

BARREL MACHINERY.*[Continued from first page.]*

Following this machine is the machine, Fig. 5, for chamfering, howeling, and crozing, which prepares the cask to receive the heads. It cuts the chamfer, howel, and croze at one operation, making a perfect groove of uniform width and depth to receive the head. This machine has a capacity of 1,500 casks per day, and will finish casks of any size from one-eighth beer kegs to large casks, and is made for this range of work when so ordered. All of these machines are well made and are of great practical value.

Dynamo-Electric Motor.

The London *Mining Journal* states that at the Mannheim Industrial Exhibition over 8,000 persons have been conveyed at the rate of nearly three miles an hour by the electric lift of Dr. Werner Siemens, of Berlin.

The lift is quite safe, the cage being suspended by two wire ropes, which pass over drums, and carry counterweights to balance the ordinary average load. To raise or lower the lift, therefore, only a slight additional power is required. This is supplied in the form of an electric current from a dynamo-electric generator on the ground, and is conducted to a second dynamo machine attached to the carriage. The propulsion is effected by means of a metal ladder or rack, which runs up the middle of the shaft or passage of the lift, and into this rack work two toothed wheels carried by the lower part of the framework of the carriage. These wheels are driven by the revolving armatures of the dynamo machine on the car by means of an endless screw. The current is led from the stationary generator to the moving one by conductors running up the sides of the ladder and two metal rollers which make contact with them, and are connected to the armature of the machine. The return part of the circuit is formed of the metal wires by which the carriage is suspended.

The New South Wales Museum.

It should have been mentioned in our notice of the Technological, Industrial, and Sanitary Museum of Sydney, last week, that Messrs. Tribner & Co., 57 and 59 Ludgate Hill, London, England, will receive and forward to the museum any contributions that our merchants and manufacturers may choose to make.

RECENT INVENTIONS.

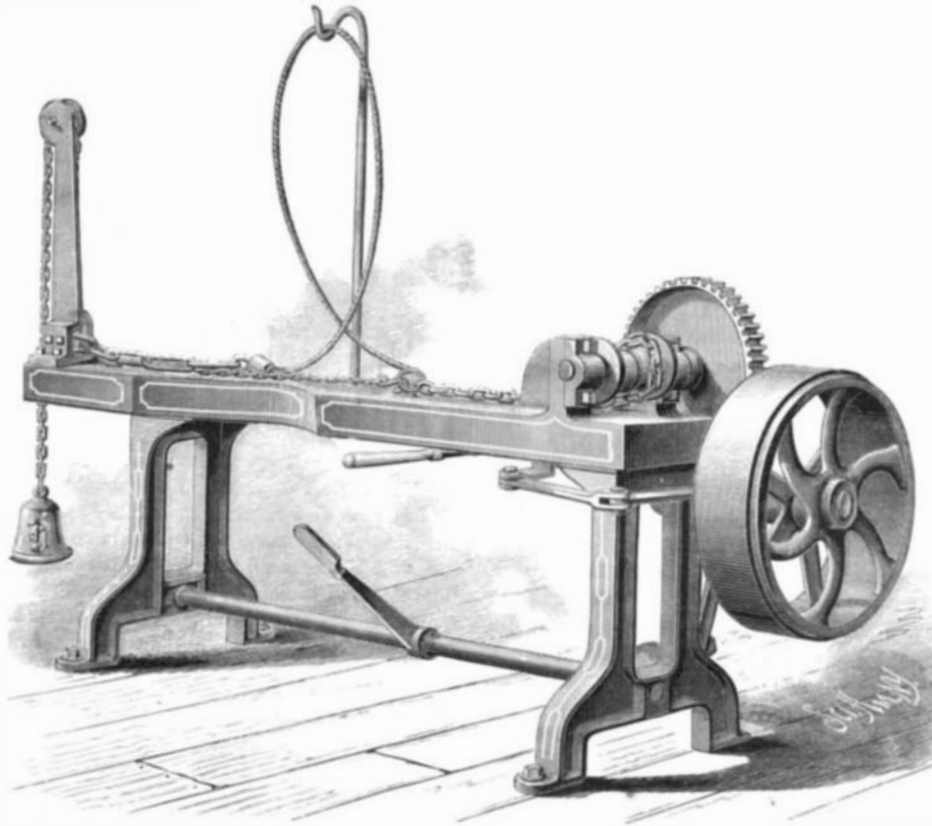
Mr. Joseph Sirguy, of New Orleans, La., has patented an improved lock, so constructed that its keyhole may be adjusted to any desired position, thus adapting the lock to be attached to doors having key holes from former locks. The casing of the lock is provided with sliding plates in which are the keyholes, and which may be fastened permanently with screws when adjusted to the desired position. By employing two sets of plates, one of which has a barrel for a spindle-key and the other a spindle for a barrel-key, the lock may be fitted for use with any kind of key.

