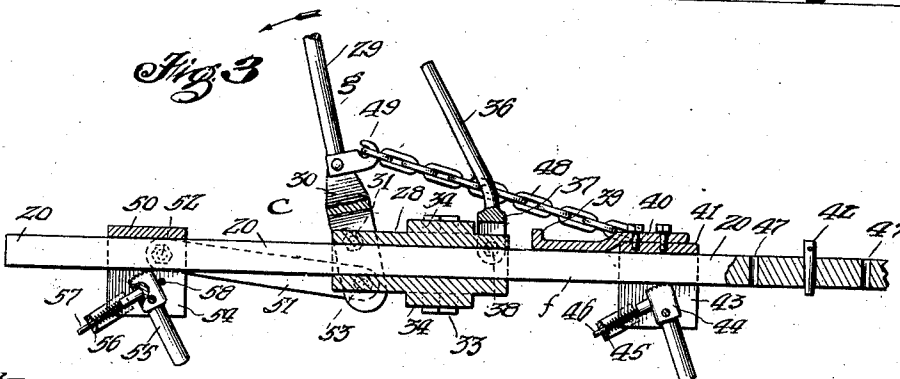
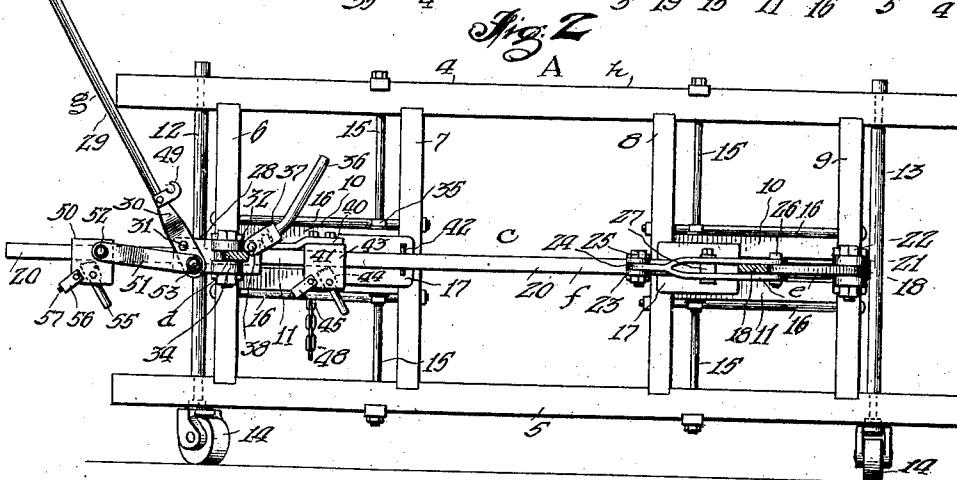
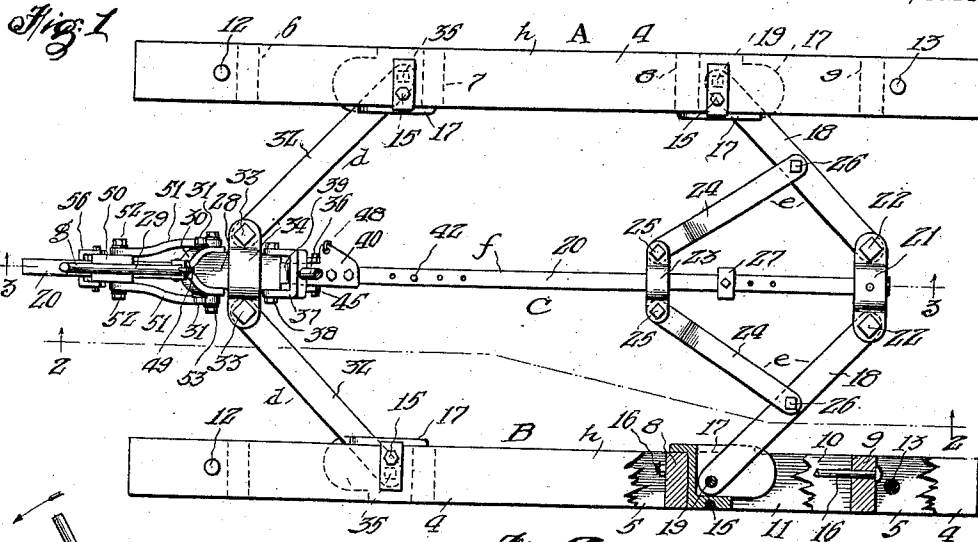


