

J. WATSON.
Baling-Press.

No. 220,044.

Patented Sept. 30, 1879.

Fig. 1.

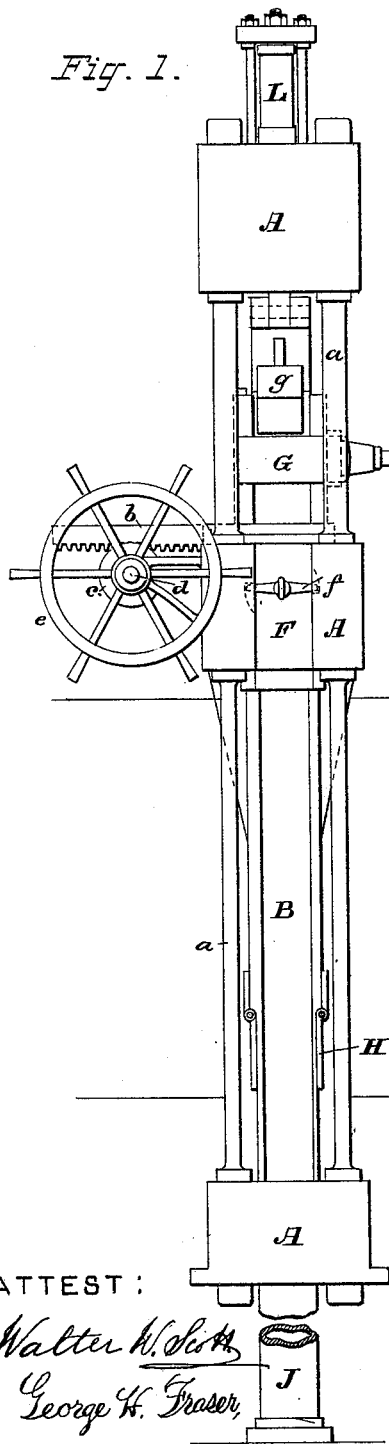
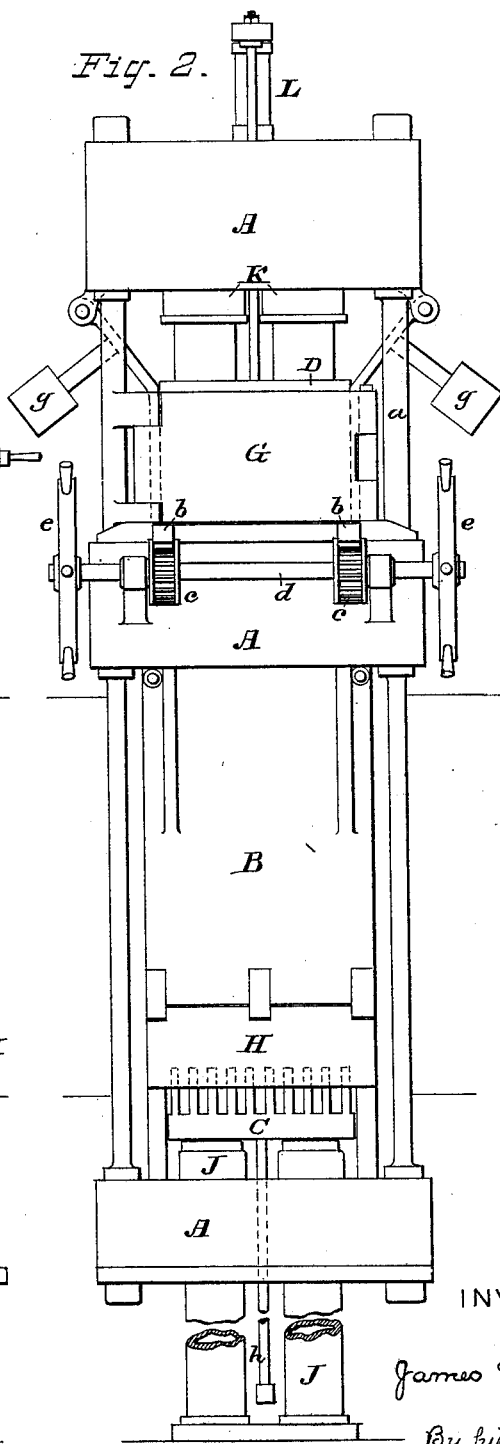


Fig. 2.



