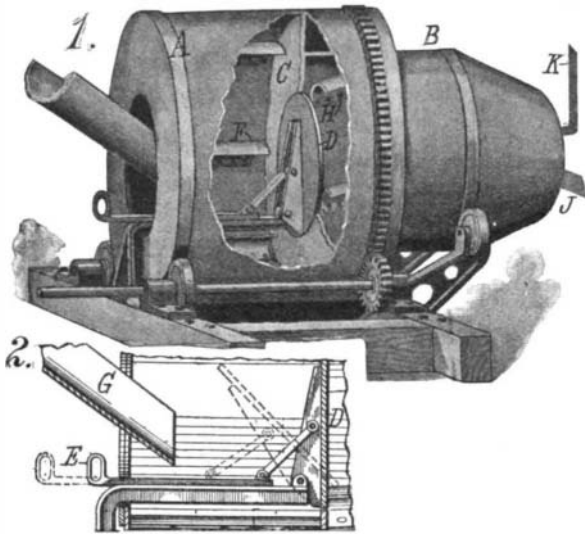




CONCRETE MIXING MACHINE.

In the ordinary concrete mixers, wet cement is liable to collect on the inside of the mixing drum. Unless this is frequently scraped off, the caking of

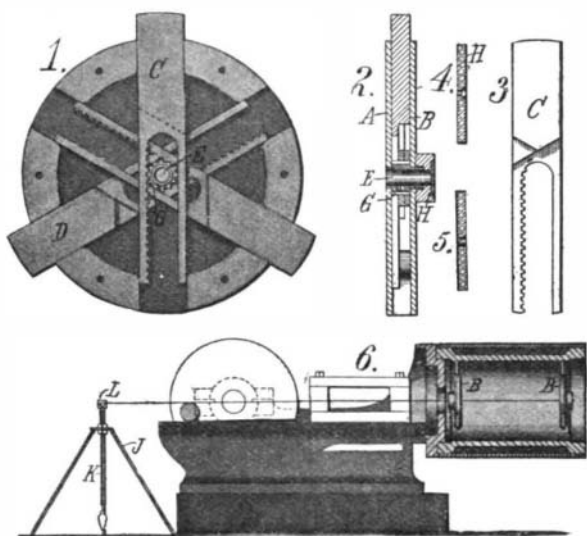


CONCRETE MIXING MACHINE.

the cement has the effect of contracting the capacity of the mixer, rendering it less efficient in operation, and causing some of the mixtures to be too poor in cement, while others contain a higher percentage of cement than desired, owing to the occasional breaking loose of a cake of the material. In the machine illustrated herewith, the aggregates are mixed dry, and during this mixing are widely scattered. But thereafter they are placed in a second drum, where the wetting takes place, and here they are confined as much as possible, so that the moisture is quickly and uniformly distributed. The dry mixing chamber of the machine is indicated at *A*, while the wet chamber, which is partly conical in form, is shown at *B*. In order to increase the strength of the construction, the chamber *B* is partly telescoped within the chamber *A*. A partition *C* separates the two chambers, and in this partition is a hinged gate *D*, connected by a link to an operating lever *E*. The drum *A* is formed with the usual gear ring, engaging a driving pinion, and is supported on rollers, so that it may be rotated by operating the pinion. Within the drum *A* is a series of buckets *F*, which pick up the material as it is introduced through the chute *G*, and thoroughly mix it. When the material has been sufficiently mixed, the gate *D* is lowered to the position indicated by dotted lines, when it acts as a chute to deliver the material into the second drum *B*. The latter is also formed with buckets which pick up the material and thoroughly mix it before it is delivered through the chute *J*. Water is introduced into this chamber through the pipe *K*. This cement mixer has been patented by Mr. A. G. Olsen, of Elkhorn, Wis.

ENGINE ALINER.