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PRESS.
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Patented Mar. 14, 1911.



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UNITED STATES PATENT OFFICE.

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PRESS.

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To all whom it may concern:

Be it known that I, GEORGE D. PARKER, a citizen of the United States, residing at Riverside, in the county of Riverside and State of California, have invented new and useful Improvements in Presses, of which the following is a specification.

This invention relates to presses, and more particularly to packing articles and devices, the action of which is to press apart or together the mass or portions of the mass of material, or more compactly to bunch or to assemble together, the objects which are to be confined within a given limitation of space.

Within a more specific category, the invention relates to packing presses organized to relatively separate portions of a mass of material or the articles or devices comprising a plurality of the same, so as to more completely occupy a given space within which the same is or are accommodated for storage or shipment. Such a packing press, of particular organization, serves, in carrying out the invention, effectually to dispose compactly within a car a plurality of boxes, cases or other packages leaving no space between them to allow shifting thereby and to the end of utilizing all of the available cubical contents of the car.

Further particular objects of the invention consist in the provision of improved packing presses of the general characterization set forth, which will be superior in point of relative inexpensiveness and simplicity of construction, positiveness and efficiency in operation, durability, and general efficiency; and the manipulation or control of which in operation may be performed conveniently and with a minimum of required labor and exertion on the part of the operator.

With the above and other objects in view, the invention consists in the novel provision, construction and combination of parts, members and features hereinafter described as embodying the invention, as shown in a preferred form in the drawings, and is finally pointed out in claims.

In the drawing:—Figure 1 is a top plan view, partly in sections and partly broken away for clearness of illustration, of a packing press organized according to the invention and particularly adapted in organization for utilization in compactly disposing loads in cars or other vehicles; Fig. 2 is a

vertical section taken upon the line 2—2, Fig. 1, longitudinally of the mechanism shown in Fig. 1, and looking in the direction of the arrows appended to said section line; and, Fig. 3 is an enlarged longitudinal vertical sectional view of a portion of the construction, taken upon the line 3—3, Fig. 1, and looking in the direction of the appended arrows. In Figs. 1 and 2 the parts and features are shown in the relative positions accompanying operation of the mechanism; and in Fig. 3 the parts and features are shown in the relative positions incident to releasing the same from operative positions.

Corresponding parts in all of the figures are denoted by the same reference characters.

Referring with particularity to the drawing, A and B designate respectively relatively movable members, the relative movement of which is caused by operating means C. The members A and B, when in positions of extreme relative approach, are disposed between the portions of the mass or the objects or articles of the plurality of the same, which are relatively separated upon the relative separation of the members A and B under actuation of the operating means C.

d and *e* designate respectively operative connections between the members A and B, the same being included in the operating means C; and the operative connections *d* and *e* are joined by an adjustable connection member *f*; one of the operative connections *d*, being provided with an operating member *g* whereby the length of the adjustable connection member *f*, between the operative connections *d* and *e*, may be varied, to cause the operative connections *d* and *e* to relatively separate the members A and B; the connection member *f* being moved relative to one of the operative connections *d* and *e*.