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Fig. 3.

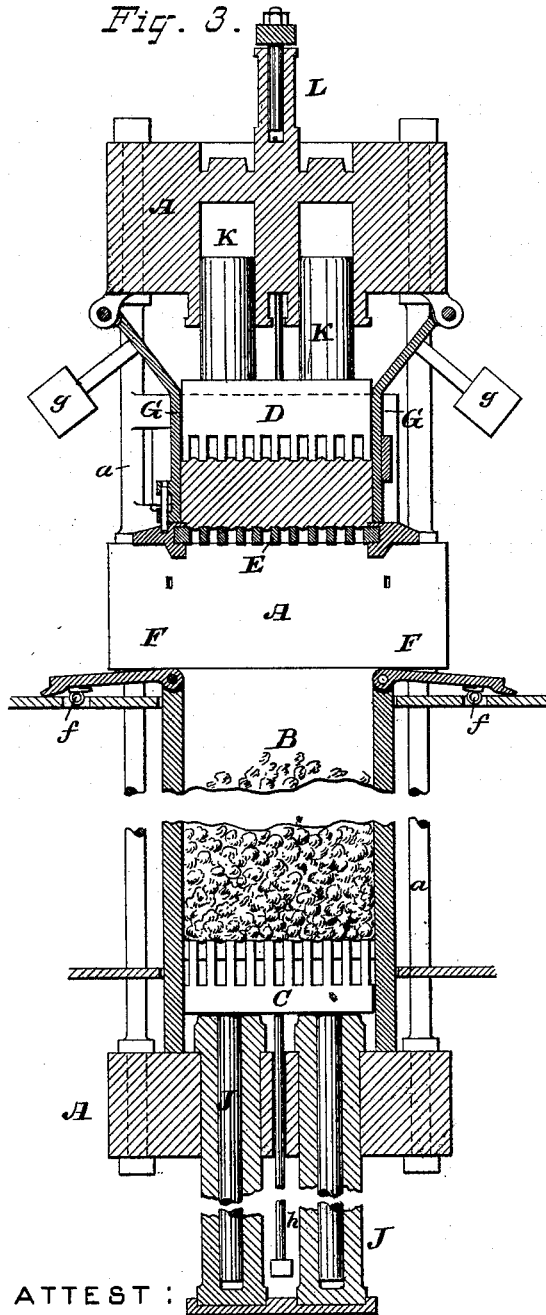


Fig. 4.

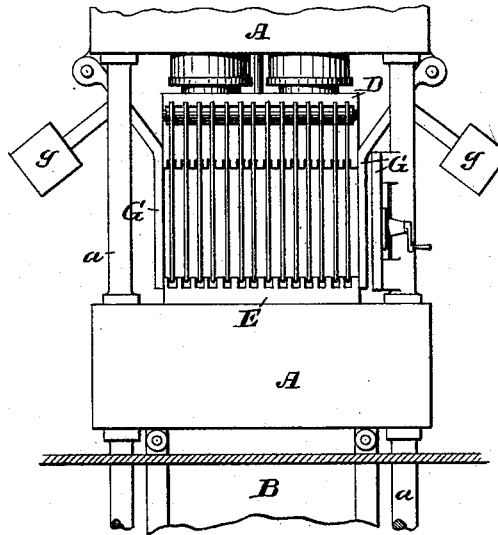
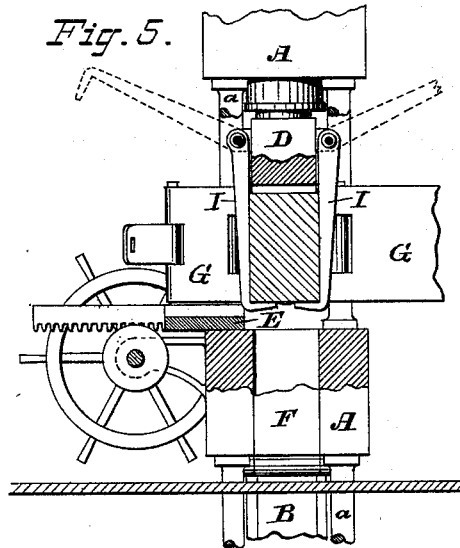


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES WATSON, OF LONDON, ENGLAND, ASSIGNOR TO WILLIAM T. MANN,
JAMES G. CHAPMAN, ALFRED CHAPMAN, HENRY SHIELD, AND ALEX-
ANDER SPEIRS, ALL OF SAME PLACE.

