J. W. GUYNES.

HAY PRESS.

APPLICATION FILED AUG. 16, 1909.

951,988.

Patented Mar. 15, 1910.

2 SHEETS—SHEET 1.

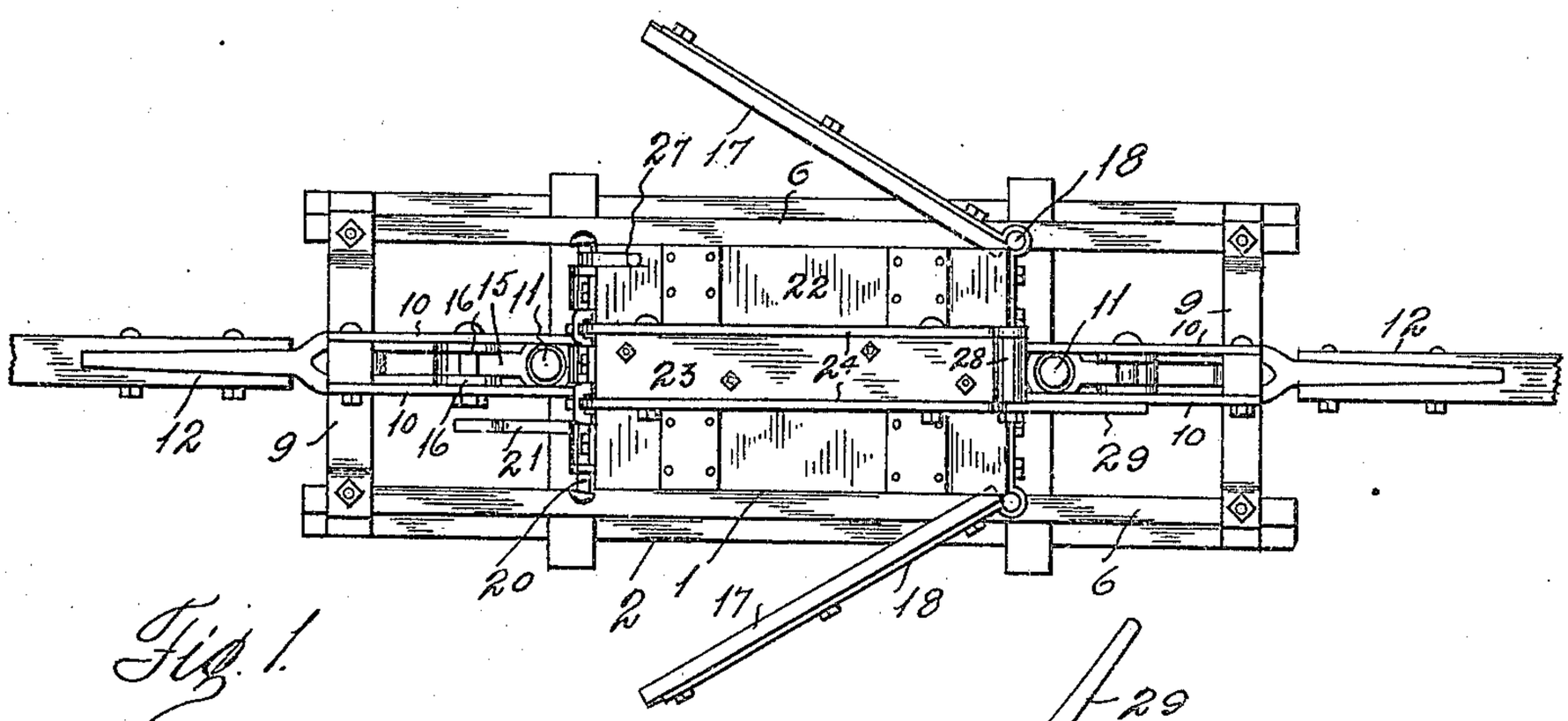

Fig. 1.

