3 Sheets--Sheet 1.

F. WELDON.

Apparatus for Compressing Cotton, Hay, &c.

No. 137,160. Patented March 25, 1873.

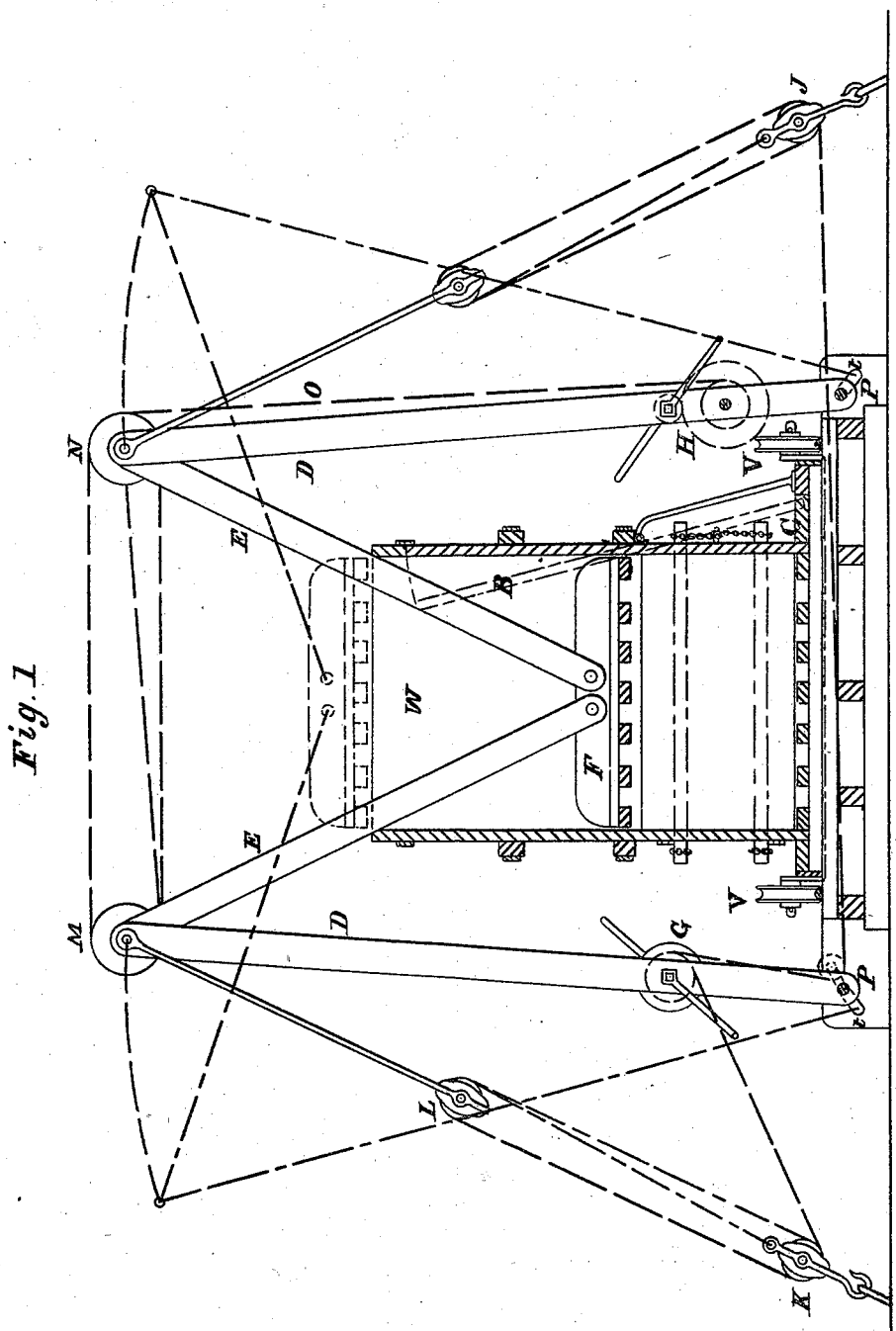


Fig. 1

Witnesses.
Weldon & Mooney
Thomas Weldon

Inventor.
Francis Weldon

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Fig. 2

