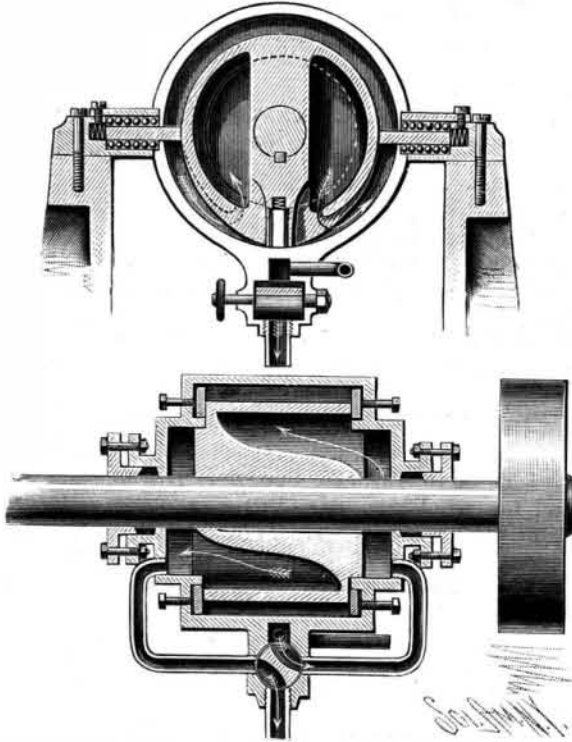


AN IMPROVED ROTARY ENGINE.

A rotary engine in which the steam is introduced into the piston, and the latter, which is eccentric, rotates in a circular casing or cylinder having yielding abutment blocks which bear against the periphery of the piston, has been patented by Mr. James E. Snevely, of Chetopa, Kansas, and is illustrated herewith through two vertical sections. The piston is keyed on a shaft passing through the casing and carrying a band pulley, the journal boxes being provided with suitable packing and retaining plates. Recesses are formed in the piston having an S-shaped partition between them,

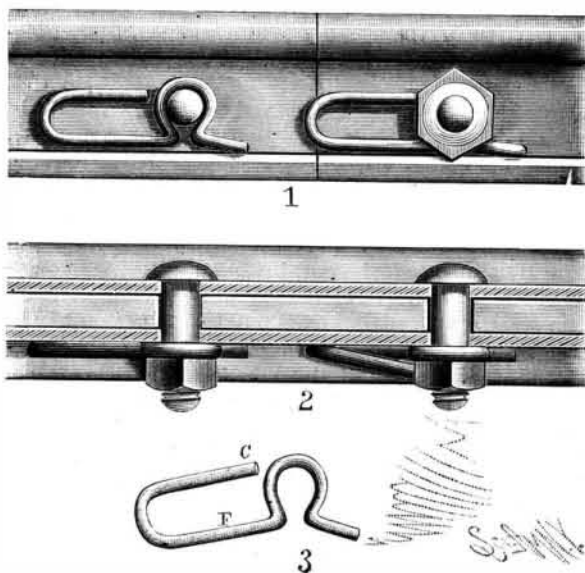


SNEVELY'S ROTARY ENGINE.
SNEVELY'S ROTARY ENGINE.

the steam chests, and by means of ports into an annular space between the casing and piston. The piston has an eccentric portion which has a perfect contact bearing with the inner wall of the casing by means of a yielding block in a recess on its periphery, the eccentric also acting alternately to press back abutment blocks adapted to slide on anti-friction ball bearings in recesses in the arms of the casing. The steam supply pipe connects with a passage communicating with a circular chamber in which is a rotary valve, by means of which steam may be directed into either of the branch pipes connecting with the steam chests at the ends of the piston, the arrows showing the direction of the steam when admitted into the right hand pipe. The valve chamber also connects with a steam discharge pipe, the valve being turned by means of a handle or wheel to direct the steam into one or the other of the branch tubes, when the opposite tube will form the outlet pipe. The configuration of the recesses in the piston are such as to cause the steam to effectively drive it, and the parts in frictional contact are so self-adjusting that when they become worn they will still form tight steam joints.

AN IMPROVED NUT LOCK.