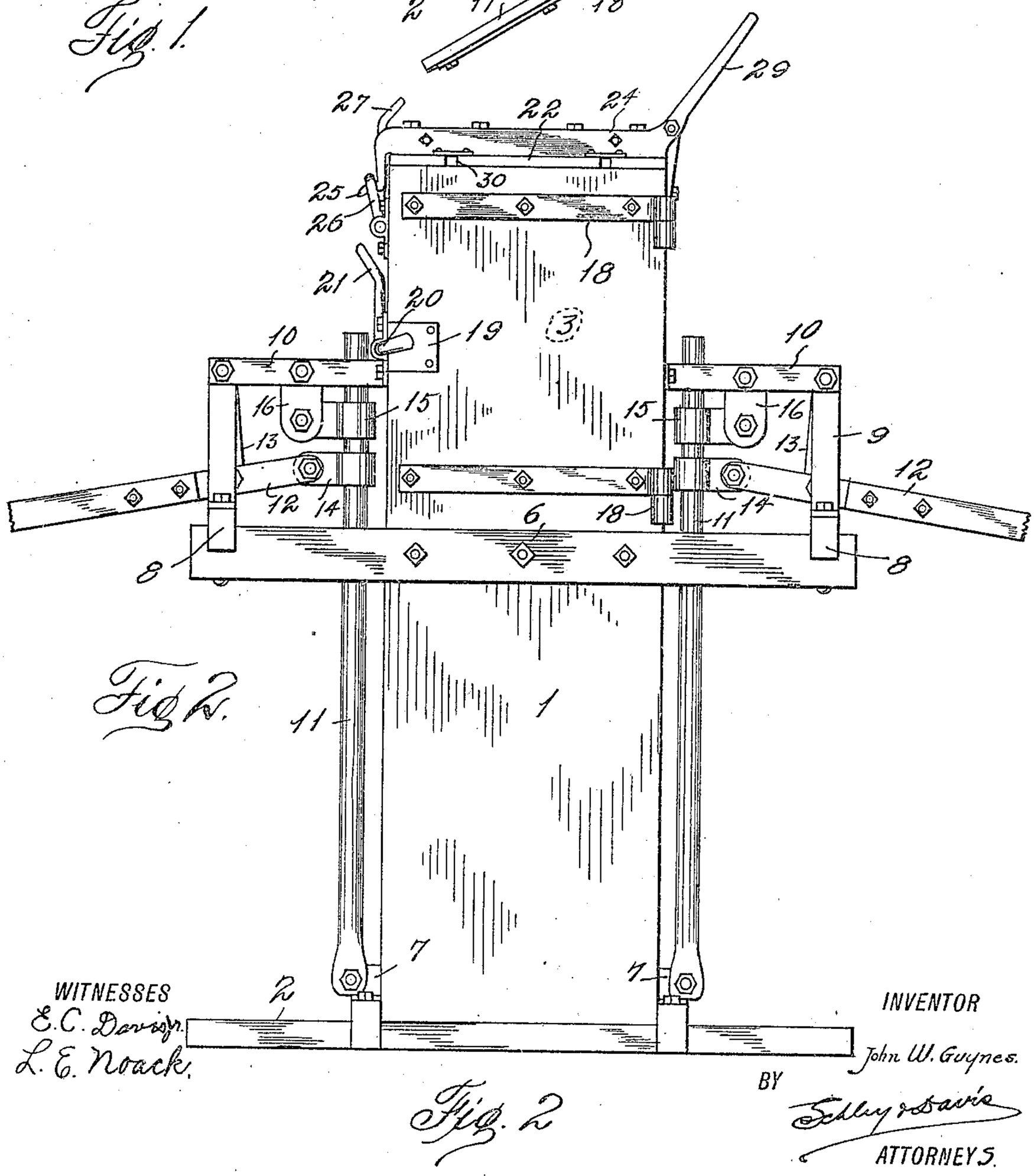

Fig. 2.

