Hicks, of Westbury, Long Island, for taking up and transplanting large trees. Another system has been invented and is being quite extensively utilized in the West. It is the idea of Mr. John A. Wilkins, of Indianapolis, but in utilizing it the trees are transferred from bed to bed in midsummer in preference to the spring or fall, the usual seasons preferred. Mr. Wilkins believes the tree is in its most flourishing condition during the summer, and this is the best time for transplanting, as there is less danger of checking its growth or injuring it in other ways.

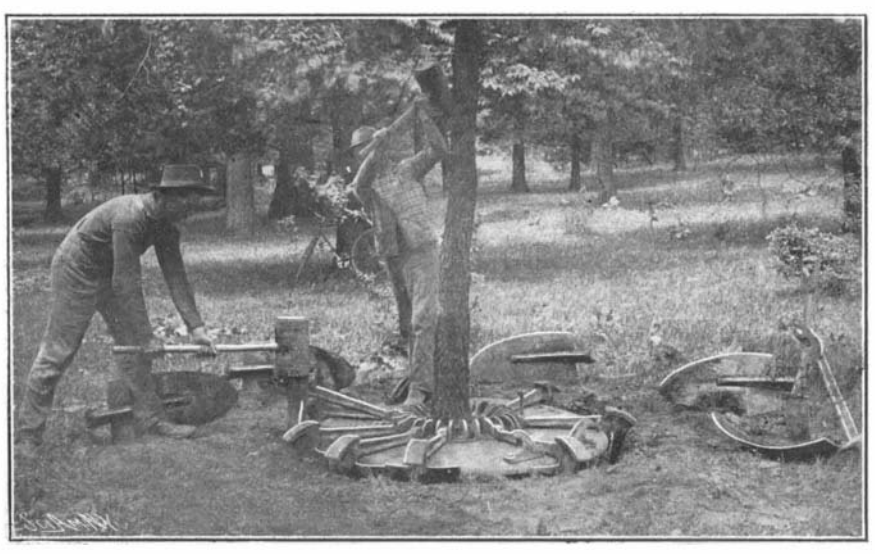
The Wilkins plan is quite similar to that followed by florists in transferring potted plants, special care being taken to avoid disturbing the earth immediately about the roots of the tree, as well as to avoid injury to the smaller roots and tendrils. By the Wilkins invention the tree which is being transplanted is never handled in any other way than from its base. In short, to explain the method in a nutshell, it may be stated that the earth and roots are incased in a steel basket of any required size, which corresponds to the flower pot of the florist. The first operation in transplanting a tree by this method is to thoroughly wet the earth about the tree, softening the ground. Next in order is the placing in position of the steel basket, which is made of curved steel shovels. A medium-sized machine, inclosing earth and roots, six feet in diameter, is composed of fourteen shovels made of five-sixteenths-inch plow steel, each of the shovels being hinged to a steel platform surrounding the tree. After the shovels have all been driven into place they are firmly secured to the platform by crossbars, by which the whole tree can be lifted from its bed.

The lifting apparatus is then adjusted about the tree, and two men lift the tree out of the ground by screw power, raising it to its position in the transporter. The operatives have complete control of the machine at all times, and the tree may be raised, lowered or held at will. After the tree has been removed from its old abiding place, it is laid back on the cushion of the skeleton wagon, which is to convey it to its new location, and is thus transported through the streets of the city, being at such an angle that the branches pass under telephone and telegraph wires and other overhead obstructions. Incidentally it may be noted that the tree rests so lightly upon the cushion that there is no strain whatever upon the body of the tree.

Upon arrival at its destination, the tree is slowly lowered into the hole which has been prepared for it, and after the transporter has been removed, the earth is filled in and tamped about the basket. When all is secure, the shovels are withdrawn, leaving the tree fully embedded without the loss of any of its original surrounding earth containing its fibrous or hair roots.