A particular form, construction and combination of parts, members and features entering into a preferred organization of a packing press embodying the invention, is as follows:—

Each of the members A and B comprises a longitudinal frame *h* consisting of a longitudinal top member 4, a longitudinal bottom member 5 and two spaced pairs of spaced vertical members, 6 and 7, and 8 and 9, respectively. Each of the pairs of vertical members is connected by a pair of spaced longitudinal members 10 and 11 respectively, which are arranged intermediately

of the top and bottom portions of the vertical members 6 and 7, or 8 and 9. Vertical reinforcing frame bars 12 and 13 may be provided adjacent to the respective end portions of each of the frames *f*; said frame bars or rods being provided at their lower end portions, beneath the frame members 5, with casters or rollers 14, whereby the mechanism may be with facility wheeled from point to point. Each of the frames *f* is provided at each end portion with a vertical bowed braced bar or rod 15 which is bolted at top and bottom to the frame members 4 and 5 respectively and is connected with the respective frame members 10 and 11. Furthermore, longitudinal brace bars or rods 16 may be provided, extending between the vertical frame members 6 and 7, and 8 and 9 respectively, of each of the frames *f*, both above and below the frame members 10 and 11. A chambered wear plate 17 is centered between the frame members 10 and 11, of each pair of the same adjacent to the respective frame members 7 or 8, the chamber of each wear plate opening inwardly of the respective frame and toward the adjacent end of the frame. Link arms 18 are pivotally connected each at its outer end, as at 19, within one of the wear plates 17 at corresponding end portions of the frames *h*, said link arms 18 being comprised within the operative connections *e*.

The adjustable connection member *f* comprises a bar 20 located between the members A and B and extending parallel therewith, one end of the same carrying a fixed yoke or clamp 21 with which the inner ends of the link arms 18 are pivotally connected, as at 22. A collar 23 is slidably mounted upon the bar 20 adjacent to the end thereof which carries the yoke 21; and supplemental link arms 24 are pivotally connected each at one end, as at 25, with the collar 23; and at the other end, as at 26, respectively with the link arms 18 intermediate of the ends thereto. The supplemental link arms 24 act as adjustable braces for the link arms 18 which latter constitute a toggle operated by the bar 20. A stop 27 is adjustably positioned upon the bar 20 between the collar 23 and the yoke 21, the same serving to limit the relative approach of the collar 23 and yoke 21. Adjacent to the opposite end of the bar 20 a sleeve 28 is slidably mounted upon the bar 20; said sleeve carrying the operating member *g* which consists of a lever arm 29, the lower end portion of which is bifurcated, as at 30, and straddles the sleeve 28 in pivotal connection therewith, as at 31. Link arms 32 are respectively pivotally connected at their inner ends, as at 33, with the sleeve 28, by a yoke or clamp 34; and the outer ends of the link arms 32 are pivotally connected with and received within the chambered wear plates 17 which are dis-

posed between the frame members 6 and 7 of the respective frames *h*; such pivotal connections being indicated at 35. The two link arms 32 comprise a toggle which is operated by the bar 20 and the operating lever arm 29, as hereinafter described, the link arms 32 diverging in the direction of the link arms 18, which latter diverge in the direction of the link arms 32, so that the toggles respectively comprising the link arms 32 and the link arms 18 are opposed each to the other in operative relation. The link arms 32 are included within the operative connections *d*.

The operating means C further include a locking arm 36 having a bifurcated lower end portion 37 which is pivotally connected with the sleeve 28, as at 38, and straddles the same; said locking arm co-acting with a head 39 upon a plate 40 which is slidably mounted upon the bar 20, by a saddle 41 upon which the plate 40 is bolted. The saddle 41 is further provided with depending cheeks 43 between which is mounted a pivoted toothed dog 44 adapted to bear with relation to the bar 20; and a keeper 45 projects from the cheek 43 and is provided with an opening through which plays a spring pressed stem 46 which bears against the dog 44 and tends to urge the same into engagement with the bar 20. The means for limiting the slidable movement of the plate 40 and the saddle 41 upon the bar 20 may consist of a stop pin, as shown at 42, entering one of a number of openings 47 in the bar 20. By means of said pin and openings, the said plate 40 and saddle 41 may be permitted to move upon the bar 20 toward the link arms 18 to varying degrees. A chain 48 may be connected at one end with the plate 40, serving to constitute connection means between the plate 40 and a hook 49 upon the lever arm 29, so as to unite the bar 20 and the head 39 upon the plate 40 with the lever arm 29 for joint movement of the same as hereinafter set forth.

