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AMERICAN INDUSTRIES.—No. 66.

BARREL MACHINERY.

Our commodities are handled and stored to a great extent in packages which may be classed under the general head of barrels; these packages are cheaper, stronger, and easier handled than other forms, and in many instances they are the only practicable package. Oil, liquor, pork, flour, sirup, sugar, and many other articles that could be named are almost without exception packed in barrels. The enormous demand for packages of this class have rendered their manufacture one of the leading industries of the day.

Not many years ago barrels were made almost exclusively by hand, but in this, as in all other manufactures of any magnitude, machinery has been demanded and is now furnished for the majority of operations in barrel making, and as a consequence the article has been both improved and cheapened.

In the manufacture of machinery for making staves, heading, hogsheads, barrels, and kegs, Messrs. E. & B. Holmes, of Buffalo, N. Y., undoubtedly take the lead, their machines being in use the world over.

Our engravings represent several of these machines of the most recent and approved styles. We understand that this firm make some forty different machines for the manufacture of barrels.

Fig. 1 shows a machine for dressing staves on both sides for beer kegs, barrels, and heavy casks. It takes the stave out of wind, and does heavy work that has heretofore been done by hand. This has been greatly needed, and is of great value to makers of casks. It receives the stave in the rough rived state, and while dressing both sides of the stave simultaneously, brings it to an even thickness, and takes all of the wind and crook out of it. It is contrived so as to save all of the timber that can possibly be saved, and will dress the staves as rapidly as the attendant can put them into the machine. After being dressed in this machine the staves are passed through the inside stave dresser, shown in Fig. 2, which hollows out or thins from the inner side of the central part of the stave, leaving it of the original thickness at the ends. This machine is more especially designed for preparing staves for beer kegs, barrels, and other large and heavy casks, the idea being to leave the ends of the cask full thickness to receive the heads, while the central portion of the cask is made thinner to increase the capacity of the cask and to allow the staves to be drawn into the barrel form with the application of less power and with less breakage than with staves of the usual form. This machine is very rapid in its operation, finishing with ease 6,000 staves a day.