A nut lock that is very simple and inexpensive, and well calculated for application to railroad rails and for



RENNIE'S NUT LOCK.

other uses, has been patented by Messrs. Frank and John Rennie, of No. 339 East Fifth street, Dayton, Ohio, and is illustrated herewith, Figs. 1 and 2 showing its application in securing rails, and Fig. 3 being a detail view. This nut lock is made of round or square rod iron or steel, bent into the form shown in Fig. 3. It can be made to fit all sizes of bolts and nuts, such

as used on crossing switches and all railway joints, and is easily put on either new or old bolts and angle splices, saving the nuts, bolts, and ends of the rails from undue wear. The loop being placed on the bolt, with the straight part of the rod resting on the foot of the angled fish plate, and the nut carried to its place, the part, F, is forced into place, and a chisel or wedge is driven behind the bent portion, C, throwing it outward into the path of the corners of the nut, or a tool especially designed for the purpose may be employed for bending the arm, C. The nut cannot then become accidentally loosened until the arm is driven back to its original position. It is said that this nut lock has already given great satisfaction for its simplicity, efficiency, and durability, in railroad service.

Queer Name for an American War Vessel.

We read in one of the accounts of the launching of the new gun boat Yorktown and dynamite cruiser recently, at Philadelphia, that the latter's name was kept a profound secret, and that no one but Secretary of Navy Whitney knew of her name until she started on her slide into the waves, christened the Vesuvius. There was no mystery about the Yorktown, every one knew what she was to be called, as they have the rest of our ships, so soon as their keels were laid; but Vesuvius was kept back. Why, no one seems to know. If as a surprise, it succeeded, for our people are surprised, and justly so, that a United States man-of-war should be named after a foreign mountain. Are there so few mountains in our own broad land that could grace and dignify this boat, that an Italian one should be selected to be floated over our waters on the stern of this experiment—this Simon Pure Yankee invention?

It has been a custom, even if not a law by observance, to name all our war ships after our own States, rivers, mountains, villages, and hills, and are we now so devoid of these that our limited navy cannot be supplied with an appropriate one? Or is it that some one in authority is devoid of imagination, patriotism, or a dictionary? Our fathers had no trouble in their selections, *vide* the Congress, Constitution, Cumberland, Saratoga, Saranac, Kearsarge, Independence.

Better stop with Vesuvius, Mr. Secretary, or why refrain from calling our next ship the London, Moscow, Hong Kong, or Popocatapetl? J. O. D.

Improved Photographic Plates.

At a recent meeting of the Franklin Institute, Frederick E. Ives communicated an important discovery in isochromatic photography made by himself. After referring to the objections made to the process employing collodion emulsion and chlorophyl, which is claimed to be the only one published which shows a difference between a black and a deep red without over-exposing orange and yellow, he said: "At last I have succeeded in securing, by a surprisingly simple procedure, the full action of chlorophyl upon commercial gelatine bromide plates.

"The results are already superior to anything that can be obtained with cyanine. The degree of color sensitiveness obtained appears to bear a definite relation to the general sensitiveness of the plate employed, which should, therefore, be of the most rapid kind. They are prepared by flowing with the alcoholic solution of chlorophyl, then drying rapidly, then soaking in water for at least five minutes, after which they may be used at once. With the two year old chlorophyl employed the absolute color sensitiveness is fully equal to that of the best commercial 'orthochromatic' plates, and is so distributed as to be capable of giving far more accurate results; but the blue sensitiveness, which is greatly reduced by cyanine and erythrosin, is actually increased by chlorophyl, making it necessary to use an extra deep orange color screen with these plates."

AN IMPROVED STOCK TETHER.

