

A NEW MECHANICAL MOVEMENT.

The annexed engraving illustrates a new mechanical movement for transmitting rotary motion, in substitution of bevel gears, the invention of Mr. Melville Clemens, now of Philadelphia, Pa. The apparatus is so constructed that absolutely the same angular velocity of the driving shaft is transmitted to the driven shaft, with positive exactness and avoidance of back lash; and the joint makes a self-adjusting, flexible coupler, enabling the plating of the connected shafts at all desired angles of deflection, from a straight line up to and beyond a right angle.

Compared with bevel gears, especially for heavy work, the present device offers the advantages of being noiseless and of possessing greater strength, durability, and safety, besides its complete range of shaft divergence.

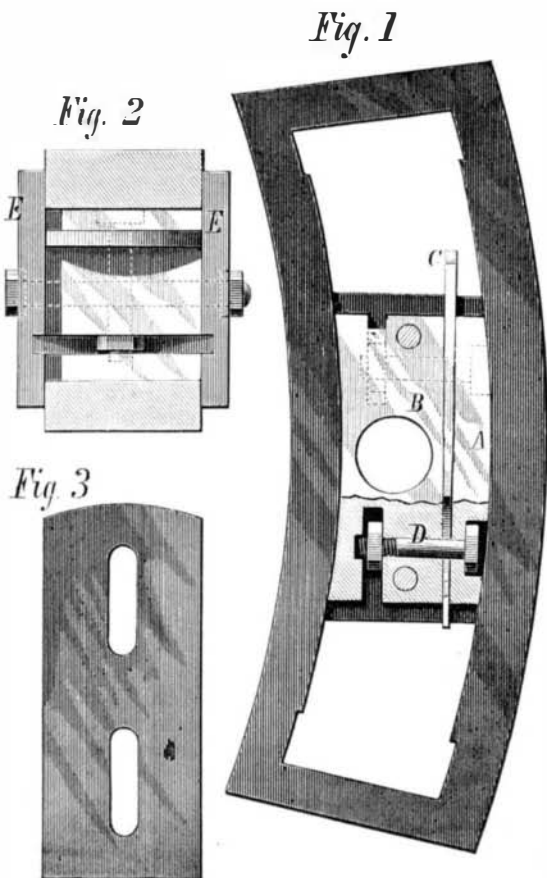
The engraving shows sections of two shafts, A and B, connected at right angles by the coupler; on said shafts are fixed, concentrically with their axes, the like cylindrical heads, C and D, each of which are slotted transversely, forming like jaws, on which journal caps are attached by bolts. Journal bearings are formed through the jaws, at right angles to and concentric with the axis lines of their respective shafts, in which journals are fitted like journal pins, E. The four equal coupler arms are carried in pairs in the jaws, by their hinge-jointed hubs, on the pivot pins, E. The outer ends of the arms are coupled together by two like ball-and-socket joints, each joint being formed by a ball turned up on one arm and fitting a take-up socket box, formed on its connecting arm and rabbitted. The weights, F, on the arm hubs, preserve the balance and uniform momentum of the two pairs of rotating and vibrating arms. The pivot pins are cored out for oil reservoirs, from which oil is supplied, through holes plugged with leather, both to the journal bearings and to the ball joints, making the apparatus self-lubricating. Motive power being applied to rotate either shaft, the inner ends of the arms will revolve with their respective shafts, while the outer ends of the arms will revolve in their diagonal circle of rotation, which compound rotary movements cause the arms to vibrate, both on their pivot pins and at their ball joints, with equal pivot movements: the arcs of vibration at each pivot being, in each revolution of the shafts, equal to the angle of deflection of the coupled shafts. The angular velocities of the two shafts are evidently the same at all points of a revolution of them, when we consider the arms of each opposite pair as equal levers in all their positions during a revolution.

Mr. Clemens has secured patents in this country on his invention, bearing dates November 2, 1869, and April 23, 1872, and has also received patents in several foreign countries. One of his shaft couplers for one hundred horse power can be seen at section C 9, Machinery Hall, Centennial Exhibition, in connection with the exhibit of Mr. George V. Cresson, of the Philadelphia Shafting Works.

Parties desirous of ordering the shaft couplings for the Middle States and Ohio, address George V. Cresson. For orders and territorial rights for the Western and Southern States, address the inventor, Melville Clemens, care George V. Cresson, 18th and Hamilton streets, Philadelphia, Pa.

IMPROVED LINK BLOCK FOR LOCOMOTIVES.