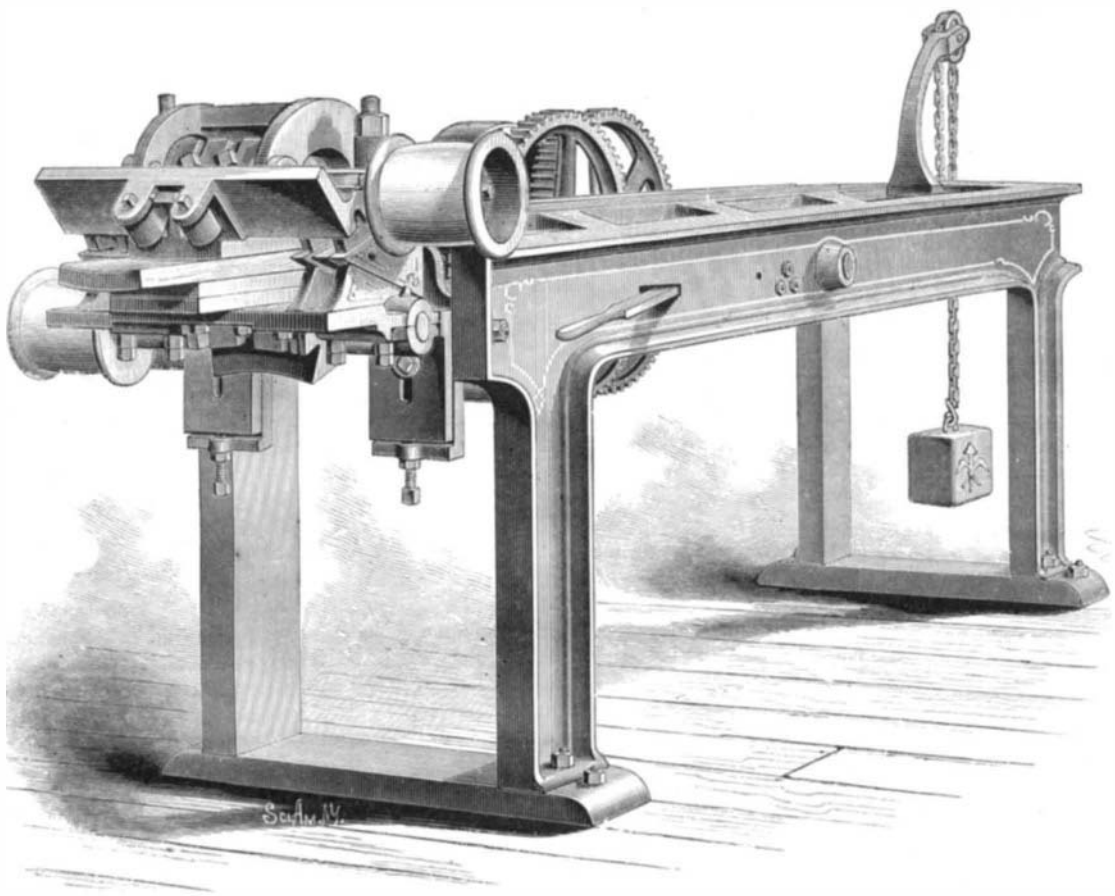

Fig. 1.—MACHINE FOR DRESSING STAVES FOR BEER KEGS BARRELS AND CASKS

The next machine in the order of sequence is the combined fan and stave jointer, shown in Fig. 3. It is capable of jointing staves of different lengths and thicknesses, and will work equally well on rived and sawed staves, taking out all winds and crooks by means of the powerful clamps attached. The capacity of this machine is 8,000 staves per diem.

The casing inclosing the jointer wheels is constructed so that it makes an exhaust fan of the machine, which carries the savings through suitable conductors to any desired distance. This machine joints staves for all kinds of casks for oil, spirits, sirups, etc., also for beer kegs and barrels, and finishes the stave ready to set up.

The machine shown in Fig. 4 is for drawing the staves together at one end of the cask after the other ends of the staves have been set up in the head truss hoop. This machine is operated by screw power, and will draw together the most stubborn casks, and is adapted to various sizes. An expert operator can windlass from 1,200 to 1,500 barrels per day on this machine. The wire rope being placed around the cask and the power applied, the staves are very quickly brought together, when the remaining truss hoop may be put on, when, by depressing a foot lever, the cask is instantly relieved, and the machine is ready for another.

Messrs. E. & B. Holmes make a truss hoop driving machine (not shown) which drives the truss hoops with such power as to compress the wood of the staves and make perfectly tight joints.

[*Continued on page* 114.]

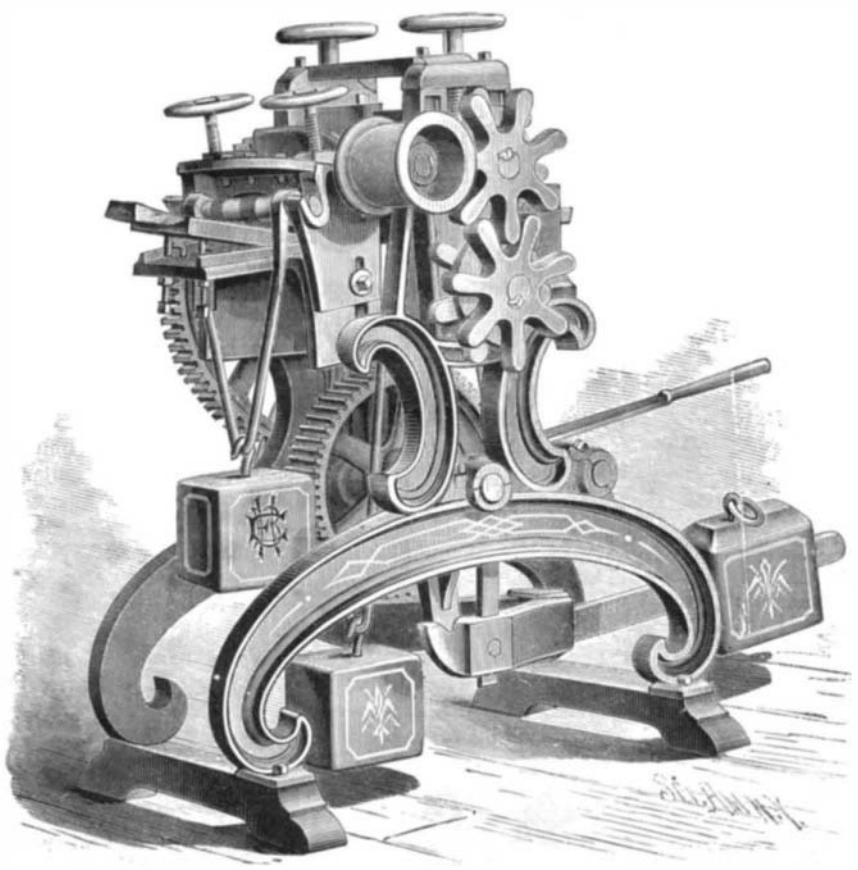

Fig. 2.—MACHINE FOR HOLLOWING STAVES FOR BEER KEGS, BARRELS, AND CASKS.

