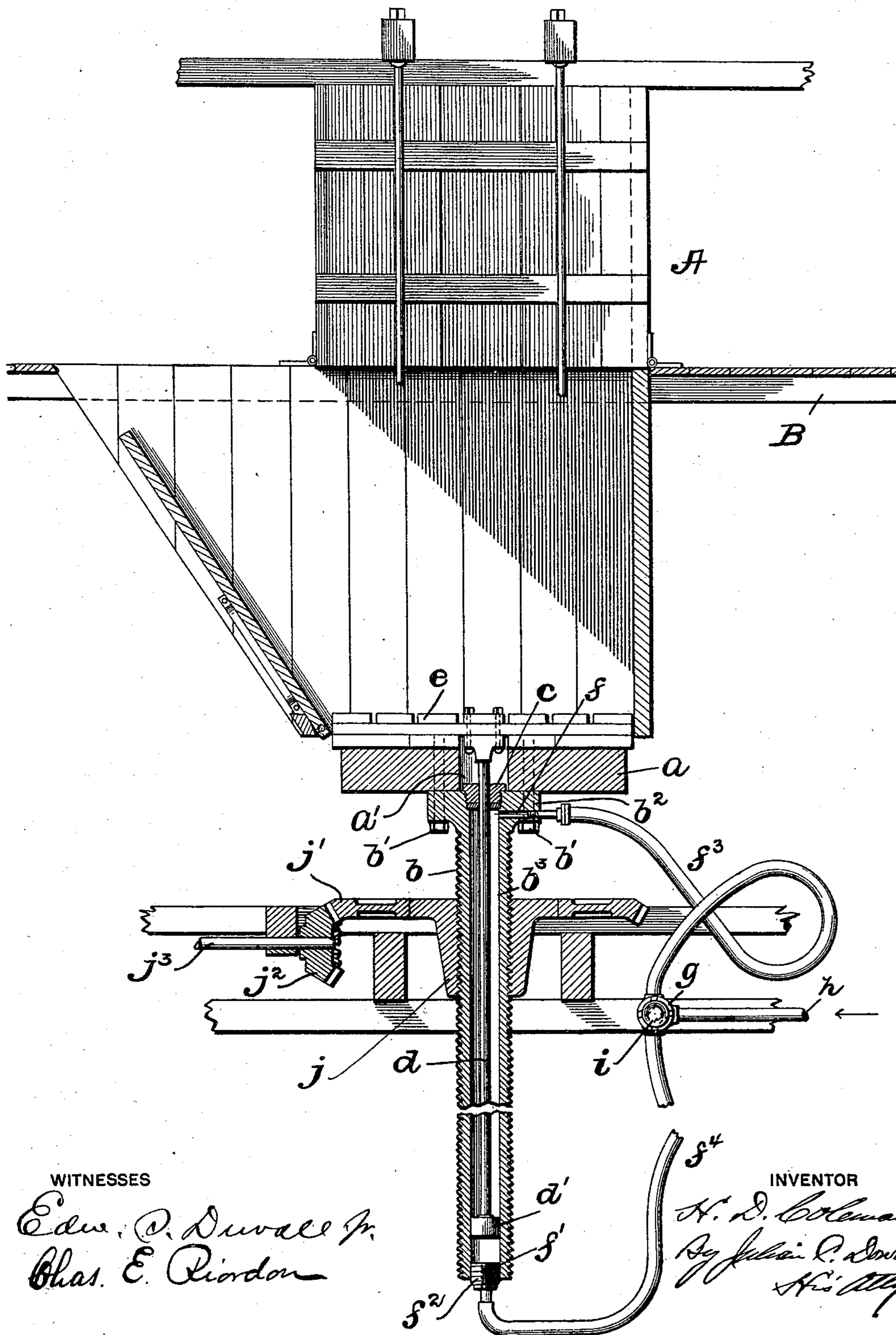


(No Model.)

H. D. COLEMAN.
BALING PRESS.

No. 599,685.

Patented Mar. 1, 1898.



UNITED STATES PATENT OFFICE.

HAMILTON DUDLEY COLEMAN, OF NEW ORLEANS, LOUISIANA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 599,685, dated March 1, 1898.

Application filed September 2, 1897. Serial No. 650,355. (No model.)

To all whom it may concern:

Be it known that I, HAMILTON DUDLEY COLEMAN, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to presses for baling purposes; and the prime object thereof is to effect an arrangement whereby the press is rendered self packing or tramping without appreciably increasing its size or radically changing its construction for effecting the usual baling operations.

It is requisite, especially in baling cotton, that the packing-box of the press be well filled before the baling-pressure is put on—that is to say, not filled merely by the depositing of the material, but some preliminary packing operation is required as the material is being introduced. The most common method heretofore pursued is a manual one, the laborers tramping upon the material and in this way effecting the desired packing thereof; but this primitive method is objectionable both as being extremely disagreeable to the laborers, owing to the very dusty condition of the material, and as consuming a great deal of time. Some efforts have been made at producing self-packing presses; but in most instances the size and bulk of the press have been so much increased and the operation complicated as to preclude an extended adoption of the self-packing press. Now by my invention the press is rendered self packing or tramping without unduly increasing its size or bulk and without complicating its operation.