The plate 40 and saddle 41 and attendant features are disposed upon the bar 20 between the sleeve 28 and the collar 23 with which are connected the supplemental link arms 24 of the toggle or operative connections *e*. At the other side of the sleeve 28, or in such position that the sleeve 28 is arranged intermediately of the same and the plate 40 which carries the head 39, a saddle 50 is slidably mounted upon the bar 20; and link arms 51 are pivotally connected each at one end with the saddle 50, as at 52, and at the other end with the bifurcated end portion 30 of the lever arm 29 beneath the point of pivotal connection of the latter with the sleeve 28.

Spaced cheeks 54 project downwardly from the saddle 50; and a toothed dog 55 is pivotally mounted between the cheeks 54

and arranged to bear upon the bar 20. A keeper 56 projects from the cheeks 54, and a spring pressed stem 57 passes slidably through an opening in the same and bears upon the dog 55, tending to urge the same into engagement with the bar 20. Both of the dogs 44 and 55 are arranged to engage with the bar 20 in such manner as to oppose its movement through the sleeve 28 in such manner as to increase the distance between said sleeve 28 and the yoke 21 which is fixed to the bar 20 and with which the link arms 18 of the toggle *e* are connected.

58 designates a removable pin which is passed through openings in the cheeks 54 in position to hold the dog 55 away from the bar 20 when the parts and members of the mechanism are being restored to inoperative conditions and positions.

The operation, method of use and advantages of the improvements in packing presses constituting the invention will be readily understood from the foregoing description taken in connection with the accompanying drawing and the following statement:—With the parts and features in the relative positions shown in Figs. 1 and 2, the frames *h* of the members A and B are disposed between the portions of the mass or the objects or articles which are to be separated, and after the stop pin 42 has been inserted in one of the openings 47 in the bar 20 so as to properly limit the slidable movement of the plate 40 and saddle 41 upon the bar 20, the lever arm 29 is moved in the direction of the arrow adjacent thereto in Fig. 3 and in Fig. 2, which causes the saddle 50 to slidably approach the sleeve 28 upon the bar 20, the link arms 51 causing such movement. The lever arm 29 is then pivotally thrown in a direction the opposite of that indicated by said arrow. The saddle 50 now becomes locked to the bar 20 through the agency of the toothed dog 55 and serves as a bearing whereby the lever arm 29 is caused to actuate and move the sleeve 28 in the direction of the pin 42, upon the bar 20, said pin being located between the saddle 41 which carries the plate 40, and the collar 23 with which the supplemental link arms 24 are connected. As the sleeve 28 is locked to the plate 40 and saddle 41 through the locking arm 36 and the head 39 upon the plate 40, movement of the sleeve 28 in the direction stated causes accompanying movement of the saddle 41 and plate 40. At the same time, the link arms 32 are caused to more widely diverge. When movement of the lever arm 29 in the direction last recited is terminated, the toothed dog 44 locks the saddle 41 together with the plate 40 and sleeve 28 to the bar 20, in the new positions taken up, namely positions closer to the yoke 21 with which the link arms 18 of the toggle *e* are connected. The