Mr. George F. Letellier, of Tye River Depot, Va., has invented an improved millstone dressing machine of that class which employs a pick, and may be adjusted to act from the eye to the skirt of the stone. The invention consists in improved means for tripping the pick lever for regulating the force of the blow, and for adjusting the pick over the face of the stone to any required position.

Mr. George W. Dudley, of Waynesborough, Va., has patented a rotary engine which dispenses with valves, sliding abutments, etc., operated from the driving shaft by means of cams, eccentrics, etc. Segmental pistons are employed and a novel reversing valve is provided.

A stump puller, patented by Mr. William O. Youngblood, of Cedar Springs, Mich., consists of a frame, two levers pivoted to the frame, and having eye-bolts to receive the pulling chains to apply the power to the hitch-chain, two ropes and their guide pulleys for connecting the levers with the power, the shaft having the connecting ropes wound around it in

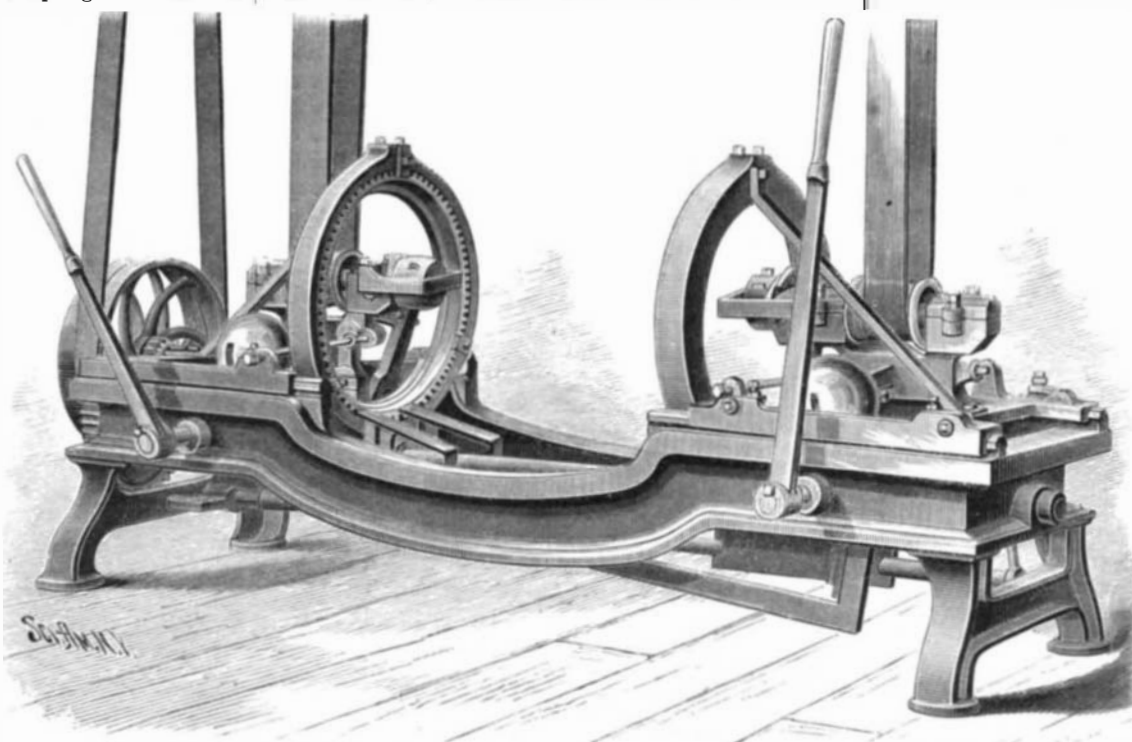
different directions, and two rope wheels, the two draw ropes being wound in different directions around the rope wheels, Mr. William R. Fearn, of Savannah, Ga., has patented a railroad switch which places the control of switches in the hands of the engineers or train-men. The switch levers are connected to a rod extending in both directions from the

**Fig. 4.—POWER WINDLASS FOR TIGHT AND SLACK BARRELS.**

switch, and fitted with crank levers extending between the tracks. These levers are operated by a swinging block or key hinged to the lower end of a hanger that depends from the car or locomotive platform, and which is actuated by a lever and rod to switch the cars from one track to another as required.