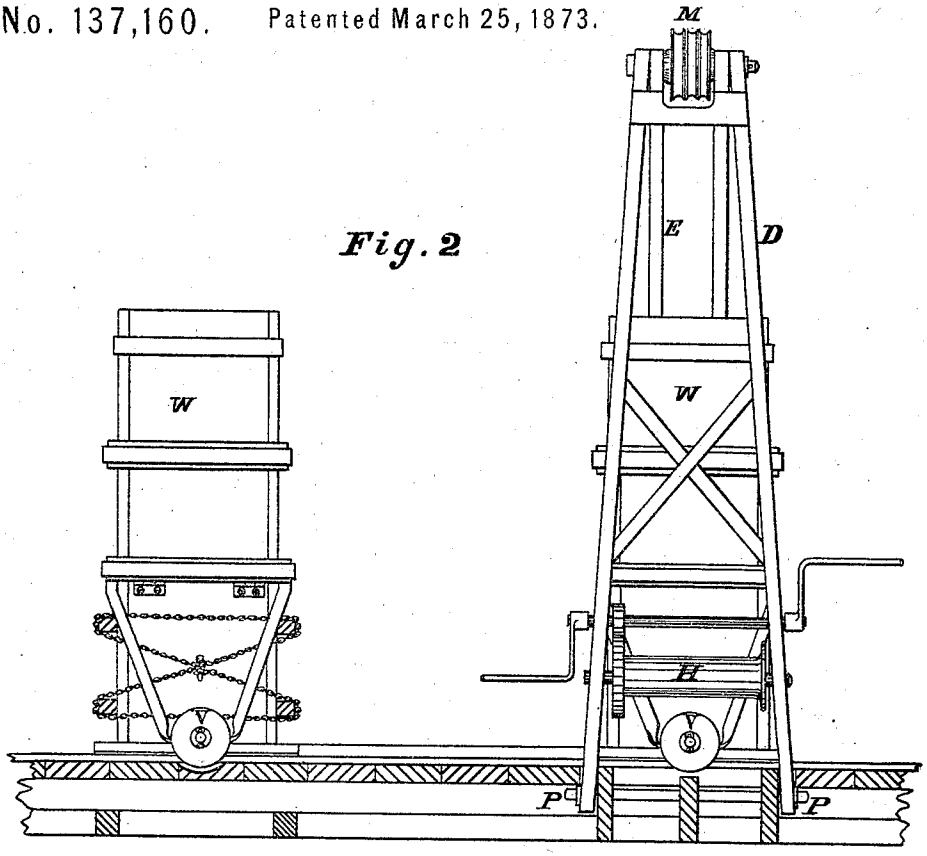
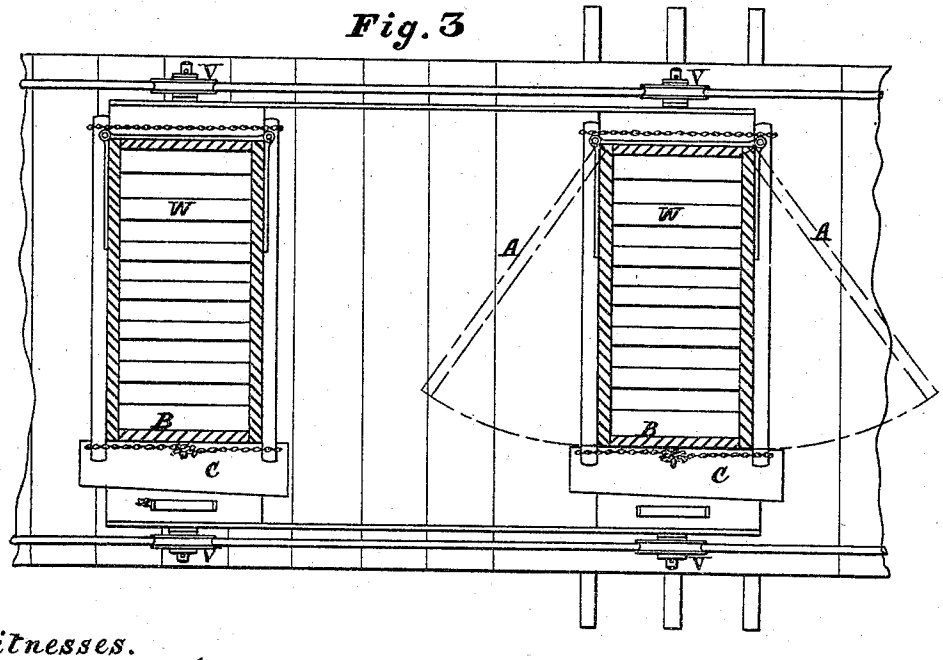


Fig. 3



Witnesses.
Weldon & Mooney
Thomas Weldon

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Francis Weldon

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F. WELDON.