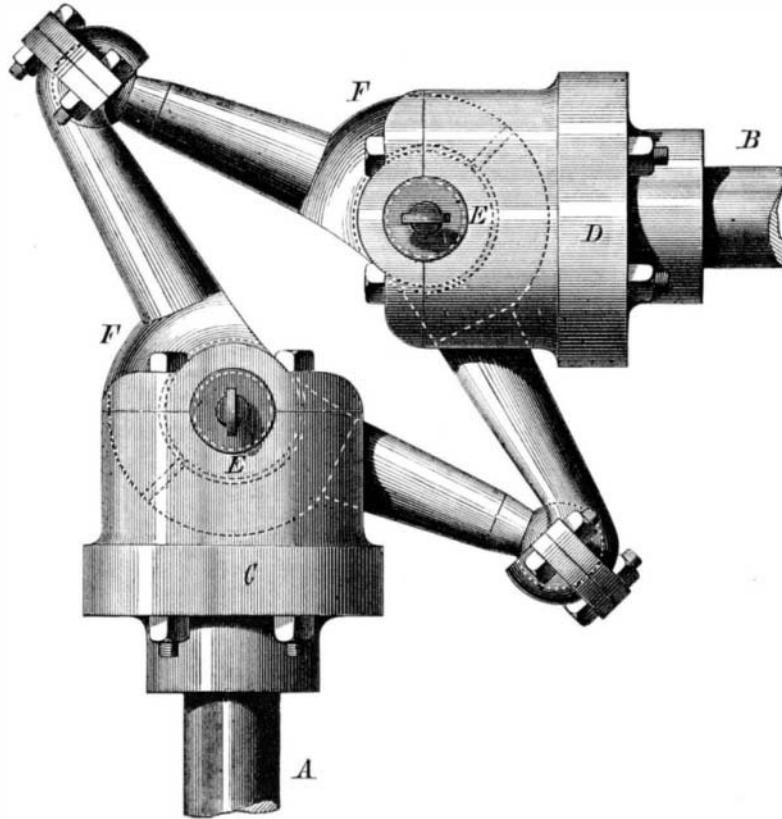
We illustrate herewith an improved adjustable link block,



claimed to fit tightly in the link and to wear it equally. It has other advantages, which will be found fully described below.

The block is not constructed in one solid piece, as is ordinarily the case, but is composed of two longitudinal parts, A and B, the adjoining sides of which are made with suitable inclination to receive the wedge piece shown at C, Fig. 1, and separately in Fig. 3. Screw bolts, D, connect both parts, the heads being countersunk in the recesses of one part while their threaded ends with screw nuts are adjusted by a wrench introduced into the slotted recesses of the other part. The wedge piece is suitably slotted to slide along the connecting bolts. Fig. 2 is a top view of the device, in which E E are the face plates which guide the blocks.

All who are familiar with the link, and its operation with



CLEMENS' MECHANICAL MOVEMENT.

the present style of solid block, know that it is the concussion of the block in the link that causes the link to wear so unevenly; that there is no effectual way of taking up the lost motion; that as soon as it occurs it accumulates very rapidly, causing unnecessary wear on the link and all connecting parts, and the engine to run at a great disadvantage. To remedy matters a large amount of work is required.

With the present improved link block, the inventor claims that one block, properly fitted, will wear the link perfectly true and outlast the engine, providing only the lost motion is taken up as soon as it is perceptible, and not left to accumulate as in the case of the solid block. That the valves can be set and kept square without losing lead. That when the lost motion is obviated, no appreciable wear can take place on the side plates, while much of the wear on rods, pins, etc., will be saved. That the lost motion can be taken up in a few moments without taking down or disturbing any other part of the machinery. That the necessity of using the piece link is avoided, and the solid case, hardened link, which is allowed to be far preferable, can be used to the greatest advantage, and that the device is not costly. The block can also be used as the ordinary old style block to advantage. When, after being used, the links need grinding out and new blocks fitted, all that is needed is to lap out the pin hole, insert a liner between the key and block, or fit in a thicker key, and a block equal to new is gained at a very trifling cost.

Patented through the Scientific American Patent Agency, June 23, 1874. For further information address the inventor, Mr. W. A. Alexander, P. O. box 130, Mobile, Ala.

Carbon Bisulphide as an Antiseptic.

Herr P. Zöller publishes the statement that, in an atmosphere containing a small quantity of the vapor of carbon bisulphide, animal and vegetable matters are effectually preserved against decomposition or putrefaction.

The author affirms that a few drops of this substance is sufficient for the purpose; and since it volatilizes at ordinary temperature, the employment of heat is rendered unnecessary. In this manner, he adds, bread, vegetables, fruit of every kind (and fruit juices), and meat may be preserved for a considerable time in closed vessels. Upon opening the vessels, the unpleasant odor of the bisulphide is very apparent; but upon airing the substances treated for a few minutes, it disappears entirely by volatilization. In the case of meats, the flesh, after having been submitted to the above treatment for several weeks, is in no wise unpleasantly affected.—*Deutsche Industrie Zeitung.*

American Meat in Europe.