An improved device for lining up engines has recently been invented, which possesses a number of advantages over the ordinary device. It consists of two circular plates *A* and *B*, the plate *B* being formed with a flange in which recesses are cut to receive three radial members. These radial members are quite similar to each other, and each is formed with two oppositely-disposed parallel bars, one of which is provided with teeth adapted to engage a spur pinion mounted centrally in the disks *A* and *B*. By rotating this pinion, all three of the radial

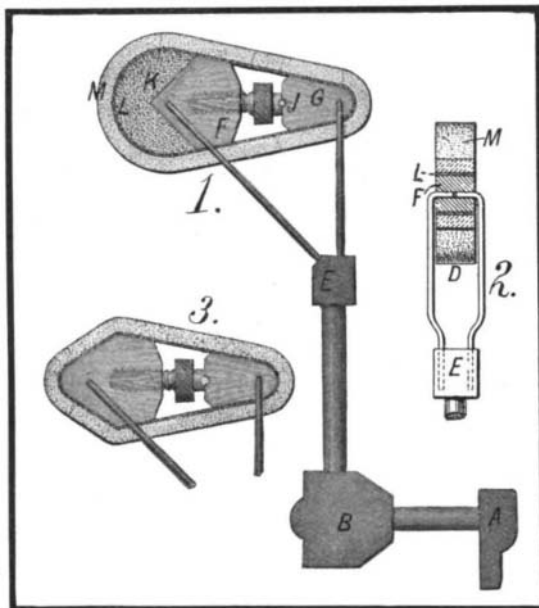


ENGINE ALINER.

members may be moved inward uniformly to center the device in the engine cylinder. A central opening is formed in the pinion, and this is covered by a glass plate *H*, in which is a central aperture. Two centering devices are commonly used when alining the engine, in one of which the glass disk is formed with an aperture such as shown in Fig. 5, while the glass disk of the other has a countersunk aperture, such as indicated in Fig. 4, to receive the knot of a cord. One of the figures shows how the apparatus is used. The cord knotted in one of the centering devices passes through the second centering device, and thence over a support *L* to a plumb bob, which holds it taut. The support *L* consists of a horizontal screw, which passes through the head of the vertical screw *K*, mounted in a tripod *J*. By operating these screws, the outer end of the cord may be adjusted horizontally or vertically, so that it will not touch the edges of the aperture in the glass of the second centering device. As the centering devices are provided with glass plates, the operator can look through them, and more readily direct the adjusting of the cord. The crankshaft is then adjusted to such a position that the cord crosses the wristpin half between the ends of the latter and across the center of the crankshaft. With the crankshaft supported in this position, the bearings may be rebabbitted, or otherwise adjusted to properly support the shaft. Mr. Oliver Gibbons, of Lookout, Cal., has been granted a patent on this engine aliner.

ADJUSTABLE HEAD FOR PIANO HAMMERS.

The piano hammer, which is illustrated in the accompanying engraving, is provided with a head, on which the felt strips are adjustable. The head of the hammer is resiliently supported on the shank, so as to permit of a quicker rebound than in the ordinary hammer. The hammer is formed with the usual back stop *A* and butt *B*, with a shank which supports the head *D*. The base *E* is mounted on the end of the shank and thence a pair of wire arms extend upward to a pair of blocks *F* and *G*, which are thus



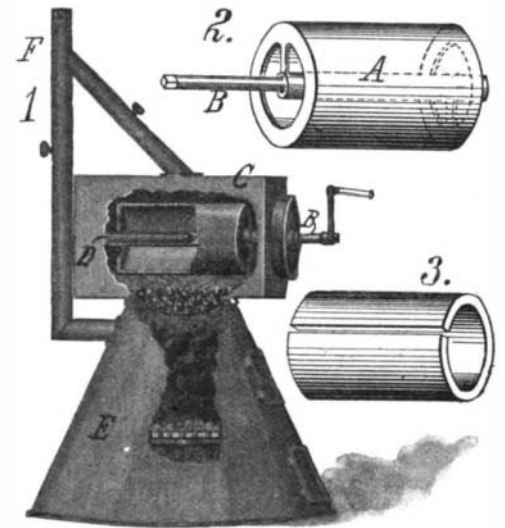
ADJUSTABLE HEAD FOR PIANO HAMMERS.