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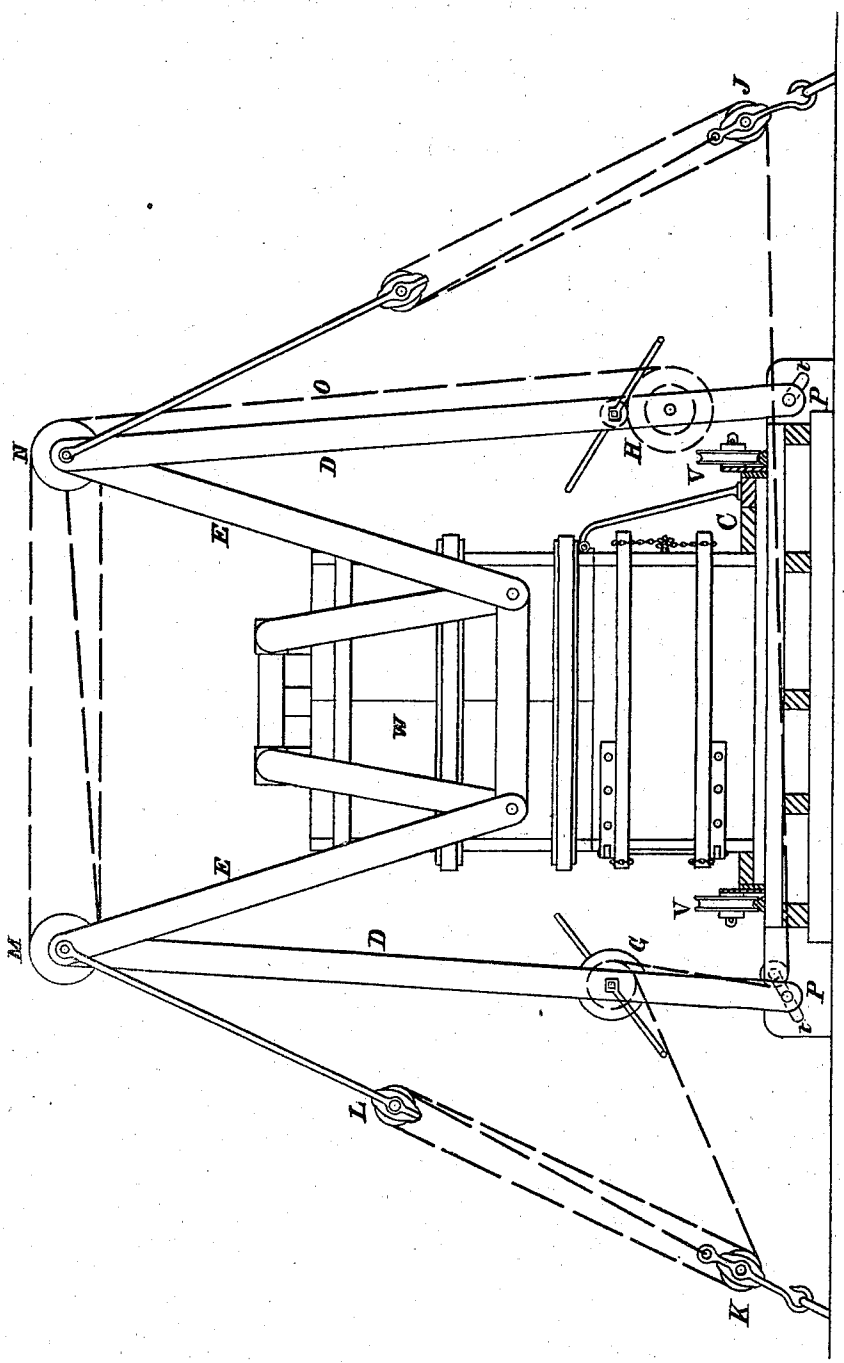


Fig. 4

Witnesses.
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UNITED STATES PATENT OFFICE.

FRANCIS WELDON, OF KILMORONY, IRELAND.

IMPROVEMENT IN APPARATUS FOR COMPRESSING COTTON, HAY, &c.

Specification forming part of Letters Patent No. **137,160**, dated March 25, 1873.

To all whom it may concern:

Be it known that I, FRANCIS WELDON, of Kilmorony, Queen's county, Ireland, have invented Improvements in Presses or Compressing Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1, Sheet I, is an end elevation of the press, partly in section. Fig. 2 is a side elevation, and Fig. 3 is a plan. Fig. 4 is an end elevation of a press differently arranged.

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

This invention relates to novel arrangements of apparatus for pressing, and is especially applicable to presses used for the purpose of compressing cotton, wool, or other fibrous substances, in order to form them into bales. My object is to compress such substances by placing them in a movable chest, into which a ram is made to descend by means of levers and beams worked by windlasses and ropes, and arranged so that the pressure gradually increases as the ropes are wound upon the windlasses.

The following description of my invention will enable others skilled in the art to understand it.

