

Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME IX.]

NEW-YORK MARCH 25, 1854.

[NUMBER 28.

SCIENTIFIC AMERICAN,

PUBLISHED WEEKLY.

At 128 Fulton street, N. Y. (Sun Buildings.)

BY MUNN & CO.

Agents,
 Federhen & Co., Boston.
 Stokes & Bro., Philadelphia.
 Cook, Kinney & Co., San Francisco.
 Le Count & Strong, San Fran.
 Avery Belford & Co., London.
 E. G. Courtenay, Charleston.
 Dexter & Bro. New York
 B. Dawson, Montreal, C.E.
 M. Boullomet, Mobile, Ala.
 E. W. Wiley, New Orleans
 E. G. Fuller, Halifax, N. S.
 M. M. Gardissal & Co. Paris
 S. W. Pease, Cincinnati, O.

Responsible Agents may also be found in all the principal cities and towns in the United States.

TERMS—\$2 a-year:—\$1 in advance and the remainder in six months.

Joints of Belting.

MESSRS. EDITORS—I have seen several articles lately, respecting the joints of endless belts for driving machinery. I have had considerable experience with machinery for the last thirty-five years, and have seen belts pieced in a variety of ways. I have seen them, when large, scarfed and then small bolts and nuts put through them with washers and plates under the heads and nuts. I have also seen rivets used instead of bolts; also rivets with plates next the leather, the whole length of the joint. I have great objections either to bolts or rivets, as they project, and are liable to catch and tear out, and I have had my hands cut with them a number of times. I have also seen some laced with sheepskin thongs, and others, after being scarfed, stitched with waxed ends with glue between them, which is a very good plan. But the best plan, in my opinion, for a permanent joint, is to scarf the ends as usual, then glue and bind them together with hand screws, or otherwise, until the glue is set, then apply as many shoemaker's pegs as are necessary, dipping each into glue before driving in. The pegs are then pared smooth, on both sides, and the joint made of an equal thickness with the rest of the belt. When the belt is exposed to a damp atmosphere, some water-proof and pliable cement would be preferable to use, but if not, I will warrant this joint to last as long as any other part of the belt. A MACHINIST.

Rochester, N. Y.

Apples at the South.