Mr. John Gearon, of Beloit, Ia., has invented an improvement in scythe snaths, which consists in a scythe snath formed in three parts, halved to each other, secured at their junctions by bolts, and provided with handles. By this construction the parts are rendered adjustable to suit the convenience of the operator, and the proper position of the scythe relative to the handles is secured without the usual bending in the manufacture of the snath when formed in a single piece.

Mr. J. B. King, of St. Paul, Minn., has patented a calendar inkstand, which is simple in construction, and serves as a perpetual calendar. The inkstand has the numerals of the days of the month arranged in a table at the front, whereas

**FIG. 5.—MACHINE FOR CHAMFERING HOWELING AND CROZING TIGHT AND SLACK KEGS BARRELS, AND CASKS.**

the names of the days of the week and of the months are arranged on the outer surfaces of two cylindrical ink-wells fitted into corresponding chambers of the stand, each chamber being provided with a vertical slot in front, through which these names may be read.

Mr. Albert G. Forster, of New York city, has patented a child's swing so constructed that the child cannot slide out of the swing while being swung and can be put into the swing quickly and easily

Mr. William H. Peyton, of Iuka, Miss., has patented a combined shovel, tongs, and pot-hook. The extremities of the legs of the tongs are made with hooks for lifting pots, etc., and when closed they form the handle for a detachable shovel, which may readily be attached or detached.

Mr. John Casey, of Jersey City, N. J., has patented a check receiver for use in restaurants, bar-rooms, and other places to receive checks handed in by customers. It not only exposes to view all the checks inserted, but also exposes, in a series, a certain number of checks last received, before they finally enter the receiver, whereby if a wrong check be inserted the error or fraud may be detected.

Mr. Andrew Climie, of Ann Arbor, Mich., has patented an improved bolt for the locks of cases and drawers in museums, etc., where a number of doors or drawers are required to be locked at the same time. He employs a series of bolts with sockets upon the sides of their bases, a series of bearings, one or more sliding rods carrying the bolts, one or more bent levers, and one or more connecting rods, by which mechanism one or more series of bolts can be simultaneously operated.

Mr. Horatio Ely, Jr., of Red Bank, N. J., has patented a railroad signaling apparatus, which consists of series of self-adjusting rocking bars secured below the rails parallel to the cross-ties, provided with arms projecting upward on the outside of the rails in position to be struck by advancing trains. Motion is communicated by wires or rods connected with the rocking bars to signals or guards in advance of the trains.

Messrs. Anthony W. Byers and James C. Dorser, of Sherman, Texas,

have patented an improved cotton planter so constructed that more or less seed can be planted as desired. A slotted hopper having a slotted feed-board controlled by springs, and a spiked feed-wheel supplied with prongs and curved plates, are the principal devices employed to accomplish the end sought, these devices being adjustable.

Mr. Jasper N. Blair, of Slippery Rock, Pa., has patented a car coupling consisting of a drawbar containing two longitudinally hinged spring-actuated dogs set a little apart, with their sloping faces presented toward each other, thereby forming a central wedge shaped opening into which the coupling link can be entered, caught, and held by the shoulders at the rear of the dogs. A segmental lever is employed for throwing the dogs apart in uncoupling the cars.

Mr. Eli C. Horne, of Jasper, Florida, has patented a cotton gin, which consists in a combination with a roller of a stationary superposed blade, yieldingly held to the face of the roll, and a subjacent reciprocating blade, having its upper edge arranged obliquely to the lower edge of the stationary blade. The cotton to be ginned is pressed by the reciprocating blade between the stationary blade and the roll, being fed thereto from a suitable feed-board.

Mr. Luther Homes, of New Orleans, La., has patented a grass-cutter so constructed as to cut the grass without any vibration or rotation of the knives as the machine is drawn forward, and which permits the knives to be readily detached and sharpened. The knives are constructed to yield to any undue obstruction. Short knives are arranged in oblique angular relation with two long knives, and the grass to be cut being drawn into the angles formed by the edges of the blades, is cut by the forward movement of the machine.

Mr. Robert J. Bowman, of Alexandria, Va., has patented an improved gang plow, planter, and cultivator, so constructed that it can readily

be adjusted for either of the uses specified, and can be made equally effective and convenient in either capacity. A number of novel arrangements of detachable and adjustable devices accomplish the ends sought.