A cheap, durable, and efficient tether, in which the parts are arranged to prevent the animal from becoming entangled in the tie rope, is illustrated herewith, and has been patented by Mr. William Overaker, of Hillsborough, N. C. The post is braced by properly arranged guy ropes, and to its upper end is bolted a bracket with tubular socket within which a vertical standard is held. The upper end of the standard is slotted, and in the slot is pivotally mounted a beam, normally upheld by a spring secured to the standard, and arranged to have a certain amount of play in a stirrup-like loop carried by the beam. A weight is attached to the short end of the beam, while to the long arm is secured a shackle by which a tie rope is attached to the beam, leaving the animal free to graze anywhere about the post within a radius equal to the combined length of the rope and the long arm of the beam, the slack of the rope being taken up as the animal advances toward the post, by the elevation of the free end of the long arm of the beam by the spring and weight. If desired, the spring may be dispensed with and the weight alone employed, there being different apertures in the beam through which the pivot bolt may be passed for properly balancing the beam.

AN IMPROVED BAG HOLDER.

A bag holder especially adapted for use with hand trucks, designed to hold the bag on the truck and at the same time to hold the mouth of the bag open, is illustrated herewith, and has been patented by Mr. Frank G. Fischer, of Harrold, Dakota Ter. It is mounted on a T-shaped frame, of which the vertical bar is notched and held to slide in a keeper, preferably secured to the rear of a cross bar of the truck, the notches in the bar being engaged by a pivoted pawl, held in place by a spring, whereby the frame can be adjusted at the desired height, according to the bag to be filled. On the cross bar of the frame are pivoted the lower ends of two arms, extending upward and being bent over and downward at their upper ends, which carry disks, each provided with a number of projections adapted to engage the inside of the bag.



FISCHER'S BAG HOLDER.

These arms are pressed apart by a U-shaped spring, secured in its middle to a staple fastened on the cross bar of the frame, the ends of the spring having ears through which pass the upwardly extending straight parts of the arms. When the bag holder is attached to the truck, the supporting arms rest against the front of the top cross bar of the truck, the operator releasing the bag, as its end is thrown from the

foot of the truck, by pressing the bent parts of the pivoted arms toward each other, thus releasing the disks from the sides of the bag.

AN IMPROVED SUSPENDER BUCKLE.

A suspender buckle in which the clamp is securely held in place and firmly guided on the side bars is illustrated herewith, and has been patented by Mr. William J. Walters, of Prospect, N. Y. The bottom crossbar of the buckle frame has in its middle an aperture, preferably made by bending part of the crossbar outward and securing to the crossbar a sleeve which has part of its middle cut away at the front. The aperture may also be formed by splitting the middle part of the crossbar, or by forming a loop therein, and dispensing entirely with the sleeve. Continuations of the inclined portions of the clamp pass through the aperture, whereby the clamp is prevented from moving sidewise, and obviating a binding of the bearings on the side bars of the buckle frame, so that the clamp is readily adjusted, and at the same time its hooked part is prevented from passing above the lower crossbar.

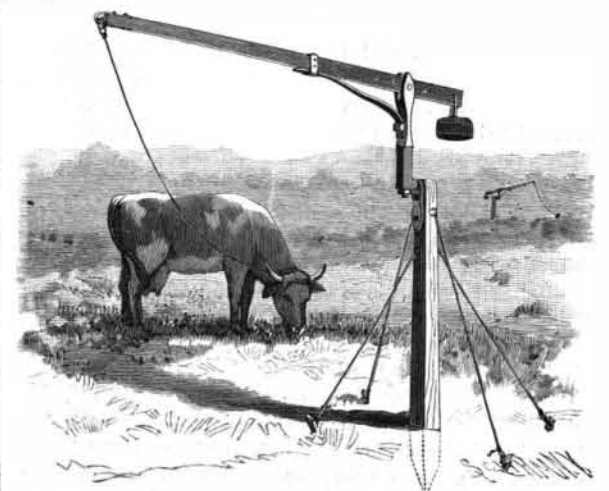


WALTERS' SUSPENDER BUCKLE.

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Improved Mail Bags Still Needed.

The recent call of the Postmaster-General for proposals for supplying the United States Post Office Department with improved letter pouches and mail bags resulted in the presentation of no less than fifty-one new contrivances, all of which were rejected. Each party was required to furnish two bags, fully completed for use, but not to be adopted unless, in the opinion of the committee, they should appear to be of value for the service. There is a further opportunity for ingenious people to see what they can do.



OVERAKER'S STOCK TETHER.