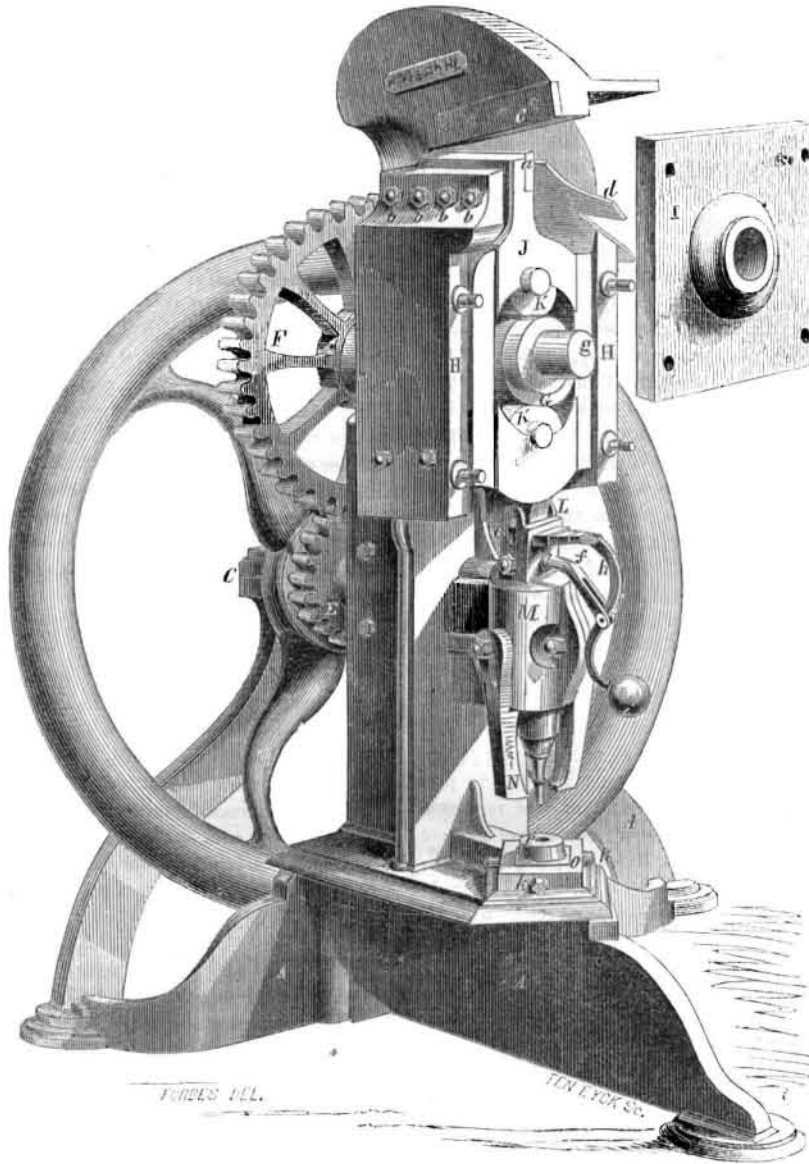
The cultivation of this refreshing, wholesome, palatable fruit, is no longer confined exclusively to our Northern States. Of late years it has been introduced into the Southern section of our country, and Georgia, beyond all her neighbors, is said to be entitled to the credit of raising many fine varieties of seedling apples. At a recent State fair held in Georgia, more than sixty varieties of native apples were exhibited, including some of the most desirable kinds. The Georgians claim that apples grow larger and fairer there than in New York State. The Cherokee Indians have been instrumental in producing a number of excellent seedling varieties there, as they were acquainted with no other means of propagation than by planting the seeds. Northern varieties grow as well at the South as at the North, but generally ripen too early for preserving or transporting to market. It is asserted that the justly vaunted Early Harvest, and Newtown Pippin will not compare in size, flavor or beauty with some varieties, of Georgia.

New Cart.

A French newspaper gives an account of a newly discovered plan of building carts and other vehicles. The new vehicle has four wheels, the foremost pair of which come about the middle of the horse's body; the weight is thrown on the axles, and the vehicle is so constructed that part of it covers the neck.

Designs for calicoes are obtained in France by means of the photographic process, which is reduced and transferred by means of a pantograph on the wood block, metal plate or cylinder.

PUNCHING AND SHEARING MACHINE.



The annexed engraving is a perspective view, with the front plate removed, for the purpose of showing the roller eccentric and yoke, of a machine for punching and shearing iron, for which a patent was granted to Ozias J. Davie and Thomas W. Stephens, of the City of Erie, Pa., on the 4th of last October. The nature of the invention consists in disconnecting the punch or its stock from the yoke by an automatic movement at each operation of the machine by means of a weight, spring, or their equivalents, acting in connection with a wedge or its equivalent, in which position the punch ceases to operate until the metal to be punched is properly in place, when, by a slight touch of the operator upon the rising of the punch, the connection between them is again made, and the punch is thrown into operation; by this means, allowing the machine to continue in motion, whilst the punch is only brought into action when the sheet of metal is properly placed for it.

The base, A, and upright part of the frame, may be cast in one solid piece, and on the rear of this frame is attached a trussed pillow block, C, in such position as to form a proper bearing for one of the journals of the shaft which carries the fly wheel, the other journal of the shaft having its box or bearing on the frame. On the same shaft with the fly wheel is placed a spur gear, E, meshing with the cog wheel, F, on the shaft, G, of the eccentric, G, which shaft is also provided with suitable bearings, in which it may freely turn. In the front part of the machine the side plates, H, and the front plate, I, form a square chamber in which is placed and operated a yoke, J,