yoke or clamp 34 with which the link arms 32 of the toggle *d* are connected is resultant in closer approach to the yoke or clamp 21 with which the link arms 18 of the toggle *e* are connected. The toggle *d* having been expanded as recited, its contraction is now opposed by the toggle *e*; such opposition resulting in compensation between the two toggles and a final corresponding expansion of both toggles and resultant relative separation of the members A and B. The lever arm 29 is now again thrown in the direction indicated by the arrows in Figs. 2 and 3, causing the saddle 50 to again approach the sleeve 28 upon the bar 20; and upon the reversal of the movement of the lever arm 29 the saddle 50 is locked to the bar 20 as before, and the further advance of the yoke or clamp 34 of the toggle *d* in the direction of the yoke or clamp 21 of the toggle *e*, is caused, in the manner previously recited. Thus, after successive reciprocations of the lever arm 29, the saddle 41 is moved along the bar 20 constituting the adjustable connection member *f* between the two toggles, until said saddle is checked by the stop pin 42. Each advance of the saddle 41 and sleeve 28 is maintained by the dog 44 binding upon the bar 20, and is accompanied by expansion of the toggle *d* which expansion causes similar expansion of the toggle *e* in the compensating manner above recited. Each advance of the saddle 50 upon the bar 20 is maintained by the dog 55 binding upon the bar 20.

It will be noted that the degree of relative separation of the members A and B by the toggle *d* and *e*, such as the service requires; such, for instance, as the compactness of condition which it is desired to obtain with respect to the divided parts of a car-load, may be predetermined by the placement of the stop pin 42 in the proper opening 47 in the bar 20. The openings 47 are spaced apart distances corresponding to distances of separation of the members A and B.

When it is desired to remove the packing press from its operative position, by relative approach of the frame members A, and B and contraction of the toggles *d* and *e*, the adjustable connection member *f* between the toggles, consisting of the bar 20, is permitted to gradually move through the sleeve 28 so as to increase the distance between the yoke or clamp 34 of the toggle *d* and yoke or clamp 21 of the toggle *e*. To this end, the pin 58 is inserted in the opening in the cheeks 54 in position to hold the dog 55 away from the bar 20, so that the latter may slide beneath the saddle 50. The chain 48 is then connected with the hook 49 on the lever arm 29, the lever arm 29 is moved in the direction indicated by the arrow in Figs. 2 and 3 until the chain is subjected to strain, the locking arm 36 is released from the head 39

upon the plate 40, and the plate 40 and saddle 41 which are locked to the bar 20 by the dog 44, together with the bar 20, are permitted to move in such direction as to increase the length of the bar 20 between the toggles *d* and *e* or the yokes 34 and 21 thereof. This movement of the bar 20 and connected parts is caused by the pressure of the load parts upon the frame members A and B, and continues until the members A and B have so far relatively approached as to be removable from the load, the relative approach of said members A and B being accompanied by the contraction of the link arms of the toggles *d* and *e* which is permitted by the relative separation of the yokes 34 and 21 of said toggles. The said movement last stated is caused to be gradual by the gradual movement of the lever arm 29 in the direction the opposite of that indicated by the arrow in Figs. 2 and 3, under the control of the operator. When it is desired to again utilize the mechanism for the purposes described, the saddle 41 is released from the bar 20 by freeing the dog 44 from said bar, and said saddle with the plate 40 are moved toward the sleeve 28 until the locking arm 36 can be engaged with the head 39. The chain 48 is detached from the hook 49 upon the lever arm 29, the pin 58 is withdrawn from the cheeks 54 of the saddle 50 permitting operation of the dog 55, the dog 44 is freed for action in connection with the bar 20, the lever arm 29 is first thrown in the direction indicated by the arrow in Figs. 2 and 3, and then in the opposite direction, and the reciprocation of said lever arm 29 constituting the operating member *g* of the operating means C again causes relative separation of the frame members A and B as above in detail recited.