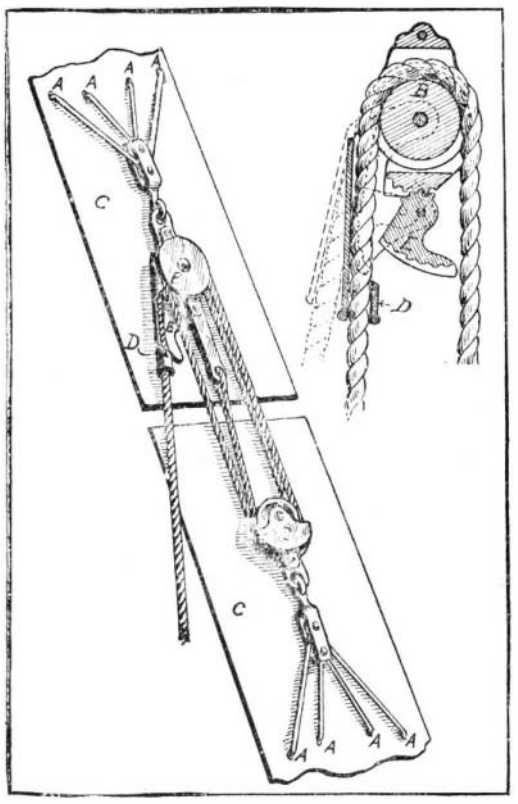
The Tree on the Wagon.



Driving in the Blades.

A NEW METHOD OF TRANSPLANTING LARGE TREES.

Among the advances in practice to be noted in this latest tree transplanter is the operation of the lifting and conveying device according to the points of the



IMPROVED BELT STRETCHER.

compass, rendering it possible to plant the tree in exactly the same position in which it stood originally.

As indicated by the illustrations, the vehicle for conveying the tree is built with heavy framework, which can be raised and lowered by the screws upon the trucks. The power is so adjusted that two men can handle a tree ranging from 30 to 40 feet in height without difficulty. Maples, elms and other shade species, having trunks ranging from 5 to 7 inches in diameter, have been transplanted by this process in the suburbs of Indianapolis, and though the operation was performed during the summer, they are apparently in as good condition in their new bed as before being moved.

BELT STRETCHER.

We illustrate herewith an improved device for drawing together the ends of belts so as to facilitate lacing them together. The device comprises the combination, with a tackle, of peculiarly constructed grippers, which are arranged to engage the end portions of the belt, so that by means of the tackle the ends may be brought together and held during the lacing operation. In using the device the ends of the belt, *C*, as indicated, are perforated by an awl, so that the points of the gripping fingers, *A*, may be easily engaged with the belt. The fingers are spread out so as to place the strain uniformly on the belt, and by having the ends of the fingers in different transverse lines, the puncture of the belt in a straight line across its width is avoided. This, therefore, enables the belt to be perforated for the engagement of the gripping fingers without materially weakening its strength. After the gripping fingers have been properly engaged with the belt, the fall of the tackle should be drawn on, thus drawing the blocks, *B*, and consequently the ends of the belts, *C*, together. Then by operation of a locking device, *D*, the movement of the blocks apart is prevented, so that the lacing or fastening operation may be conveniently performed. Any suitable locking device may be employed, such as that illustrated in the sectional view, in which the cam, *E*, is adapted to engage with the fall and prevent its backward movement. The dotted lines show the positions assumed by the different parts when the cam is thrown into gripping position against the rope.

It will be observed that the stretching device does not occupy, when in operation, a position outward from the side edges of the belt. This is particularly advantageous in the practical employment of the device, since it enables the operation to be carried on in crowded or confined places, particularly in belt housings and the like, such as are common in grain elevators. Further, by employing the tackle, the belt may be drawn together without the operation of any such device as a crank or other mechanical element requiring considerable room for its operation. A patent for this belt stretcher has recently been granted to Mr. D. R. Davis, Nemaha, Iowa.