IMPROVEMENT IN BALING-PRESSES.

Specification forming part of Letters Patent No. **220,044**, dated September 30, 1879; application filed
July 26, 1879; patented in England, October 28, 1869.

To all whom it may concern:

Be it known that I, JAMES WATSON, of London, England, have invented certain new and useful Improvements in Baling-Presses for Cotton, Jute, and other substances, of which the following is a specification.

The object of my invention is to provide a means by which, while one bale is being finally compressed, tied, and removed, the loose material for another may be filled into a portion of the same press-chamber or matrix, and its compression commenced therein, if desired, thus accomplishing with a single press-chamber what has heretofore required two press-chambers or a double press, and effecting a corresponding saving of time and economy of labor.

My invention consists in the employment, with two oppositely-arranged and independently-operating platens, of a removable bed, held stationary by the frame-work of the press, arranged to divide the press-chamber into two parts, and against which one of the platens may compress the material, while the other platen is retracted for filling.

It further consists in certain details of construction and arrangement, all of which will be fully hereinafter set forth.

In the accompanying drawings, where I have shown my invention as applied to a hydraulic press, Figures 1 and 2 show the press in side and front elevation. Fig. 3 is a vertical mid-section; and Figs. 4 and 5 are fragmentary views of a modification, being, respectively, a rear elevation and a vertical cross-section.

In the construction shown the frame of the press is composed of three blocks or castings, A A, one at top and another at bottom of the press, and the third between them, the three being connected together by columns *a a* or other frame-work.

B is the press-chamber, matrix, or compressing-box, and extends nearly from the upper to the lower castings, A A. C is the lower and D the upper platen, whose surfaces are provided with ordinary cross-grooves, those in the platen C being, by preference, somewhat deeper than usual.

E is a removable bed, which, when in place, comes between the two platens and divides the press-chamber transversely into two parts.

In the first three figures of the drawings this bed is shown in the form of a grating or grid, its bars corresponding to the grooves in the lower platen, C, and arranged to be slid in and out of the press in the direction of the length of its bars. It is shown as provided with a rack or racks, *b b*, which are engaged by a pinion or pinions, *c c*, on the shaft *d*, which is provided with a hand wheel or wheels, *e e*, or with other means of turning it. This is the preferred apparatus for sliding the bed E; but any other well-known mechanical device may be substituted for it. The bed E slides, preferably, over the top surface of the intermediate casting A.

One or more filling apertures or doors, F F, are provided below the bed E, and preferably in the casting A, communicating with the press-chamber B. When the doors are closed they should be held in place by suitable bolts or buttons *f f*.

Above the bed E is arranged a door, G, or a series of doors or removable sides to the press-chamber B, that the bale may be reached, after being compressed, for tying and removal. These doors or sides should be locked or bolted in place when closed, or they may be provided with weights *g* to hold them closed with sufficient force in place of or in addition to bolts.

A door or doors, H, are provided in the lower part of the press-chamber, situated opposite the top of the platen C when the latter is at the bottom of its stroke.

So far as described the operation of my press is as follows: The press being empty, the platen D raised to its highest point, the platen C depressed to its lowest point, and the bed E slid out, the door H is opened, a cloth for covering the bale laid upon the surface of the platen C, and the door closed. The door or doors F are then opened, and the cotton or other material to be baled is introduced, falling to the bottom of the press-chamber B on to the platen C, until enough has accumulated to form a bale, when the doors F and G are

closed and the platen C caused to ascend, raising the superincumbent mass of material, and compressing it against the under surface of the platen D until the platen C reaches the top of its stroke, when it stops, with the grooves in its surface just opposite the grated bed E. The bed is then slid in, its bars passing through the grooves in the platen C under the bottom of the bale until their ends enter a socket or rest upon a ledge at the opposite side of the chamber B. The platen C is now run down, leaving the bale supported upon the bed E, and the platen D, which has until now been stationary, descends with sufficient force and a sufficient distance to give the bale the necessary pressure.