resiliently supported by the shank. Between these blocks a spreading screw is mounted, which is provided with a pin *J*, adapted to engage a depression in the block *G* to prevent the screw from turning after it has been set at the desired adjustment. The block *F* is formed with a V-shaped end over which a filler *K* of felt, or suitable material is placed. Around the filler and the blocks is an endless felt strip preferably formed of an inner part *L* and an outer part *M*. By turning the screw the tension of the felt may be adjusted to any desired degree. When it is desirable to shift the felt, the screw is turned to loosen the tension, and it may then be moved to bring a fresh surface to the striking position. The wire members which support the blocks are bent inward at their upper end to engage perforations in blocks so that when it is desired to remove the head they can be made to release the blocks by merely spreading them apart. Fig. 3 shows a slightly modified form of the adjustable head. The inventor of this piano hammer is Mr. John W. E. Laker, Box 103, Victoria, B. C., Canada.

APPARATUS FOR TREATING RUBBER.

In preparing crude rubber from the juice of the rubber tree, the usual method is to dip a stick into the juice, and then hold it in a smudge, so that the smoke will coagulate the rubber in a thin layer on the stick. Layer upon layer is thus formed, until a large mass of the crude rubber is obtained. A machine for performing this work has recently been invented. The machine comprises a drum *A*, open at each end, but formed with flanges to retain the juice of the rubber tree when placed therein. The drum is formed with an

axle *B*, on which is a crank to permit of rotating it during the process of coagulating the rubber. The drum is mounted within a smoke chamber *C*, being supported on a pivot rod *D*, that enters a hollow portion of the axle of the drum. The axle at the opposite end of the drum passes through a cap, which closes a large opening in one side of the smoke box. Below the smoke chamber *C* is a fire chamber *E* of frusto-conical form. The two chambers are separated by a screen, which supports a mass of pebbles and broken stone. The purpose of this screen is to prevent soot

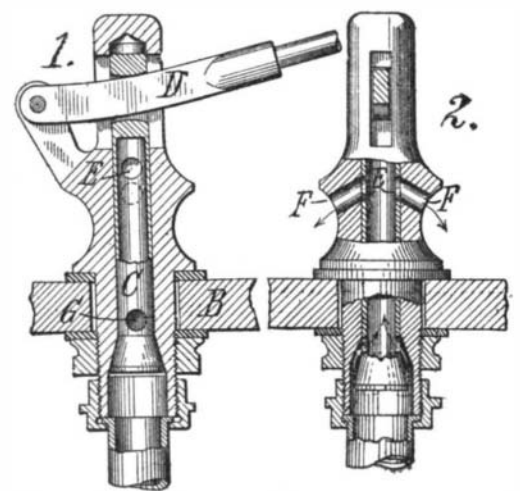


APPARATUS FOR TREATING RUBBER.

or ashes from passing upward and lodging in the rubber. A smoke pipe *F* is formed with two branches, one connecting with the smoke chamber *C*, and the other with the fire chamber *E*. In operation the drum is partly withdrawn from the smoke chamber, while its inner end is supported on the pivot rod *D*, and a quantity of the juice is poured into it. The drum is then moved back, and the smoke chamber is closed. Now, on operating the crank, the drum is revolved, and a thin layer is formed on the inner side of the drum. This layer gradually grows until the entire mass of rubber is coagulated. The dampers are then turned, to permit the smoke to pass up the chimney without going through the smoke chamber. The drum *A* can now be removed, and the mass of rubber taken out of the drum by cutting it lengthwise. The rubber thus formed will have the shape shown in Fig. 3. Mr. Enrique Molina, of 131 East 63rd Street, New York, is the inventor of this apparatus for treating rubber.

VALVE FOR FLUSH TANKS.