Mr. W. H. Hickok, of East Troy, Pa., has invented a ditching machine for opening blind and tile ditches. A long axle is mounted on two wheels and provided with a pole having a long double-tree. This enables the wheels and team to straddle the ditch. The mechanism is carried by the axle, and is

very ingenious, a shovel being caused to penetrate the earth, which it raises and delivers upon either side of the ditch at will of the operator.

IMPROVED CLEVIS.

The clevis represented in the engraving is to be used on plows, harrows, and other agricultural implements. It may be readily adjusted to fit drawbeams of various dimensions, and may therefore be applied to any of the implements on a farm requiring a clevis. It consists of two bars hinged to opposite ends of a link, and connected with each other by a bolt which is pivoted to one of them and passes through the beam and through the other bar, and is provided with a nut which may be screwed down more or less to adapt the clevis to drawbeams of different sizes.

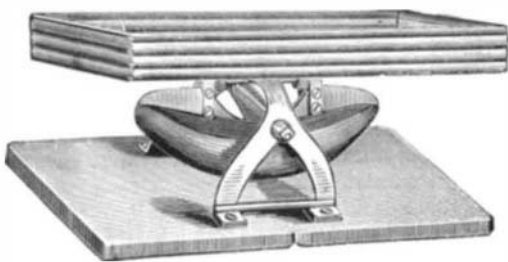
The curved link has several holes through it for receiving the hook to which the single tree or double-tree is attached.

This clevis may be applied to the beam horizontally, perpendicularly, or at any desired angle, either in front or at top or under the beam, as may be found most convenient.

Further information in regard to this useful invention may be obtained by addressing Mr. S. K. Latta Dyersburg, Tenn.

THE HUSTON SELF-LEVELING BERTH.

It is no new idea to suspend ship berths so that they will retain an even position at whatever angle the ship may be forced by the waves, and several steamship companies have tried and abandoned such devices. In the SCIENTIFIC AMERICAN of May 29, 1880, notice was made of a highly pro-



THE HUSTON SELF-LEVELING BERTH.

missing exhibition of the Huston ship's berth on the City of Alexandria, plying between this city and Havana. It is gratifying to know that the opinion which we then formed, with regard to the ability of the invention to overcome the causes of sea-sickness, has been justified by the behavior of the berth under a great variety of conditions at sea.

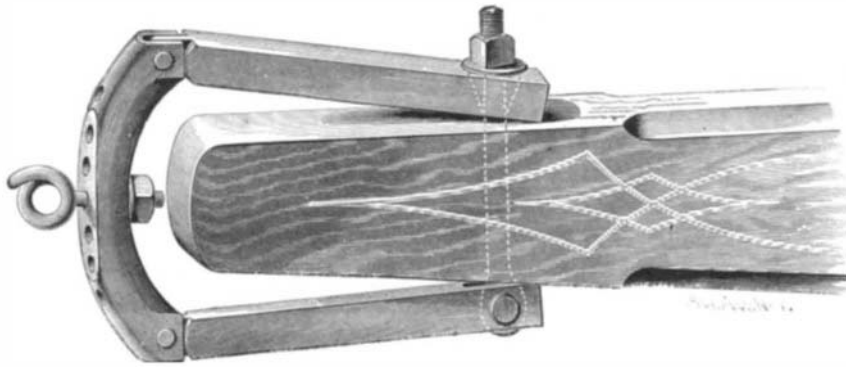
It will be observed from our illustration that the berth (with its occupant) is counterbalanced by a crescent-shaped weight rigidly attached to the underside of the berth, while the whole is so swung on a universal joint as to maintain a level surface no matter how the vessel may pitch and roll. The motion of the berth is also regulated by rubber bands, so that sudden or jerky movements are made impossible. As will be seen in the subjoined cut the berth takes up no more room than the ordinary ship's berth. Even those who never suffer from sea-sickness will appreciate the value of a contrivance which enables them to lie at ease in the roughest weather; while to invalids, and to those who are certain to be martyrs to the distressing *mal de mer*, the advantage of being substantially independent of the ship's motion while on board ship is beyond one's power to estimate. Obviously the plan here described can, at the best, prevent sea-sickness only while the patient is lying down. It is very desirable that some one should devise a means of preventing sea-sickness absolutely. A fortune would surely be his reward.

Launching a Ship.