The doors or sides G, or as many of them as may be necessary, are now opened, and the usual lashings or bale-ties are applied and tightly secured. The platen D is then lifted, thus releasing the bale, which is removed from the press.

As soon as the platen C descends the repetition of the same operation is at once commenced, and by the time the finished bale is removed from the top of the bed the requisite amount of material may have been supplied to the chamber B below it. The bed is then slid out, the doors F and G closed, the platen C raised, and the bed slid back again; or if it takes less time to fill in the necessary amount of material below the bed than to finish and remove the bale above it, a first compression may be given to the material by raising the platen C and forcing the material against the under side of the bed.

The bed may be held down against this pressure by suitable connections, or by the pressure upon its top of the nearly-finished bale.

Before the bed can be withdrawn the pressure below it must be released by lowering the platen C a short distance, and to prevent the too great expansion of the partially-compressed material, when the platen is thus lowered, it may be confined by ties or bands applied previous to lowering the platen. The bed is then drawn out, the platen C raised to its full height, and the bed inserted again, as before.

In the modification shown in Figs. 4 and 5, I I are a series of pivoted hooks, corresponding in number to the grooves in the platen C, and pivoted to the sides of the platen D or to some other fixed part.

The bed E is not a grating as in the first figures, but a solid plate, with grooves across its face corresponding to the number of hooks I I. The hooks being lifted, the material is forced up by the platen C against the platen D, as before, the hooks are brought down, and their ends passed into the grooves in the platen C under the bale of material, the platen C run down, leaving the bale suspended on the

hooks, the bed E slid in, the platen D run down a little to release the hooks from the pressure of the bale and transfer that pressure to the bed E, the hooks lifted, and the operation finished by compressing the bale between the platen D and the bed E, as before described.

The platen C in this construction should rise a little higher than when the grated bed is used, in order to bring the bale and hooks sufficiently above the bed to permit the easy insertion of the latter.

If the hooks I I were pivoted to some fixed part their hooked ends might serve as a substitute for the bed E, being made strong enough to resist the pressure of the platen D.

I have shown in the drawings the platens C and D arranged to be operated by hydraulic power, the platen C being provided with a ram or rams, J, and the platen D with a ram or rams, K.

The platen C will run down of its own weight when the water is discharged from its rams; but the rams of the platen D being inverted, require to be lifted, for which purpose I provide a small ram, L, connected by a cross-head and rods with the platen.

To prevent the platen C being lifted too high I provide a headed rod, h, working through a hole in the lower casting, A, or, in lieu of this, some other suitable stop.

The platens C and D may, if required or preferred, be operated by screw or lever instead of hydraulic power; or as the platen D has but a very short stroke comparatively, but is required to give great pressure, it may be operated by hydraulic force, and the platen C by screw or other power.

The long-stroke platen C may, if preferred, be arranged at the top of the press, and the short-stroke platen D at the bottom.

I claim as my invention—

1. A baling-press consisting of the combination of two independently-moving platens, each adapted to approach the other, a suitable frame-work, and a removable bed interposed between the platens and held stationary by the frame-work, whereby one platen may compress material against the bed, while the other platen is retracted for filling, substantially as set forth.

2. The combination, to form a baling-press, of a long-stroke platen, C, a short-stroke platen, D, a press-chamber, B, and a removable bed, E, dividing the press-chamber into two parts and held stationary by the fixed frame-work of the press, substantially as and for the purposes set forth.

3. The combination of the frame of the press, the chamber B, the filling door or doors F, the removing doors or sides G, the platens C and D, and the removable bed E, substantially as set forth.

4. The combination, in a baling-press, of the

grated bed E with the platen C, having deep grooves in its face corresponding to the bars of the bed, substantially as and for the purposes set forth.

5. The combination, in a baling-press, of the sliding grated bed E, having a rack or racks, b, with the pinion or pinions c, shaft d, and operating wheel or wheels e, substantially as and for the purposes set forth.

In witness whereof I, the said JAMES WATSON, have hereunto set my hand this 30th day of June, 1879.

JAMES WATSON.

Witnesses:

J. C. NEWBURN,
GEO. C. BACON.