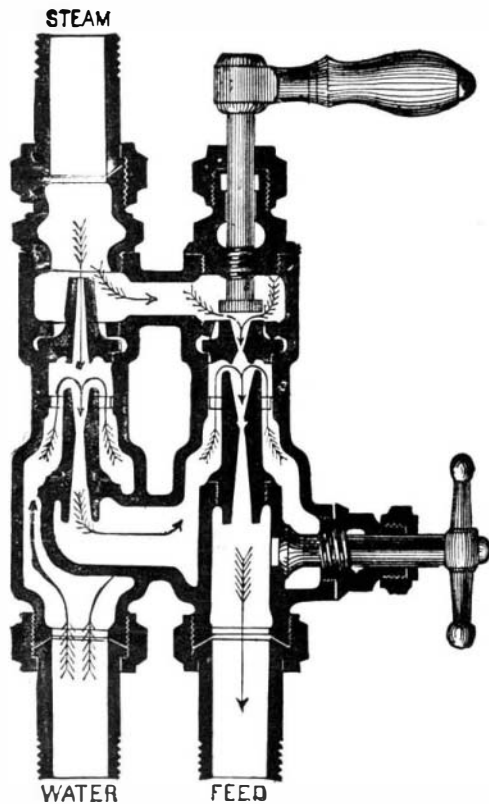


THE HANCOCK INSPIRATOR

One of the recent contributions to hydraulic engineering—and one which promises to be of great value to all users of steam—is the “inspirator,” so called, an invention patented by John T. Hancock, of Boston.

The inspirator is a compound steam jet apparatus, for raising and forcing water, designed to do the work ordinarily accomplished by pumps and injectors, with greater economy and regularity than has yet been possible with these machines.

The Hancock inspirator consists of a combination of two sets of apparatus, contained each in a separate chamber, one being employed for lifting water from a well or other



LONGITUDINAL SECTION OF HANCOCK INSPIRATOR.

source of supply, and conveying the same to the second apparatus, which transmits it to the boiler, or forces it against a greater pressure than that of the impelling steam. The lifting apparatus raises water more than 25 feet, and can be used independently of the forcing apparatus, for raising water to a moderate height, thus supplying the place of a suction pump or a steam jet pump.

The sectional view shows the simplicity of construction which characterizes the inspirator. The illustration represents the form used on stationary boilers. Steam enters through the pipe marked STEAM, the water from the well is drawn through the pipe marked WATER, and the condensed steam and water issue through the pipe marked FEED.

The apparatus on the left in the engraving is for lifting, that on the right for forcing. No adjustment is necessary for varying steam pressures, but the quantity and temperature of the water can be varied by increasing or reducing the quantity of steam or water supply.

For locomotives the form of the inspirator is somewhat modified, but the principle is the same.

The continuity of the jet of steam and water never being broken by the jar of a locomotive passing over switches and frogs, the inspirator is a more reliable feeder than a pump. It is not appreciably affected by wear, nor is its action liable to be stopped by sediment in the water.

On locomotives the lifting apparatus serves an important purpose as a regulating device, making this instrument more sure and positive in its action.

We are informed that although the inspirator has been but a comparatively short time before the public, a large number of them (over 4,000) are now in use, and that they have thus far given general satisfaction.

Many advantages over a pump are claimed for it as it needs no packing, it is not noisy, and it can be adjusted to feed the boiler continuously, which is acknowledged by all engineers to be the best and most economical method of feeding.

The inspirator is manufactured by the Hancock Inspirator Company, office 52 Central Wharf, Boston, Mass.

Houses for Workingmen.

The Chicago *Tribune* mentions a building scheme which the Union Mutual Life Insurance Company propose to carry out upon some of their vacant property in the southern part of Chicago. The plans are the work of Messrs. Wheelock & Clay. The problem of building houses in a continuous block, and yet having, to a great degree, the appearance of isolation, is accomplished by a double court in front between each pair of houses; this feature, besides giving ample light and ventilation to all inner rooms, affords the architects an opportunity of displaying considerable variety in the treatment of their designs, not only of the exterior, but of the interior. The courts in the rear are quite similar to those in front, leaving only a short line of party wall between the two houses. As the courts are thus in pairs, they give double the amount of light, and yet the windows are so arranged that it is impossible to see from one into any other. Also, by an ingenious arrangement of the staircase in each alternate house, the front entrances are entirely separate and come in regular succession.