in the top and bottom of which yoke are placed the friction and pressing rolls, K K, in suitable bearings, said rolls being provided with small journals to avoid friction. The eccentric, G, is placed between the friction rolls, the shafts or journals of all three standing perpendicularly one over the other, and as the eccentric, G, turns upon its bearings which are in the frame, it alternately raises and depresses the yoke by means of the rolls, K K, having their bearings in the yoke, and is always in contact with the surfaces of both rolls, so that the reciprocating movement of the yoke is without jar, being both raised and lowered by the eccentric, and consequently with the same power. On top of the yoke may be placed one of the blades, a, of a pair of shears made adjustable by the set screws, b, the other blade, c, of the pair being permanently fixed to the overhanging part of the top of the frame. A gauge for the shears may be applied in any well-known manner, and as they are common to other machines for a similar purpose may not be herein described. The pieces cut by the shears are thrown off by the guard plate, d. To the lower part of the yoke, J, is attached by a slip joint, e, the punch-stock, L, which carries the punches, and on said stock is arranged a curved arm, f, in which is hinged a curved lever, h, having on its lower end a ball or weight, i, and on its upper end a flat wedge-shaped key, which, when forced into the slip joint, e, between the yoke and the punch stock, completes the connection and throws the punch into operation. When the yoke is being raised up, the key becomes loosened (the weight or pressure of the yoke and rolls being removed from it), and by means of the weight,

i, on the end of the curved lever, draws out said keys, when the punch will remain inoperative, whilst the machine continues to run until the operator has placed the sheet of metal to be operated upon in its proper position, when, by slightly raising the ball or weight, j, the key is again thrown in to form the working connection, and the punch then acts. This gives the operator sufficient time, without regard to the motion of the machine, to properly place his sheets or piece of metal to be operated upon. M is the punch stock guide, and N is an adjustable gauge for holding down the piece whilst the punch is being withdrawn: O is the die stock, and P the die therein, made adjustable to the punch by the set screws, k.

By this arrangement of rolls and eccentric in a yoke, we get immense power, which, when at its utmost, is in a line perpendicular over the punch; and as the rolls and eccentric are always in contact with each other, and the rolls in contact with the yoke, there is no sudden jar—the shears and punch being raised and depressed alternately by the eccentric, avoids the necessity of springs, straps or any other device for raising the punch or opening the shears.

The claim is for "disconnecting the punch stock from the machine automatically at each operation of the punch, by means of the weighted lever and key, or their equivalents, for the purpose of affording the operator time to place his sheets without regard to the motions of the machine, when, by a slight movement of the ball or lever upon the rising of the punch the connection can be again formed, as described."

There is one of these machines on exhibition at the Crystal Palace, and a medal was awarded to its exhibitors. More information respecting it may be obtained from Little, Kepler & Co., assignees and manufacturers, Erie, Pa.

Georgia Central Railroad.

WOOD AS FUEL.—The nineteenth report of the president, and the superintendent of the central railroad Georgia, presents a very favorable aspect of its condition and management, although the receipts for the past year do not amount to so much as those of 1852, but this is all fairly accounted for, there having been no less than a decrease in the freight of cotton amounting to 48,300 bales. This company intends to build their own cars after this, as they have found, they can do so for less than to import them from a great distance. There are 45 good engines belonging to this company; the total number of miles run by them last year was 509,169. The amount of wood used for fuel, was 8,831 cords—nearly a cord for every 58 miles—a great quantity truly. All railroads, must come to coal yet, and the sooner the better.

The First Large Steamboat in Paris.

A screw steamer of 700 tons burden managed a short time since to find its way from Bordeaux up the Seine, and under the bridges, even to the quays of Paris.

It was constructed with a movable "center-board," to be raised in the rivers, and let down when out at sea. The Emperor and his Minister of Marine visited and minutely inspected her. She draws but six feet of water with her full cargo aboard; is said to be a good sea boat; made a rapid voyage up the Seine, and, it is thought, may compete successfully with the railroad in the Bordeaux river trade.

The Material Fine Gloves are made of.

We have seen it stated in a great many of our cotemporaries, that monkey hunting is a regular branch of business in some parts of South America, for the simple purpose of obtaining their skins, which are sold for making fine gloves—surnamed "French kid."