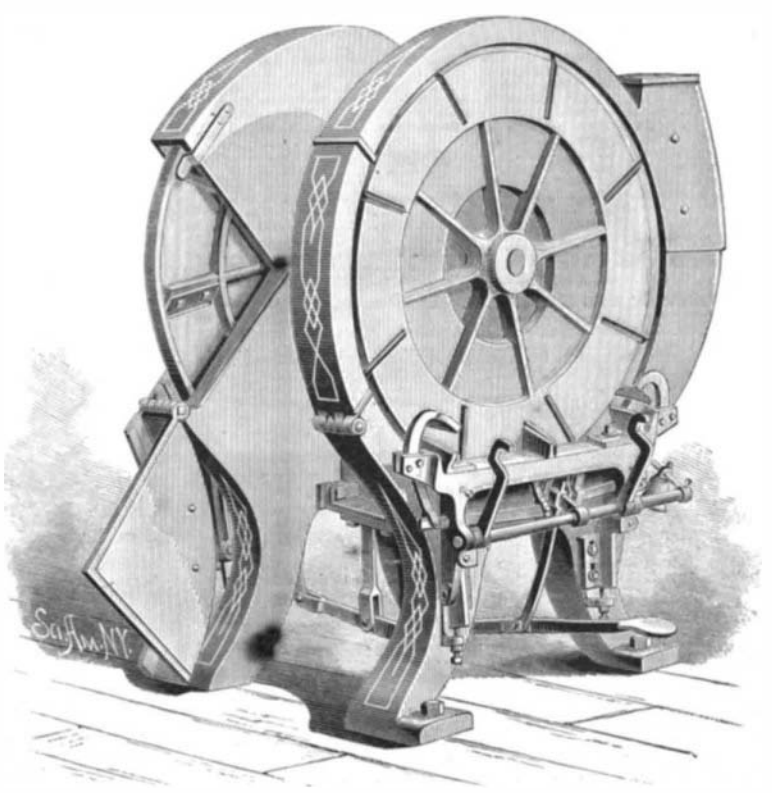

Fig. 3.—COMBINED FAN AND STAVE JOINTER.

BARREL MACHINERY MADE BY E. & B. HOLMES, BUFFALO, N. Y.

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 tbe arma- ture 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. Trübner & 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 Sirnguey, 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 regu lating 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 tbe 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., bas 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