Not one-half the people who witness the launching of a vessel can tell how it is done. They hear a great sound of pounding and driving of wedges for half an hour or so, then a loud shout is raised, and the ship starts slowly at first, but, gradually increasing her speed, slides with a steady, stately motion from off the pile of timber and blocks where she has been standing for months; and where but a moment before the huge creature towered aloft, nothing remains but a *débris* of timber and planks, while out on the water floats one of the most graceful works of man.

When the ship is about ready to launch, her immense weight rest principally upon blocks some eight or ten inches square on the ends, and perhaps some fifteen or eighteen inches in length. These blocks are placed directly under the keel, and in order to launch the vessel it is necessary to transfer the weight of the vessel to the way—two long lines of heavy timber reaching about two-thirds the length of the vessel on either side, and about midway the bilge or bottom. These ways are simply two lengths of timber with a thick layer of grease between them, so that as soon as the ship acquires any momentum they will slip one along the other. To transfer the weight of the vessel on to these ways, so that gravity—the stern or heaviest part of the vessel being much lower than the bow—will cause her to

move, is the whole secret of launching. To do this, between the top of the ways and the vessel are driven pine wedges, which, of course, raise her somewhat, and so relieve the blocks under the keel of part of the weight resting upon them. This done, workmen take their places under the vessel, and with iron wedges cut and knock away the blocks. When these are removed, the entire weight of the vessel settles at once upon the greased ways, and the result is exactly



JENNINGS' PLOW CLEVIS.

the same as would be if a person should seat himself upon a sled pointing downhill upon an icy slope—away she goes!

There seems to be a strange sort of fascination for most people in the launching of a large vessel, and in our ship-building ports it is not uncommon for a thousand persons to be present to enjoy the spectacle.—George Bancroft Griffith, in *Potter's American Monthly*.

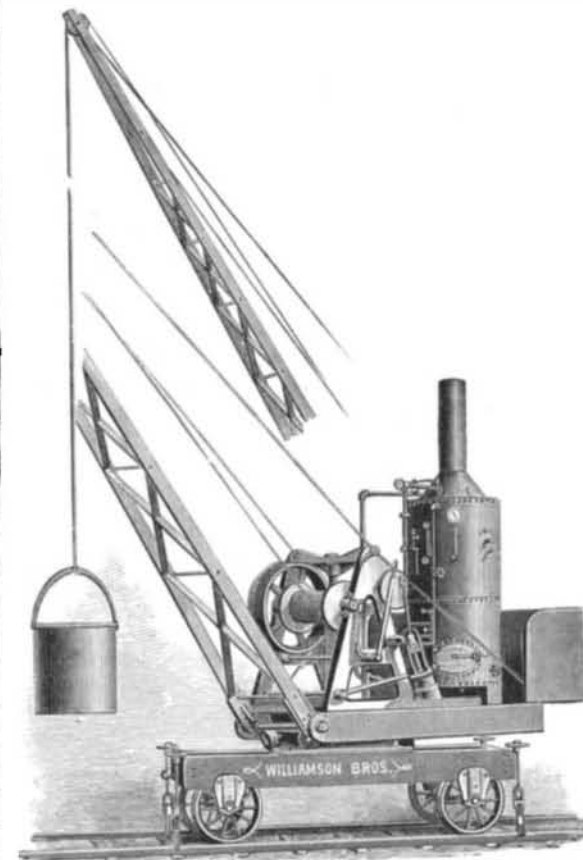
IMPROVED STEAM CRANE.

Handling heavy or bulky articles by sheer muscular force is becoming almost as rare where a great deal of lifting is required as it once was to handle unwieldy objects by steam, and in almost every place where any considerable amount of hoisting, loading, and unloading is required to be done, there steam is employed.

Our engraving shows a steam crane designed and built by Williamson Brothers, Richmond and York streets Philadelphia, Pa., for the Edgar Thomson Steel Works. It is suited to unloading cargo, and has a double engine, which communicates motion to the winding drum through friction gearing. This gearing, which is very simple, has been successfully applied to a large number of cargo hoisting engines for ship use by this firm. One lever controls the hoisting, stopping, and lowering of the load.

The crane is revolved on its base by a double cone friction clutch, which admits of turning the crane in either direction without reversing the engine.

The carriage and the base on which the engine and boiler rest are both made of wrought iron. The jib, which is of wrought iron, is made longer than usual to meet the particular work for which the crane is designed.



WILLIAMSON BROTHERS' STEAM CRANE.