The exportation of fresh meat in Europe seems destined to attain more importance than its promoters originally expected. It is but a little time since the steamship Abyssinia took the first shipment of fresh beef from New York—the dressed carcasses of 120 head of New York and Western cattle—contained in an iron refrigerator having an air exhausting apparatus. Now fresh meats form an important feature of all outgoing cargoes.

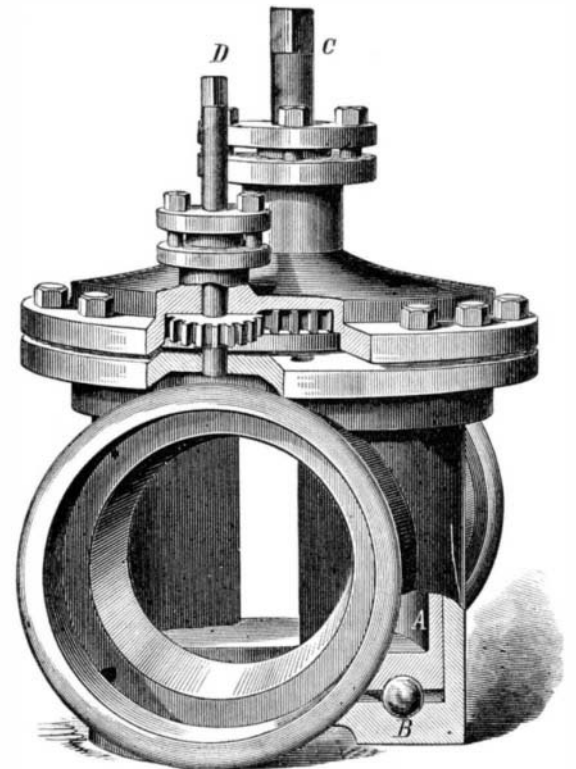
IMPROVED STOP VALVE.

The invention herewith illustrated is an ingenious and novel appliance designed as a substitute for the valves principally employed in water and gas mains. The common valves are usually mere diaphragms moved by a screw either inside or outside of the valve chamber. Outside screw valves are at present most employed; but owing to the length of the screw and its consequent long travel in order to open the valve, the latter is placed on its side. This avoids the deep excavation otherwise required, but still necessitates a long narrow vault, which must be bricked and otherwise finished, and the construction of which, in rocky ground such as is constantly found in many New York streets, we are informed, may cost, for a large valve together with the gearing necessary to work the valve, as high as a thousand dollars. The outside screw, moreover, is liable to rust, and therefore needs constant oiling and attention to keep it in working order. The inside screw, while not subject to the last mentioned difficulties, is easily bent and rendered inoperative; and in case of its fracture, the valve falls across the pipe, and is extricated only with considerable trouble and expense.

The present inventor, who has had a long practical experience in the laying of both water and gas pipes in this city, has devised the valve illustrated herewith on an entirely different principle, and he claims that it will altogether obviate all the disadvantages above noted. It consists of a cylinder, A, having an opening cut through it and placed in a valve chamber. By turning the cylinder on its vertical axis, either the aperture or the solid portion is carried in face of the pipe connections, and thus the water is allowed free passage through, or is shut off by, the valve. The cylinder rests below on rubber balls, B, so that its motion is always free on its seat, while its weight is thus firmly supported. Above, it is flanged so that no water can pass up over it into the bonnet. It has a central stem, C, to which the tool for turning it may be directly applied. In valves of large size, on the upper portion of the cylinder is a gear wheel, and in this meshes a pinion on an auxiliary shaft, D; so that by turning the latter the cylinder can, when desired, be rotated with less power than when operated directly by the central stem.

This valve, being practically but little larger in diameter than the pipe itself, requires no vault, and can be inserted anywhere. In places where pipes mingle, rise above, or cross each other, where it is generally impossible to work the ordinary screw valve, the apparatus shown in our engraving is inserted without difficulty. All its parts are covered so that they are not liable to stick; there is no screw to strip; the cylinder cannot fall, nor is there any portion to become out of order. We understand that the invention is already in successful use in many localities in this city. It is applicable to all purposes.

Patented through the Scientific American Patent Agency,



August 29, 1876. For further particulars address the inventor, Mr. J. D. Keegan, 240 West 31st street, New York city.

Railroads in the United States.

Railroad building in this country is progressing with much more rapidity than in 1875. *The Railroad Gazette* for September 8 states that 1,388 miles of new railroad had been completed in 1876 up to that date, against 678 miles reported for the same period in 1875, 984 miles in 1874, 2,408 mile in 1873, and 4,264 miles in 1872. The Los Angeles Division of the Southern Pacific Railroad has been completed, and the Cincinnati Southern is now the only other long line in the country now under way. It will be completed in 1877