WITNESSES

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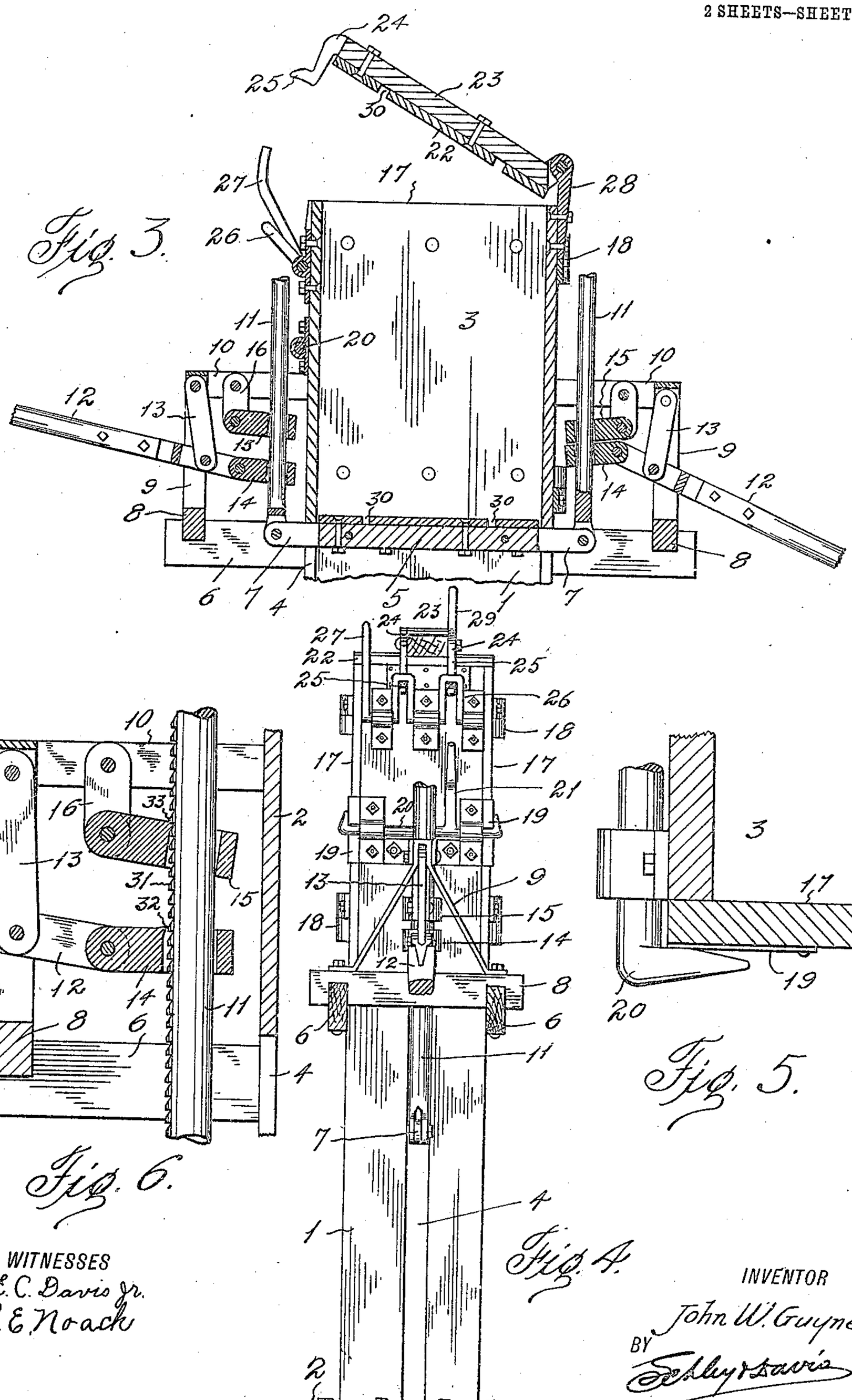

Fig. 3.

Fig. 6.

Fig. 5.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN W. GUYNES, OF CALVERT, TEXAS.

HAY-PRESS.

951,988. Specification of Letters Patent. Patented Mar. 15, 1910.

Application filed August 16, 1909. Serial No. 512,943.

To all whom it may concern:

Be it known that I, JOHN W. GUYNES, a citizen of the United States, residing at Calvert, in the county of Robertson and State of Texas, have invented a new and useful Improvement in Hay-Presses, of which the following is a specification.