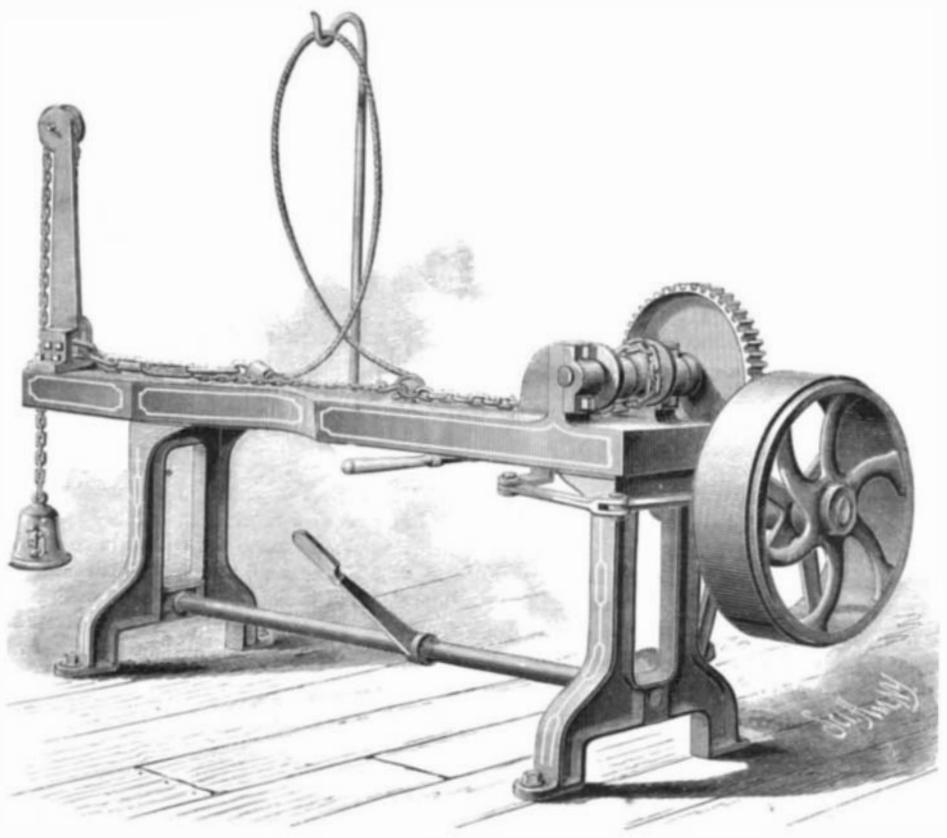

Fig. 4.—POWER WINDLASS FOR TIGHT AND SLACK BARRELS.

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

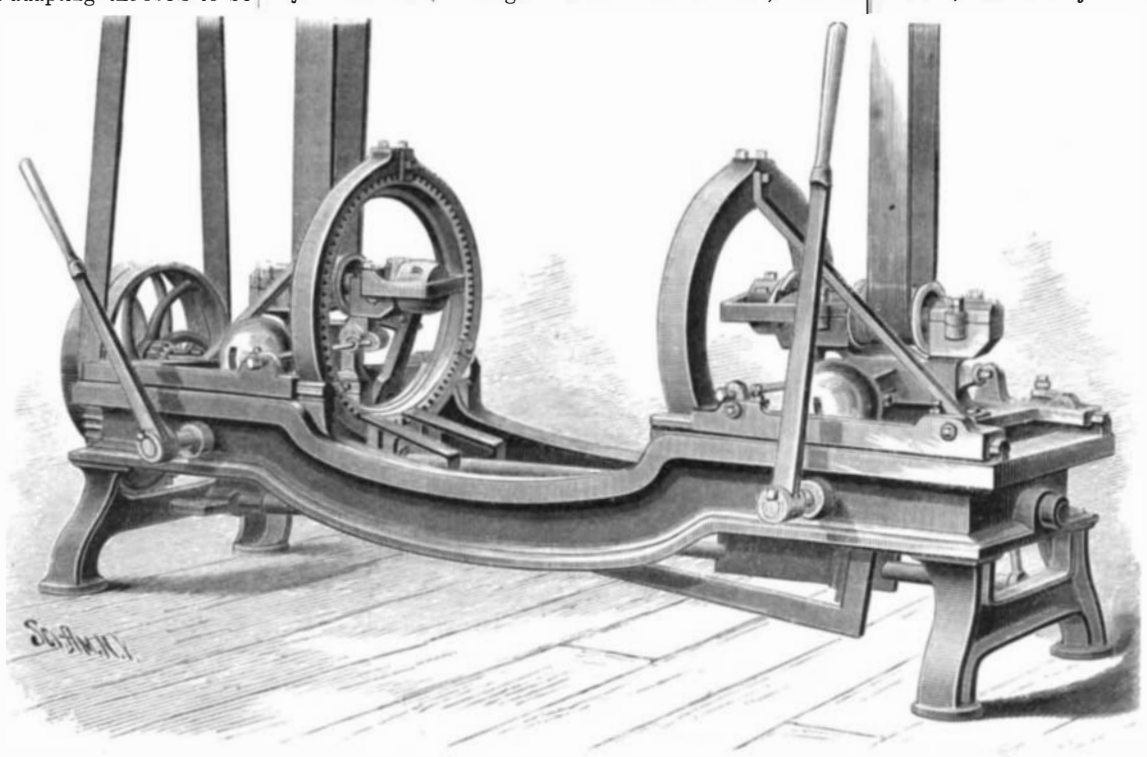

FIG. 5.—MACHINE FOR CHAMFERING HOWELING AND CROZING TIGHT AND SLACK KEGS BARRELS, AND CASKS.

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 urdue 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 tbe wheels and team to straddle the ditch. The mechanism is carried by the axle, and is