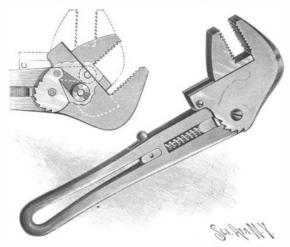
Scientific American.

AN IMPROVEMENT IN WRENCHES.

The wrench which forms the subject of our engrav- trimming. ing is provided with adjustable jaws which may be set handle, in contradistinction to being operated by the movement of a screw.

The handle of the wrench is formed with a slot in viously mentioned.



KLATT AND BRODERICK'S IMPROVEMENT IN WRENCHES.

which moves a button attached to a sliding block. To coiled spring pressing against a double stop-pawl.

Pivoted on the end of the handle adjacent to the pawl is the main jaw of the wrench, on which the adjusting-jaw slides. On the main jaw, concentric with width will wind spirally up to a level of 240 feet, and its pivot, segmental ratchets are formed which coact will be decorated with climbing plants which here and with the double pawl to hold the main jaw in the de- there will form beautiful bowers, galleries, or simple sired position. The adjusting-jaw is connected with arbors. At 120 feet from the bottom it will give access the handle by means of links.

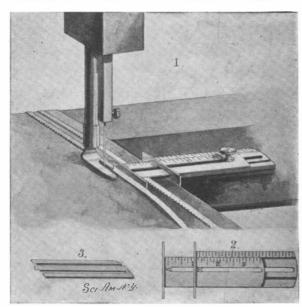
in the perspective view, the adjusting-jaw will be tieth Century." At 240 feet the road will lead to anpushed by its links as near as possible to the main jaw; other platform 30 feet in width, but only 328 feet in and the wrench will then be in position to grip the circumference. This will be named the "Franco-Russmallest sized nuts. When the wrench has its parts in sian Alley." Vegetation will be so arranged that visithe position shown in full lines in the partial sectional tors will pass from the splendid flora of the Mediterview, the jaws are opened to a larger capacity. In order ranean to the stunted shrubs found on craters. The to adjust the jaws to a nut, the wrench, when in the po- paths will lead to the various restaurants, cafés, consition shown in the sectional view, is placed on the nut cert halls, etc. There will also be a reproduction of and the handle turned toward the left, thus causing Dante's "Inferno." A cable railway will start from the adjusting-jaw to be thrown by its links toward the base and will take passengers up to the Francothe main jaw, and consequently closing both jaws on Russian Alley. The summit will always be surmountthe nut. The spring-pressed pawl in bearing on the ed by a cloud of smoke in the evening, three eruptions ratchets will hold the jaws in adjusted position. By will take place at fixed hours, and visitors will be able drawing back the button sliding in the handle, the to see an imitation lava flow which will doubtless pawl may be drawn back to release the jaws.

The wrench has been patented by Reinhold Klatt and Thomas M. Broderick, of Strong City, Kansas.

A SEWING-MACHINE GAGE.

The sewing-machine gage which we illustrate herewith is a simple device designed to direct and locate trimming or braid upon a fabric.

Fig. 1 is a perspective view of the gage in operative



shown in Fig. 3, which insertion or substitution would permit the ready passage of the material.

The device is the invention of Miss Susan Chatfield, of 105 West Sixty-fourth Street, New York city.

----The Volcano of the Paris Exposition.

The Paris Exposition will abound in interesting novelties and concessions. One of the most curious will undoubtedly be the artificial volcano. We shall publish an elevation and section of the same in our SUPPLE-MENT. It will be constructed at Grenelle, on the banks of the Seine. It will be 328 feet in height and 485 feet in diameter. From these figures it will be seen that the volcano will really be a mountain which visitors will have an opportunity of climbing. The sides of the mountain will be provided with shady roadways and footpaths, so as to make the trip to the top very agreeable. The framework of the volcano will require the block a rod is secured which is surrounded by a no less than 18,000,000 pounds of iron and steel for its construction. The earth which covers the framework will be real turf. in order that the mountain may present a verdant appearance. A roadway 25 feet in to a circular platform 30 feet wide and 1,000 feet in cir-When the wrench has its parts in the position shown cumference. It will be called the "Alley of the Twenprove very interesting.

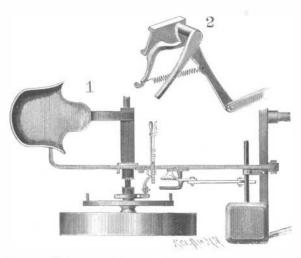
The Eclipse of 1900.

The Eclipse Committee, with Mr. Simon Newcomb as chairman, is now gathering information regarding the intended observation of the total eclipse of the sun which will occur in 1900, along the line reaching northeast from New Orleans to Norfolk, and thence across the Atlantic to Spain and Algeria. The totality is but brief in duration; still it is expected that many observers will take part, although fewer observations can be made than if a longer duration were available. Observers will, says The Nation, probably prefer the stations east of the Alleghenies, as to the west of those mountains the duration will range from 1 minute 30 seconds, near the mountains, to 1 minute 13 seconds. near New Orleans, where the sun will be much nearer the eastern horizon. The circular of the committee invites the co-operation of astronomers generally as to the measures to be taken.

