

UNITED STATES PATENT OFFICE.

OTTO KROMER, OF SANDUSKY, OHIO.

IMPROVEMENT IN CIDER AND WINE PRESSES.

Specification forming part of Letters Patent No. 129,836, dated July 23, 1872.

To whom it may concern:

Be it known that I, OTTO KROMER, of Sandusky, in the county of Erie, State of Ohio, have invented a new and useful Improvement in Cider and Wine Presses; and I do declare that the following is a true and accurate description thereof; reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a perspective view of my improved wine-press as constructed to be operated either by hand or power. Fig. 2 is an enlarged horizontal section of a portion of the hand worm-shaft and one of its sliding boxes taken on the plane *x x* in Fig. 1. Fig. 3 is an enlarged cross-section of the nut-block and nut of the press-screw, and Fig. 4 is a section of the lower bearing of the press-screw.

Similar letters of reference indicate corresponding parts in the several figures.

The nature of this invention relates to certain improvements in the construction of wine and cider presses designed to be operated by either hand or power, or both—that is to say, the press can be a combined device, capable of being operated either way. It has for its object to give great speed to the press at the commencement of the pressing operation, and great power, with a corresponding decrease in speed, as the operation proceeds, when used as a hand-press; as a power-press, great power, simplicity, and durability in construction and ease in operation. The invention consists in the peculiar construction and arrangement of the devices for operating the nut and beam when used as a hand-press, and for operating the screw when used as a power-press; also, in the peculiar construction of the curb.

In the drawing, A represents the bed-sill, on which are framed two cross-sills, B, which support the platform C. D D are uprights framed into the ends of the sill A, and are connected at the top by a girt, E. The uprights and girt are not necessary in a hand-press, but as a power or combined press they are. In the center of the girt there is a bushed opening, forming a bearing for the upper end of the screw F, which is sustained by a nut, *a*, threaded in its top projecting end, above the girt. The platform has a raised ledge, *b*, at the periphery to retain the expressed juice and deliver

it at the spout *c*. G is the grating which supports the cheese above the platform. H are the planks laid on it, (the cheese,) and I are the blocks lying across the planks, and on which the pressure is exerted and, in turn, transmitted to the cheese. J is the curb, in two semicircular sections or segments, composed of vertical slats secured to two strips of strap-iron of a flexible character, with a staple, *d*, near the end of each strap. Over these staples are fitted two plates, K, at each junction, one plate over the adjacent staples of the top strap and another over those of the lower strap, being slotted for the purpose, and then a rod, *e*, is inserted vertically through the staples at the end of each segment. By removing one pair of these rods the curb may be readily opened out and removed from the platform, to enable the operator to take away the expressed cheese with greater facility than is possible with the ordinary forms of slatted curbs. L is the nut on the screw, having a flange at the lower end. M is the nut bar or beam suspended from the nut by a pair of hooks, *f*, secured to the middle of its sides, and which engage with or overlap the flange of said nut. On the upper or bearing face of the beam M a washer, *g*, is secured for the nut to bear against; but, to reduce the coefficient of friction, I prefer to turn an annular groove in the face of the nut-flange and a corresponding one in the washer, in which to place a number of metallic spheres, *i*, and thereby lessen the friction at that point. The screw, of course, must pass through the beam M. N is a spur-gear keyed to the nut, with which meshes a pinion, O, on a vertically-journaled shaft, P, in a frame, Q, of cast-iron, secured to the top of the beam M near one end. The shaft P may be rapidly revolved by a cranked hand-wheel, P', or very slowly, but with great power, through a worm-gear, R, keyed to its lower part, through a worm, S, on a shaft, S', journaled in sliding boxes *h*, as seen in Fig. 2. The shaft S' extends beyond each end of the beam M and is cranked so as to be rotated by one or more persons. The sliding boxes *h h* in the sides of the frame Q enable the worm S to be moved out of gear with the worm-wheel R when a rapid movement of the bar M is required, or vice versa when more power is necessary, being, in the latter case, held up to place by cams *j* pivoted

to the sides of the frame; or any other suitable device may be employed for the purpose. As a hand-press, the nut turns, while the screw must stand fast, which is effected by two set-screws, T, passing through the sides of a collar, U, secured to the under side of the beams C' secured to the under side of the platform C, the points of the screws entering an annular groove in the lower part of the screw, which is packed where it passes through the platform, to prevent waste of expressed juice. As a hand-press, these set-screws and the bearings support the screw, and the top girt may be dispensed with. As a power-press, the screw turns and the nut stands still. In this case the set-screws T T are loosened. A worm-wheel, V, is secured to the upper part of the screw, which derives motion from a worm, W, on a counter-shaft, X, journaled in brackets Y Y projecting from the girt and carrying a fast pulley, Z, with a loose pulley, Z', at either side of it. On these latter are arranged an open and a cross belt, run by any convenient line of shafting, and so arranged that either belt may be shipped on the fast pulley, and thus rotate the screw in either direction.

When used exclusively as a power-press, the hand driving-gear may be dispensed with; but, as a large proportion of vine and fruit growers are provided with horse-tread powers, if not with steam-engines of the portable class, it is found advisable to fit up the presses so that they may be used with power, if convenient, or driven by hand, if not attainable. In the latter case, by withdrawing a pin, *p*, from one of the brackets, that end of the shaft X and its box may be drawn back far enough to throw the worm W out of gear.

What I claim as my invention, and desire to secure by Letters Patent, is—

The sills A B B, platform C, screw F, nut L, bar M, hooks *f*, spur-gears N O, shaft P, hand-wheel P', frame Q, worm-gear R, worm S, shaft S', sliding boxes *h*, and set-screws T, constructed, arranged, and operating substantially as described, for the purposes specified.

OTTO KROMER.

Witnesses:

CHAS. CROSS,
WM. EVERINGHAM.