In the annexed drawing, W is a chest of suitable form and size, into which the material to be pressed is placed. It is mounted on rollers or wheels V running upon rails fixed upon the ground or upon the floor of the building in which the press is placed. I prefer to use two or more such chests, as shown in Fig. 2, and to arrange them so that when one of them is brought under the press in such a position that its contents may be pressed, the other one (or more) may be removed from the press to a sufficient distance, and may there be filled with the substance to be pressed, or may have the pressed bales removed. The different chests may be connected together by frames so as to run upon the same wheels. Upon two sides of the lower part of each chest I make two swinging doors, A, turning upon hinges, and upon a third side I make a tilting door, B, turning upon a horizontal hinge at or near its center, and when this tilting door is closed I secure it at its lower part by means of a wedge-piece, C, driven between it and a part of the frame upon which the chest stands, and which carries the wheels already described. I secure the two swinging doors by means of chains or ropes coiled round their ends or round beams or bars attached to them, and I tighten the chains by means of screws, or by means of bolts or spikes, which are used to twist the chains; and I brace or strengthen the doors themselves in order to enable them to withstand internal pressure; and in order to press the substance in the chest which has been brought under the press, I use a suitable head or ram, F, descending vertically and fitting or nearly fitting (in plan) the interior of the chest. I place two independent pairs of shear-legs or beams, D D, arranged nearly vertically, one pair at each side of the press, and having their lower ends turning upon joints or hinges P, outside the rails upon which the wheels carrying the chest run, and to the upper ends of these shear-legs I attach, by means of joints or hinges, two pairs of arms or beams, E E, the lower ends of which are hinged to the ram F, already described. By the arrangement described, if the upper ends of the shear-legs are made to approach each other, the arms or beams press the ram downward with a force which increases as the arms become more vertical. In order to make the upper ends of the shear-legs approach for the purpose of depressing the ram, or separate for the purpose of elevating it, I attach a coiling-barrel or windlass, G H, near the lower end of each pair of shear-legs D D. Round one of these barrels or windlasses G I coil two ropes or chains, one of which passes downward, and is carried round a pulley and under the chest and rails to a point sufficiently beyond the opposite pair of shear-legs. It then passes round a pair of pulley-blocks, J, the lower one of which is anchored or fixed to the ground or to a suitable foundation, and the upper one is fixed or connected to the top of the shear-leg D opposite to that upon which the barrel G is fixed round which the rope is coiled. The other rope upon the same barrel passes round a similar but opposite pair of pulley-blocks, the lower one of which is fixed or anchored in the way described, and the upper one is fixed or connected to the top of the shear-leg D to which the barrel G is attached. By this arrange-

ment, when the ropes are coiled round the barrel or windlass, the upper ends of the shear-legs are separated and the ram is consequently raised in the press out of the chest. To the coiling barrel or windlass H upon the other shear-leg D, I attach a chain or rope, O, which passes upward and round pulleys or pulley-blocks M N, attached to the upper ends of both shear-legs. When this rope or chain is coiled round the windlass the upper ends of both shear-legs are drawn together with great power, and the ram is thus forced down upon the substance in the chest with an increasing or accumulating pressure. I prefer to make the pivots upon which the lower ends of the shear-legs turn move in diagonal guides or slots *t t*, arranged so that when the pressure increases, the lower ends of the shear-legs (which are then in tension) approach one another, and the arms which force down the ram become more nearly vertical, thus increasing the pressure and enabling chests of greater height to be used.

Sometimes I invert the apparatus so that the ram may be pressed upward instead of downward, and in such case I sometimes use chains instead of the shear-legs described.

Sometimes instead of hinging the lower ends of the arms or beams E E to the ram, I bring them down outside the chest, as shown in Fig. 4, and I hinge them to bars or beams R R, which pass upward, and are fixed or connected to the tops of other beams or frames S, which pass down inside the chest and are fixed to the ram. T is a strengthening-bar, which keeps the lower ends of E E in their proper position. By this arrangement the shear-legs D D and the arms E E can be brought into a more vertical position, and the power is thereby increased, and the chest W can be made of any height.

Sometimes instead of applying the shear-legs and arms directly to the ram in the different arrangements described, I cause them to move a separate lever to which a ram can be attached.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. One or more press-boxes, W, mounted upon wheels V, which are guided by rails, in combination with the vibrating shear-legs D, beams E, and ram F, substantially as and for the purposes explained.

2. The combination, with the swinging shear-legs D D and the beams E, of the windlass G and H, and the ropes and pulleys J K M N, arranged substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANCIS WELDON.

Witnesses:

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19 *Upper Mount St., Dublin.*

THOMAS WELDON,
Captain Madras' Staff Corps.