A DROP-ACTUATING MECHANISM FOR SEED-PLANTERS.

A simple device has been invented by Peter W. Jeppesen, of Bloomfield, Neb., which is designed to operate automatically the dropping mechanism of corn-planters and similar agricultural machines, by the rotation of the wheels which carry the planter. Of our illustrations. Fig. 1 is a top plan view of one side of a corn-planter, showing the mechanism attached to the machine, and Fig. 2 is a perspective view of a bellcrank lever used to actuate the drop mechanism. On the planter-axle a wheel is mounted, which is provided with removable pins, upon the number of which the frequency of the seed-drop depends. This actuatingwheel may be mounted to turn with the axle; or it terial to be guided and to the presser-foot of the ma- may be loosely held and rotated whenever desired by chine. Fig. 2 is a plan view of the gage. Fig. 3 is a means of a clutch. In either construction the actuatperspective view of a spacing strip or slide adapted to ing wheel is grooved to receive a ring connected by a link with an operating-lever in reach of the driver's The gage consists of a base-plate and slide, both hand. The operating-lever is directly pivoted to a being graduated and having intermeshing ribs and block bolted on the planter-frame-a construction

guide-plate which is carried over the inner edge of the One arm of the bell-crank is held in the path of the pins on the actuating-wheel; and the other arm is con-In the operation of the device the base-plate and nected with the oscillating or reciprocating bar of the to the nut merely by the movement of the wrench- slide are first adjusted to their proper positions and drop mechanism. When one of the pins on the actuatare then clamped in place by means of the screw, ing-wheel engages the arm of the bell-crank, the other the head and guide plates being in the positions pre- arm will be caused to operate the seed-drop. To return the bell-crank to its operative position after hav-When the material to be stitched is of such thickness ing been thrown aside by a pin, a coiled spring is used as to prevent its passing under the slide, it is intended as shown in Fig. 2. The seed-dropping mechanism either to insert between the base-plate and slide, or to may be of any desired form, the particular type emsubstitute for the slide one or more suitably ribbed ployed not materially affecting the general construcand slotted auxiliary slides of the general character tion of the actuating parts. The devices described may be attached to any planter already constructed; they are simple in form, are readily controlled by the



JEPPESEN'S DROP-ACTUATING MECHANISM FOR SEED-PLANTERS.

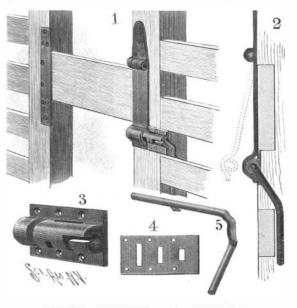
driver, and are adjustable to permit a regular dropping of the seed at any desired interval.

AN EFFICIENT FASTENER FOR STOCK-CARS.

The invention illustrated in the annexed engraving is a fastener for stock-cars, by means of which the entrance for the cattle may be effectively closed. The fastener consists particularly of an improved bolt and keeper for holding the hasp which confines the usual cattle-barrier or "bull-bar," as it is technically termed.

Fig. 1 shows the fastener in use. Fig. 2 is an elevation of the basp and keeper, with the bull-bar in section. Fig. 3 is a perspective view of the keeper. Fig. 4 is a rear view of the keeper. Fig. 5 is a perspective view of the locking-bolt. The bull-bar, as illustrated in Fig. 1, is received at one end by a socket formed in a plate carried by one stanchion, and is removably held at the other end by a hasp on the other stanchion, the hasp being bent to conform with the shape of the keeper, as shown in Fig. 2.

Referring to Figs. 3 and 4, it will be observed that the keeper comprises a base formed with a tubular portion. The base and tubular portion are provided with longitudinal and transverse slots communicating with the bore of the tubular portion and with a gap adapted to receive a staple on the hasp. The bolt. which coacts with the keeper to lock the bull-bar, consists of a main part and of a handle, by means of which it is operated. The main part slides and turns in the bore of the tubular part of the keeper, the end of the part serving to cross the gap in the tubular portion, to hold the staple. A lug is formed on the main part of the bolt, and is capable of being worked through the irregular passage formed by the longitudinal and transverse slots of the keeper in order to lock and release the bolt. The peculiar forms



A NOVEL GAGE FOR SEWING-MACHINES.

position, showing the relation of the gage to the mabe used in connection with the device.

slots controlling the direction of motion. The base which readily adapts the parts to most machines. The plate is held in place on the machine by a clamping block has an arm terminating in a notched segment, screw which is made to pass through a slot in the capable of being engaged by a catch mounted on the of the keeper and of the bolt render it impossible

braid. At its end, the slide is formed with a flanged Mounted upon the frame is a bell-crank lever (Fig. 2). John C. Pearson, Pocatello, Idaho.

PEARSON'S FASTENER FOR STOCK-CARS.

slide. Upon one end of the base-plate a head-plate, operating-lever and controlled by a handle in the usual for the bull-bar to become accidentally unlocked slotted to receive the slide, is formed, which head- manner. By means of this arrangement the actuating- after the bolt has been once turned and shifted in place. plate serves to guide the outer edge of the trimming or wheel may be shifted in and out of operative position. The fastener has been patented by the inventor, Mr.