The valve which is illustrated herewith contains no gaskets or packing in its working parts, and hence is less liable to get out of order than the ordinary valve. The valve casing as indicated in the illustration, is fastened on the bottom *B* of the flush tank. The valve is formed with a stem *C*, which is adapted to slide vertically in the casing. Passing through an opening in the upper end of the stem is the float arm *D*, which is hinged to the casing and is provided at its opposite end with the customary float. The lower end of the stem is formed with a conical plug, constituting the valve proper, which is adapted to fit the conical valve seat, as indicated in Fig. 1. There are two pairs of openings, *E* and *G*, leading into a hollow portion of the valve stem. The upper pair *E* is adapted to register with a pair of ports *F* in the valve casing when the valve is depressed or opened, as shown in Fig. 2. When in this position, the water runs from the supply pipe, past the conical plug, through the ports *G*, into the hollow portion of the valve stem, and thence by way of openings *E* and ports *F* into the flush tank. It will be observed that the ports *F* are downwardly inclined, thus directing the streams of water downward, and preventing spattering over the sides of the tank. When the float arm *D* rises, the plug is seated, cutting off the supply of water. The



VALVE FOR FLUSH TANKS.

inventor of this improved valve is Mr. N. C. Waltherthum, of 157 Hopkins Avenue, Jersey City, N. J.

THE GERMAN CROWN PRINCE AS AN INVENTOR.

While there is nothing startlingly novel in the design of the cuff buttons shown in the accompanying engraving, yet they are interesting as the creation of a royal inventor. No less a person than the Crown Prince of Germany has originated this form of cuff button. The cuff buttons are of the link type, each link being formed with an eye to receive the crossbar of a short chain. While it is not the first time that one of royal

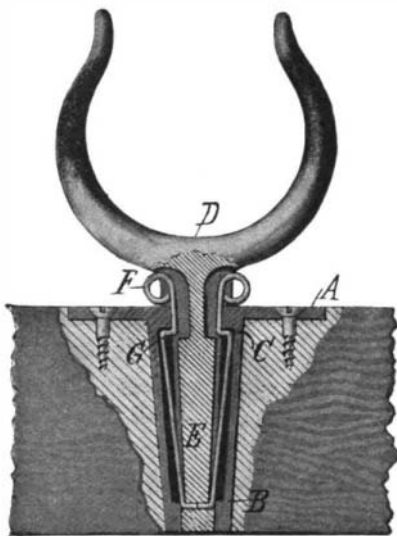


SLEEVE LINKS INVENTED BY THE GERMAN CROWN PRINCE.

blood has entered the ranks of inventors, it is not often that a royal personage has troubled to protect his invention with a patent. The Crown Prince of Germany has thought it worth while to apply for a patent on his cuff buttons, and has assigned the patent to the court jeweler, J. H. Werner, of Berlin.

IMPROVED OAR LOCK.

The accompanying engraving illustrates an oar lock of improved construction, which is provided with resilient means for fastening it to the gunwales of a boat. The construction is very simple. A plate *A* is secured by screws to the gunwale, and is formed with a depending socket piece *B*, which constitutes the keeper of the oar lock. The socket, which is tapered, is constricted at the upper end to provide an annular shoulder *C*. The oar lock proper is indicated at *D*, and is formed with the usual shank *E*, in which recesses are cut at opposite sides to receive a pair of springs *F*. The lower ends of the springs are bent inward, to engage an opening near the bottom of the stem *E*. The springs near their upper ends are bent to form shoulders, adapted to engage the shoulder *C* of the keeper. The recesses in the stem *E* are deepened near the upper end of the stem, as indicated at *G*, to make room for the springs *F*. When it is desired to remove the oar lock, the springs *F* are pressed inward to clear the shoulder *C*. When inserting the oar lock, the springs are automatically compressed until they snap out under the shoulder *C*. They then serve to hold the oar lock in its socket, and prevent it from being accidentally withdrawn. Mr. Charles



IMPROVED OAR LOCK.

Bestman, of Friday Harbor, Wash., has received a patent on this improved oar lock.

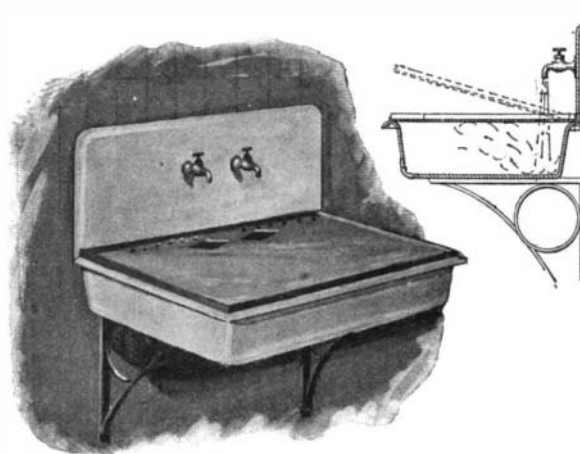
RECIPROCITY IN PATENT LAWS.