These houses are to be of two stories, with cellar and attic; in the cellar are the laundry, furnace room, storerooms, etc. Each house has a parlor, hall, and staircase hall, dining room, kitchen, etc., upon the first floor; part of them have a library in addition, all well lighted and ventilated. The main stairs are at the rear of the parlor, and not exposed to view upon entering or leaving the entrance halls, which are to have tile floors, open and unobstructed.

A NEW CHECK ROW CORN PLANTER AND DRILL.

The accompanying engraving shows a new agricultural implement recently patented by Mr. Osman C. Du Souchet, of Alexandria, Mo. It is designed for planting corn in accurate check rows, and it is constructed so that all parts of its mechanism are under the control of the driver. The working parts of the machine are supported by wheels having a very broad tread, and by hollow standards, A, connected with the runners or plows, B. Seed boxes, S, are mounted on a frame that is jointed to another frame connected directly with the axle, and the seed valves are operated by a common bar that is connected with a lever, G, which is actuated by two cam lugs, F, placed on opposite sides of the axle. These lugs strike opposite sides of the beveled end of the lever, G, in alternation, and thus impart to the lever and to the seed valves a reciprocating motion. A section of the axle bearing the cam lugs is shown in Fig. 2.

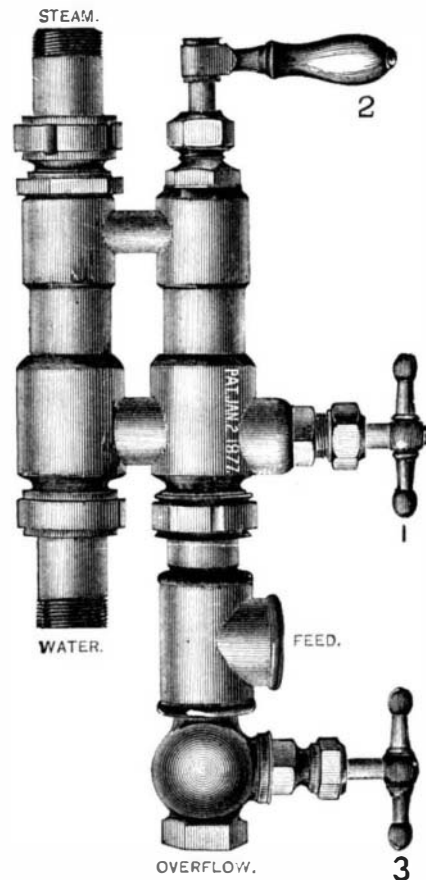
The frame that carries the runners and seed boxes may be raised or lowered by moving the lever, J, and it may be maintained in a raised position by means of a latch, shown at the rear of the seat. The lever, C, is supported by a slide, which is moved by the lever, L, so as to throw the lever into and out of engagement with the cam lugs on the axle.

At one side of the machine there is upon the axle a spur wheel, which may be turned by the lever at the left of the seat whenever it is desired to change the relative position of the cam lugs on the axle. To admit of this adjustment the drive wheels are connected with the axle by pawls and ratchets. As the machine moves forward the runner, B, makes a furrow, into which the seed is dropped through the hollow standards, A. The wheels, having a wide tread, follow the runners and cover the seed.

California Raisins.

About four years ago Mr. J. P. Whitney, a gentleman widely known in California in connection with wool growing and grain raising on a large scale, began planting vines of the “Muscat of Alexandria” variety of white grapes, with a view to demonstrating that raisins can be made in America of as good a quality as those from abroad. Since that time about 200,000 vines have been planted. As the first

result of Mr. Whitney's experiment two car loads of 20,000 lbs. each of California-made raisins were recently sent East, one car load coming to New York city, and the other going to Boston. The New York *Times* reports that in both cities they have been received with favor, selling equally well with the best imported Malaga raisins, with which they compare favorably as to size, color, skin, stones, and flavor—the latter being the most essential quality. The United States is the greatest raisin-consuming country in the world, and uses annually more raisins than the whole of Europe. The market is mainly supplied from Spain, the raisins known as “Ma-