It will be seen that the entire operation of the mechanism to the end of separating the parts of a given load or mass is performed through leverage means, namely, the lever arm 29, which permits an operator step by step to exert the amount of force or energy required in accordance with the conditions obtaining. Also, the release of the frame members from relatively separated positions, to permit the relative approach of the same, is controlled through the agency of the same leverage means or operating member *g*. There is a perfect compensation between both toggles *d* and *e* to cause equal relative separation, or tendency to separate, at the opposite end portions of the frame members, through the bar 20 constituting the adjustable connection member *f*; and when said bar 20 is freed from the operating member *g* so that the length of the bar 20 beneath the fulcrum centers of the toggles is increased, similar compensation takes place between the toggles to permit their joint contraction and corresponding relative ap-

proach of the opposite end portions of both of the frame members. It is also to be noted that the operating member *g* is movably supported directly upon the adjustable connection member *f* between the two toggles or operative connections *d* and *e*, requiring no fixed point of support, as upon the floor of a car. The entire mechanism is thus self-contained.

A novel and advantageous feature of the invention consists in mounting the operating member *g* upon one of the operative connections or toggles, namely the toggle *d*, the same being pivotally connected with the sleeve 28 which joins the link arms 32 in said toggle *d*. By means of this operating member, and the features associated therewith, the connection member *f* or bar 20 is moved relative to but one of the toggles, namely the toggle *d* upon which the said operating member *g* is mounted.

The stop 27 supplements the stop pin 42, the former acting upon the collar 23, to the same end. Said stop 27 is adjustable upon the bar 20 as shown.

I do not desire to be understood as limiting myself to the specific provision, construction, combination, association and relative arrangement of parts, members and features shown and described; but reserve the right to vary the same, in adapting the improvements to varying conditions of use, without departing from the spirit of the invention and the terms of the following claims:—

Having thus described my invention, I claim and desire to secure by Letters Patent:—

1. An improved press of the character described, comprising relatively movable members, means for relatively moving the same comprising an operating lever, and means controlling the return of the same to positions before said relative movement; said latter means being controlled by said operating lever.

2. An improved press of the character described, comprising relatively movable members, a plurality of operative connections between the members, an adjustable bar between the operative connections, a lever arm adjustably mounted upon the bar, and means for locking said lever arm to the bar to permit the swing of said lever arm to operate said bar.

3. An improved press of the character described, comprising relatively movable members, a plurality of operative connections between the members, an adjustable bar between the operative connections, a lever arm adjustably mounted upon the bar, means for locking said lever arm to the bar to permit the swing of said lever arm to operate the bar, and means for locking the bar in position of adjustment.

4. An improved press of the character de-

scribed, comprising relatively movable members, a plurality of operative connections between the members, an adjustable bar between the operative connections, a sleeve adjustably mounted upon the bar, a lever arm pivotally mounted upon the sleeve, a saddle adjustably mounted upon the bar, locking means carried by the saddle and opposing the movement of the saddle upon the bar in one direction, operative connections between the saddle and one end of the lever arm, and means for locking the bar in position of adjustment relative to one of said operative connections.

15. 5. An improved press of the character described, comprising relatively movable members, a plurality of operative connections between the members, an adjustable bar between the operative connections, a sleeve adjustably mounted upon the bar, a lever arm pivotally mounted upon the sleeve, two saddles adjustably mounted upon the bar with said sleeve between the same, locking means carried by each of said saddles and opposing the movement of the respective saddle upon the bar in one direction, operative connections between one saddle and one end of the lever arm, and means for locking the sleeve

in connection with the other saddle for joint movement therewith.

6. An improved press of the character described, comprising relatively movable members, a plurality of operative connections between the members, an adjustable bar between the operative connections, a sleeve adjustably mounted upon the bar, a lever arm pivotally mounted upon the sleeve, two saddles adjustably mounted upon the bar with said sleeve between the same, locking means carried by each of said saddles and opposing the movement of the respective saddle upon the bar in one direction, operative connections between one saddle and one end of the lever arm, means for locking the sleeve in connection with the other saddle for joint movement therewith; and a detachable operative connection between said lever arm and said last named saddle.

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

GEORGE D. PARKER.

Witnesses:

C. L. McFARLAND,
M. B. MARTER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."