The new tariff bill, now before the House of Representatives, contains a section which is most interesting to patentees. The section provides that the same patent regulations shall be applied to citizens of foreign countries as these countries apply to the citizens of the United States. This appears to be a retaliatory measure, and yet its purpose is not so much retaliation as reform. In nearly all European countries a penalty is imposed upon the owner of a patent for failure to manufacture within a certain period. In France the manufacture must be begun within three years after the date of filing the patent. In Germany the three-year term dates from the time of issue. England has just passed a law whereby a patent may be

revoked if no serious attempt at manufacture is undertaken within four years of the date of issue. The United States, on the other hand, has stimulated invention by its liberal patent laws, and makes no restriction on the absolute monopoly granted to an inventor, whether he be native or alien. Thus a foreign patentee receives better treatment in this country than in his own, whereas citizens of the United States cannot secure the same advantages in foreign countries as they do at home. The status of foreign patentees is somewhat difficult to define. When an inventor discloses a secret, the patent rights he receives are granted as a reward by his country. The only purpose in granting such a reward is to stimulate invention, and work for the progress of the country. The difficulty, however, lies in the fact that when the secret is disclosed, the disclosure cannot be confined to one country, but is worldwide. The only advantage to a foreign country in granting a patent on an invention which has been patented here, is that we in our turn are willing to award the same rights to citizens of the foreign country. It would seem an injustice, then, for us to be granting a higher award to foreign citizens than they are granting to our citizens, particularly in view of the fact that no direct benefit is to be obtained from our award for a secret that has already been disclosed. The only solution of the difficulty would seem to be in reciprocity treaties with the various foreign countries. There is now a treaty pending, whereby Germany will agree to waive the three-year clause as far as it affects American inventors, in view of the fact that we are treating German inventors with such great liberality. The tariff provision should hasten the ratification of this treaty, and help to bring about similar treaties with other countries.

KITCHEN SINK COVER.

Pictured in the accompanying engraving is a cover for kitchen sinks, which serves as a support for the

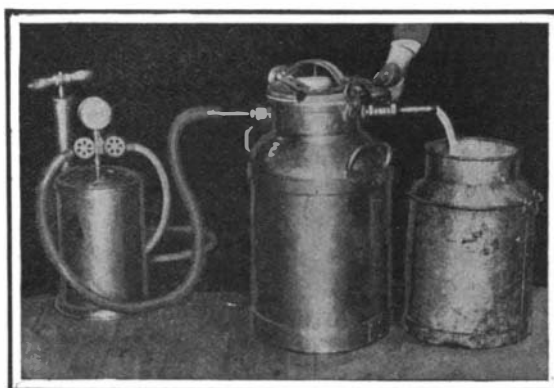


KITCHEN SINK COVER.

dish pan, and which is provided with openings to permit the water from the spigots to pass through. The cover thus serves as a temporary tray or shelf on which the utensils may be supported, and prevents the objectionable splashing of the ordinary sink. The inventor of this device has found that diamond-shaped openings in the cover are the best for permitting the water from the faucets to pass through. In case any water should splash out of the tray, it may readily be drained off by tilting it, as indicated in one of the illustrations, when the water will pass out through a series of small openings near the rear edge of the tray. It is claimed for this sink cover that it acts as a great saving of clothes, which are often soiled with water that splashes from the bottom of the sink while the faucets were running. This fact alone would be appreciated by the housewife who frequently has to be her own kitchen maid. Mr. Adam Giffen Demarest, of 216 West 26th Street, New York city, is the inventor of this sink cover.