My invention relates to new and useful improvements in hay presses.

The object of the invention is to provide a hay press comprising an elevated baling chamber, a press head operating vertically and a lever operating mechanism when the bale may be formed without undue exertion on the part of operators.

Another object resides in a novel press chamber construction and fastening means for the top and sides thereof, together with particular forms of lever connections and retaining devices for the press head.

Finally the object of the invention is to provide means of the character described that will be strong, durable, efficient, and easy of operation, simple and comparatively inexpensive to construct, and also in which the several parts will not be likely to get out of order.

With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in this specification and illustrated in the accompanying drawings, wherein:

Figure 1 is a plan view of the press showing the sides of the press chamber open, Fig. 2 is a side elevation with the press chamber closed, Fig. 3 is a vertical section through the upper portion of the press with the top door raised and the levers at opposite ends of their stroke, Fig. 4 is an elevation with the parts as shown in Fig. 2, Fig. 5 is a detail of press chamber side fastening, and Fig. 6 is a detail in vertical section showing a modified form of the lever elevating mechanism.

In the drawings the numeral 1 designates a vertical press box mounted on a suitable base 2. At the upper end of the press box a baling chamber 3 is formed. At each end and centrally the box is provided with vertical slots 4 through each of which an arm 7 fixed to a press head 5 projects. The slots extend upward from the base to the bottom of the baling chamber; while the press head is free to be moved up and down in the press box. At the bottom of the baling chamber parallel horizontal beams 6 are secured, one to each side of the box and project some distance beyond each end of the box as shown in Figs. 1, 2 and 3. Near each end of the beams, a cross bar 8 is fastened. On each of these bars, a truss support 9 is mounted, being connected at its upper end with the outer ends of parallel braces 10 extending horizontally inward to the end of the press box to which they are secured. Plunger rods 11 extend vertically from the arms 7, with which they have pivoted connection, up between the braces which form a guide for the rod at each end of the box. Normally the press head 5 rests in the bottom of the press box as indicated in Fig. 2, and the rods terminate just above the braces. When the press box has been filled with the material to be pressed, as will be hereinafter described, the pressing operation is carried out by elevating the press head in the box and pressing the material in the baling chamber to form the bale.

The means for elevating the press head comprises opposed levers 12 of suitable length and suspended a short distance from their inner ends by pivot links 13 pivotally supported from the upper central portion of the truss supports 9. This manner of suspending the levers gives a great leverage and enables the operators at the outer ends to exert considerable power on the inner ends when the levers are swung. Each lever at its inner end has pivotal connection with a collar 14 surrounding the adjacent plunger rod and an inner diameter slightly greater than the diameter of the plunger rod. It is obvious that as long as the collars remain horizontal, they slide on the rod, but when the collar is rocked or tilted on the rod, owing to its larger diameter, the upper edge on one side and the lower edge on the opposite side will bite into the rod, thus taking a hold or binding on the same. When either lever is swung down, the collar connected to the inner end thereof is tilted and binding on the rod, continued downward movement of the lever raises the rod. When the lever reaches the end of its down swing, it is swung upward to begin a new stroke. When the upward swing is begun the collar is tilted back to a horizontal position, the lever swinging on its pivot link 13. This permits them to freely move up the rod without binding. However to accomplish this last movement and hold the

press head in the position to which it is elevated, a dog 15 having an internal diameter like the collar, is engaged about each rod above the collar 14 and pivotally supported from between links 16 pivotally supported from the braces 10. When the collars 14 are moved down the downward pull of the rods 11 tilts the dogs causing them to bind about the rods and hold them and the head 5 against downward movement. Any upward movement of the rods will break the binding action and permit the rods and press head to be freely carried upward. The operator on each lever swings the lever thus elevating the press head intermittently until it reaches the bottom of the baling chamber and the arms 7 contact with the top of the slots 4. When the parts have reached this position the bale will be formed and is ready for tying and removing from the press.