With the above-stated objects in view the invention consists in certain novel features of construction and combinations of parts, which are described hereinafter and recited in the appended claims.

In the drawing which accompanies and forms part of this specification, illustrating one form of embodiment of the invention, there is represented a central vertical cross-section of a press having my improvements

for effecting the preliminary tramping of material in the press-box.

The general arrangement is that of an ordinary screw-plunger press, and the letter A designates the press-box, which is supported in an elevated position on a suitable framework B, the fixed platen being the top of the box and the follower or plunger working upward to effect the baling in a well-known manner. The follower or plunger proper is designated by the letter *a*, and for the purposes of my invention it is made with a central opening *a'*, and a screw *b* is fastened to the said plunger, around the said opening therein, by means of bolts *b'*, extending through a flange *b²* on the screw and through the plunger, with nuts screwing onto their ends and countersunk in the outer face of the plunger. The said screw for the purposes of my invention is made hollow from end to end, its bore *b³* being in line with the central opening *a'* in the plunger.

The hollow screw is utilized as a cylinder for a motive fluid, and its ends are closed by suitable heads or plugs, the upper one *c* of which constitutes the gland of a stuffing-box for a piston-rod *d*, which extends into the cylinder and is rigidly connected with a piston *d'*, closely fitting the bore thereof. The upper end of the said piston-rod projects through the central opening *a'* in the plunger and is securely bolted to an auxiliary plunger or trampler *e*, extending over the front or top of the plunger *a*.

The cylinder formed by the hollow screw has ports at its opposite ends for the motive fluid, that at the upper end being designated by the letter *f* and extending through the side of the cylinder and that at the lower end being designated by the letter *f'* and made through the center of the screw-plug *f²*, which closes this end of the cylinder. These ports *f* and *f'* communicate by flexible pipes *f³* and *f⁴*, respectively, which are preferably lengths of rubber hose, with a valve-casing *g* fastened to a suitable part of the framework of the press and communicating by a pipe *h* with a source of fluid-pressure supply. The valve-casing is suitably ported, so that by manipulating a valve *i*, arranged therein and correspondingly ported, the motive fluid can be admitted to the cylinder on one side of the

piston while exhausted therefrom on the other side of the piston, and vice versa, in order to produce reciprocations of the latter and consequently of the auxiliary plunger or tramper.

5 The screw is held from rotation while permitting a longitudinal movement in any suitable or well-known manner, and the means here shown for actuating the screw comprise a nut j , embracing the screw and rotatable
10 thereon, a bevel gear-wheel j' , fastened to said nut, and a bevel-pinion j'' , meshing with said gear and mounted on a shaft j^3 , which is suitably connected with a source of power.

A brief statement of the operation of the
15 mechanism above described will suffice. As charges of the material to be baled are deposited in the press-box the valve i is manipulated to cause reciprocations of the piston and consequently the auxiliary plunger, and in
20 this way the desired tramping of the material is effected, so that it is properly compacted in the press-box before the baling-pressure is applied. When the press-box is fully supplied with material, the auxiliary plunger or
25 tramper is allowed to rest in its lowest position, where it seats on the main plunger, and the latter is operated in the usual manner through the actuating means described, the flexible connections between the screw and
30 the fixed valve-casing allowing for such movement of the main plunger and the screw.

It will be seen that such an arrangement as above described effectively accomplishes the
35 object primarily stated of providing tramping means in a press without unduly increasing its size or bulk or complicating its operation.

The motive fluid employed to actuate the piston of the auxiliary tramper may be steam, compressed air, or, in fact, any suitable fluid
40 under pressure.

It is evident that numerous modifications can be made in the structures here shown without departing from the spirit and scope of the invention, and hence I do not limit myself in this respect; nor do I desire to be limited in the application of the invention exclu-

sively to baling-presses, as the same principle may be applied to other uses—as, for instance, to hydraulic jack-screws.

Having thus fully described my invention, 50 what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with a main plunger, and its actuating means, of an auxiliary plunger or tramper carried by the main plunger 55 with actuating means independent of those applied to the main plunger and provision for driving engagement therewith.

2. The combination with the main plunger and means for actuating the same, of an auxiliary plunger or tramper carried by said main plunger and extending over the face thereof and means for actuating said auxiliary plunger independently of the main-plunger-actuating mechanism, substantially as described. 65

3. The combination of a main plunger, a hollow screw fastened to the same, means for actuating the screw, an auxiliary plunger or tramper in front of the main plunger, a rod fastened to said tramper and extending into 70 the hollow screw, a piston on said rod, and means for communication of fluid to the interior of the screw alternately on opposite sides of the said piston, substantially as described. 75

4. The combination of a main plunger, a hollow screw fastened thereto and constituting a cylinder, means for actuating the screw, flexible connections between the ends of the cylinder and a source of fluid-pressure supply 80 with provisions for alternately admitting fluid to the opposite ends of the cylinder, and an auxiliary plunger or tramper in front of the main plunger and having a piston-rod and piston in the cylinder formed by the hollow 85 screw.

In testimony whereof I affix my signature in presence of two witnesses.

HAMILTON DUDLEY COLEMAN.

Witnesses:

JNO. J. WARD,
NUNCIO OVORD.