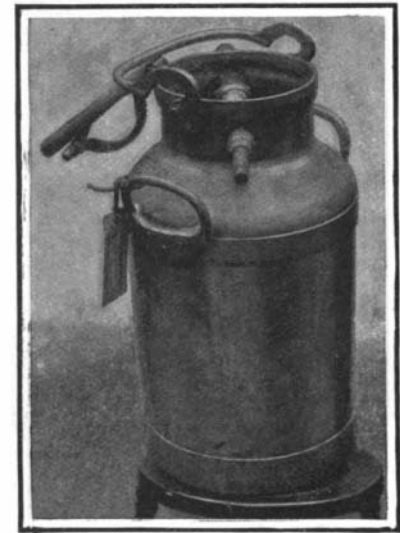
PNEUMATIC MILK CAN.

A recent invention provides a milk can which may be filled at the dairy, hermetically sealed, and kept in this condition until the entire contents of the can



DRAWING MILK FROM THE PNEUMATIC CAN.

are removed at the place of sale. This result is effected by the use of compressed air in the can, which forces out the contents, as needed. The compressed air is sterilized, and everything about the milk is kept perfectly clean. There is no danger from contamina-



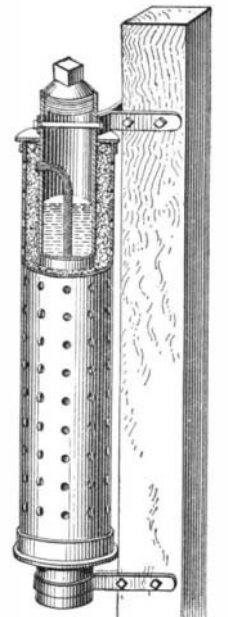
THE MILK CAN SEALED AND READY FOR SHIPMENT.

tion by exposure to dust and dirt or flies and other insects. It is impossible to change or adulterate the contents of the can in any way from the time it leaves the dairy until the contents have been placed in the consumers' hands. The can is locked, and no liquid can be pumped into it without breaking the lock and removing the cover. Whenever it is desired to draw off a certain amount of milk, it is merely necessary to turn a valve, when the liquid will be forced out by the air pressure in the can.

ODDITIES IN INVENTIONS.

RUBBING POST FOR LIVE STOCK.—An inventor living

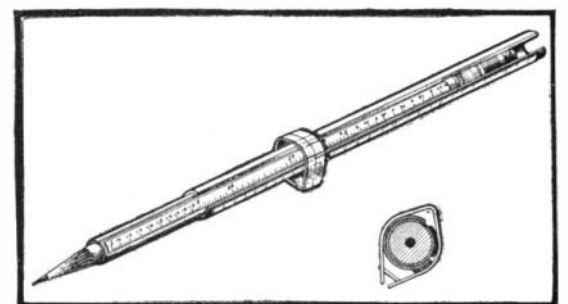
in Nebraska has carried the automatic idea to the extent of enabling live stock themselves to apply insecticide, or soothing oils to parts that are irritated or affected by vermin. The invention consists of a rubbing post in which is a reservoir filled with the insecticide, and which may be placed at any suitable place convenient to the live stock. The rubbing post is formed with a central reservoir in which the oil is kept. Between this and the outer casing of the post is a felt-like filling. A wick serves to carry the oil from the reservoir to this filling. The outer casing of the post is perforated so that when the animal rubs against it the oil will exude from the perforations and be spread upon the affected part.



RUBBING POST FOR LIVE STOCK.

CALCULATING RULE AND PENCIL HOLDER.—For the benefit of the engineer and draftsman

who is required to make hasty calculations, a combined pencil holder and calculating rule has recently been devised. The calculating rule is of tubular form, and is fitted with a slide indicator, formed in the shape of a cuff. One part of the tube comprising the rule is provided with a slide member, which is graduated and



CALCULATING RULE AND PENCIL HOLDER.

used in the manner of the ordinary slide of a calculating rule. Within the tube a pencil may be fitted. By thus combining the rule and pencil, the danger of mislaying the rule is avoided, and the combined instrument is of convenient form to carry in the vest pocket.

The annual production of nickel in Europe increased from 4,526 tons in 1900 to 7,600 tons in 1907. In America the production increased from 3,000 tons in 1900 to 6,500 tons in 1907. Of the European output in 1907, 3,200 tons were produced in England, 2,600 tons in Germany, and 1,800 tons in France.