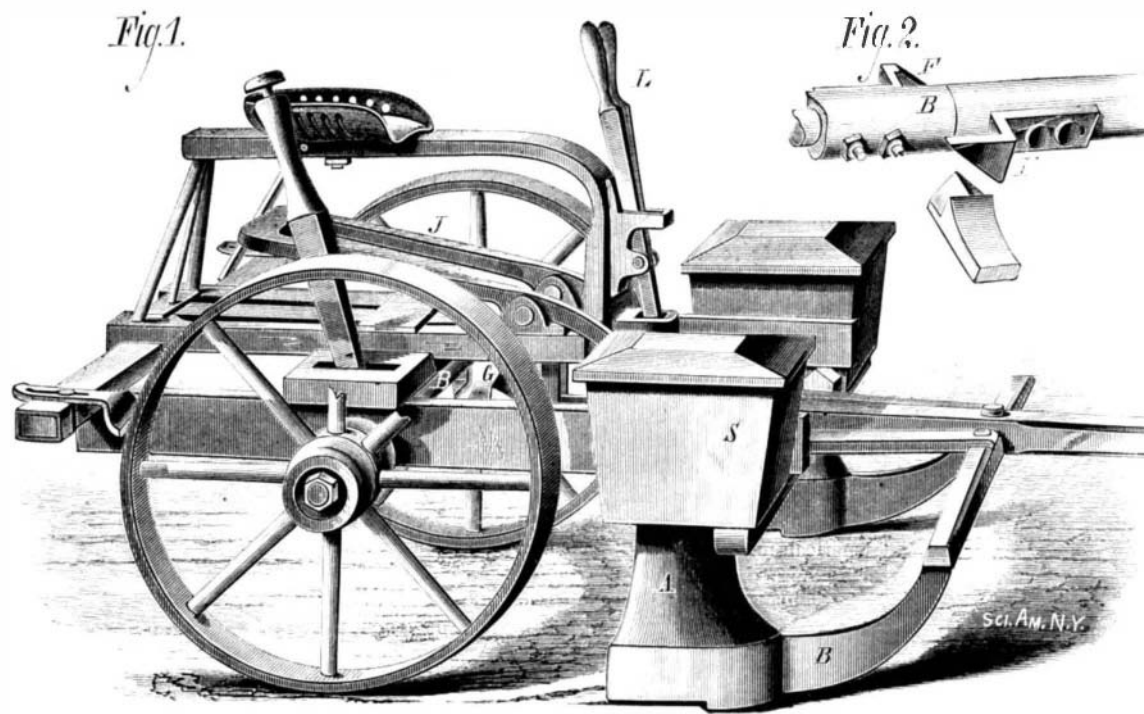
HANCOCK INSPIRATOR.

lagas” being considered the best. They come from a comparatively narrow strip of country in the south of Spain, which has hitherto been regarded as surpassing all other regions for raisins of that character. The annual yield of Malaga grapes averages 2,250,000 boxes of 20 lbs. each. It sometimes reaches 2,500,000 boxes, and last season about 2,000,000 boxes were marketed. Of this enormous yield the United States takes fully one half, on which it pays a duty—as on all other raisins—of 2½ cents per lb.

The American raisins are made from a white grape, the “Muscat of Alexandria,” to the raising of which the soil and climate of a large portion of California are well adapted. The vine begins to bear somewhat in the second year, although the full bearing capacity is not developed until it is five years old, and continues to bear for about half a century, and sometimes for 75 years. In the cultivation of raisin grapes American grape growers have little to learn from Spain, but in the curing and packing of the raisins a lack of experience is still felt.

The raisins are not cured by any artificial process, however, but in a comparatively simple manner. The grapes are laid on gravel beds, and are exposed to the sun for ten or twelve days in August or September, when they are ready for packing, having turned from white to brown, and gradually changed to the familiar dark color of the raisins of commerce. The white sugar which is generally found attached to the raisins sold in the market is entirely a natural product of the grape, and comes on with age, first appearing, as a rule, when the raisins are about two years old. The packing, however, is an operation which requires great care. To properly pack a single 20 lb. box the entire time of one man is needed for a day and a half, so careful is the manipulation of the raisin bunches, while at least as much time is required to select and pick over the bunches before packing. Mr. Whitney believes, however, that raisins can be cured in California fully equal to the Malaga or any other raisin.

The chief difficulty with which the California raisin raiser will have to contend



DU SOUCHET'S CHECK ROW CORN PLANTER AND DRILL.