The sides 17 of the baling chamber 3 are mounted at one end on strap hinges 18, which hinges also brace the box. Near its free end and at the central portion each side is provided with a wear plate 19 adapted to be engaged by the tapered inturned ends of a fastening bail 20 pivoted across the end of the chamber and provided with an upstanding lever 21, which when swung outward rocks the ends of the bail out of engagement with the plates and releases the sides. The tapered ends of the bail force the sides into close contact with end of the press chamber when closed.

The top 22 of the baling chamber is hinged at the same end as the sides being braced across the upper side by a transverse bar 23. On each side of the bar 23 metal plates 24 are secured, said plates terminating at the free end of the top in hooks 25 projecting over and a short distance down the face of the end of the baling chamber. These hooks are engaged by the looped portions of fastening bail 26 pivoted across the end of the baling chamber and having an upstanding lever 27, which when swung down rocks the bail out of engagement with the hooks, the looped portions straddling the plunger rods. At their opposite ends the plates 24 are connected to a hinge member 28 secured to the end of the baling chamber. One of the plates is extended to form a lever 29 by which the top may be swung. The surface of the press head and the under side of the top are provided with grooves 30 to receive the tying wires.

In filling the press the top is swung upward, the lever 29 acting as a stop by contacting with the end wall of the baling chamber. One of the sides may be left open until the loose material reaches up to the baling chamber. After the press has been filled, the sides and top are closed and fastened and the baling operation as before described, carried out. After the bale is formed, the top and sides are released and swung open and the bale tied and removed. Before the next bale can be formed the press head 5 must be lowered which is accomplished by lifting up the collars and dogs to a horizontal position, releasing the plunger rods and allowing the press head to freely slide down to the bottom of the press box by its own weight.

In Fig. 6 I show a modified form in which the plunger rods 11 are each provided with teeth 31 adapted to be engaged by lugs 32 and 33 carried on the collar 14 and dog 15 respectively; otherwise the parts are the same.

I wish to call attention to the fact that by employing opposed levers and two operators, material may be baled by hand without a great amount of labor and expeditiously and by reason of the leverage had by the lever arrangement considerable pressure may be placed upon the bale. Also that the operation is quick, simple and easy.

It will be noted that as the levers 12 are operated and the press head moved upward, the latter will be brought to a stop when the arms 7 reach the upper ends of the slots 4, thus indicating to the operators that the pressing operation has been completed and preventing further operation of the levers until the head is lowered.

What I claim is:

1. In a hay press, a vertical press box having a baling chamber at its upper end, swinging doors forming the sides of the baling chamber, means for holding the doors in a closed position, a closure forming the top of the press box, means for fastening the closure in position, a press head normally at the bottom of the press box, a transverse beam on each side of the press box at the bottom of the baling chamber and projecting beyond each end of the press box, a support on the projecting ends of the beams at each end of the baling chamber, a lever pivoted on each support, a rod member extending vertically at each end of the press box and pivotally connected at its lower end to the press head, an engaging device pivoted to the inner end of each lever and engaging with one of the rod members, and a pivoted retaining device carried by each support and engaging with one of the rod members for holding the press head in elevated positions.

2. In a hay press, the combination with a press box having a baling chamber at its upper end provided with side and top doors, of horizontal beams having their ends projecting, one beam being secured on each side of the press box at the bottom of the baling chamber, the press box having vertical slots in each end, a press head normally at the bottom of the box, arms extending from the press head through the slots, ver-

tical plunger rods extending up the ends of the box centrally between the projecting ends of the beams and pivoted at their lower ends to the arms, supports resting on the projecting ends of the beams, a link pivotally hung from each support, a lever pivoted to the lower end of each link above the beams, a collar loosely engaging on each rod and pivoted directly to the end of the adjacent lever, braces extending inward from the tops of the supports and secured to the ends of the press box, links pivotally hung from the braces, and a collar loosely engaging each plunger rod above the first named collar and pivoted to the lower end of one of the links.

In testimony whereof I have signed my name in the presence of two witnesses.

JOHN W. GUYNES.

Witnesses:

W. W. PURDOM,

J. W. FORD.