The engines of this crane are 6 bore, 8 stroke, and develop 12 horse power. The machine complete weighs about 7 tons.

Messrs. Williamson Bros. make similar locomotive cranes suitable for light or heavy work, with spur gear for hoisting, revolving, traveling, and altering the radius of the jib, and their large experience in this class of machines enables them to construct hoists adapted to any purpose for which they may be required.

A SEAT FOR SHOP GIRLS.

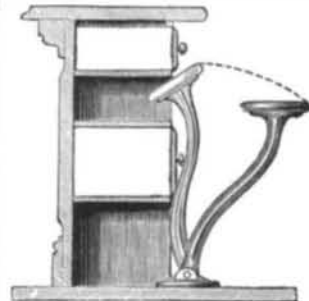
Scarcely a season passes without a general protest against the common rule in our retail shops requiring saleswomen to stand at all times, even when not serving customers. Physicians have denounced the custom as health-destroying and cruel; ladies have combined to secure its abolition by withholding their patronage from shops in which the girls are not allowed to sit; and our daily newspapers have repeatedly inveighed against the practice and called for its abolition. Still it prevails; not because of any hard-heartedness on the part of shopkeepers, but for purely practical considerations. In the limited space between counters and shelves there is no room for fixed seats of the usual construction, and movable stools would be still more in the way. To widen the space so as to make room for stools would only increase the labor of those who have to handle the goods.

As in most cases of inconvenience and suffering, so in this, it is not the philanthropist or the sentimentalist who must be looked to for a remedy, but the inventor.

What is required is a seat which shall be simple, inexpensive, always at hand when wanted, and able to take itself out of the way when it is not wanted. A step in this direction

has been made by an English inventor, who has patented the seat shown in the illustration herewith. The curved iron support carries a plain round seat of wood, and is hinged in the foot plate so as to be easily brought forward to be used or shut back against the counter when the attendant has to stand. It takes up but little room, and is evidently handy and serviceable.

It would be easy to make a stool for the same purpose that would take up still less room and be entirely automatic.



Seat for Shop Girls.

The standard should be set in a narrow slot or recess in the counter, and the seat pivoted off the center so as to drop edgewise and enable it to fit into the slot for the standard. The foot-plate would thus be entirely out of the passage, and the seat top nearly so, when not in use. A bit of rubber under the forward part of the hinge of the base to be

compressed when the seat is in use would suffice to swing the seat into its recess the moment the attendant rises. By this arrangement the seat top would not be in the way of drawers or shelves, as in the English plan; and the much desired relief would be afforded to the saleswomen with the least cost of counter space and no obstruction of the passage way.

We look to our enterprising makers of counters and other shop fittings to introduce some improvement of this sort.

Fatal Discipline.

Archibald Gibson, Second Lieutenant Seventh U. S. Cavalry, died in St. Paul, Minn., January 26. The cause of his death was inflammation of the brain, said to have had the following curious origin. One day, while he was on parade at West Point, a spider got into one of his ears. By the rules, he was not allowed to raise his hand, and stood in the ranks more than an hour, while the spider worked his way into the ear. When dismissed his ear was full of blood, and the insect could not be removed for two days. The injury caused him much trouble, but did not prevent his assignment to his regiment in Northern Dakota. After some service, Lieutenant Gibson returned to his home in St. Paul, intending to resign, but, really, to die. His death is charged to inflammation of the brain, caused by necrosis of the inner wall of the skull adjoining the ear, the result of the spider's invasion.

A Great Drainage Project.

It is reported from Florida that an agreement has been entered into between the State authorities and certain Northern and Western capitalists to drain Lake Okeechobee and the great swamp region southward known as the Everglades. The lake is about thirty miles by forty, and the entire area to be reclaimed is nearly twice as large as the State of New Jersey. The projectors claim that the drained land will make the best sugar country in the world. How they propose to accomplish the work is not stated. So long as the South has so much waste land suitable for sugar growing, without drainage, an undertaking of the sort described would seem to be rather speculative than practical.

How to Use Oil Stones.

Instead of oil, which thickens and makes the stones dirty, a mixture of glycerine and alcohol is used by many. The proportions of the mixture vary according to the instrument operated upon. An article with a large surface, a razor, for instance, sharpens best with a limpid liquid, as three parts of glycerine to one of alcohol. For a graving tool, the cutting surface of which is very small, as is also the pressure exercised on the stone in sharpening, it is necessary to employ glycerine almost pure, with but two or three drops of alcohol.