J. MARTEL.

MEANS FOR COMPRESSING SPRINGS TO REMOVE SAME FROM TRUCKS.

APPLICATION FILED DEC. 31, 1919.

1,397,437. Patented Nov. 15, 1921.

Fig-4.

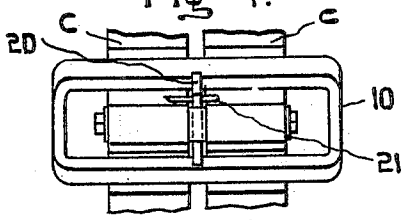


Fig-5.

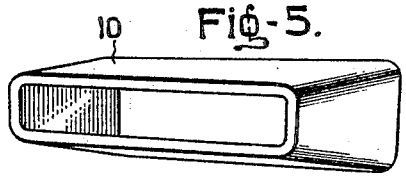


Fig-1.

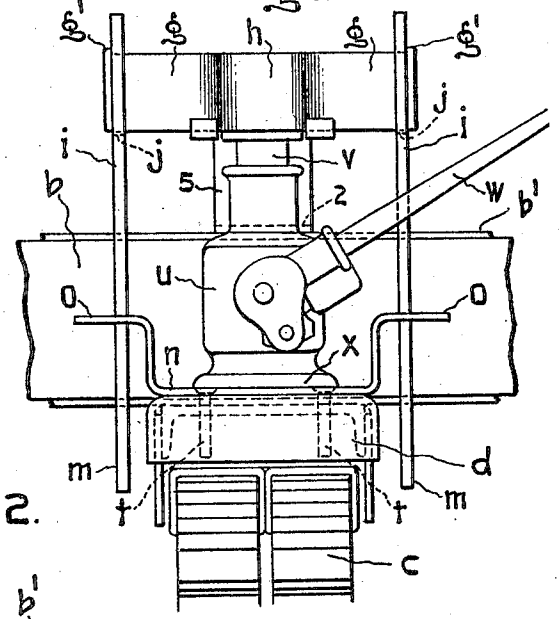


Fig-2.

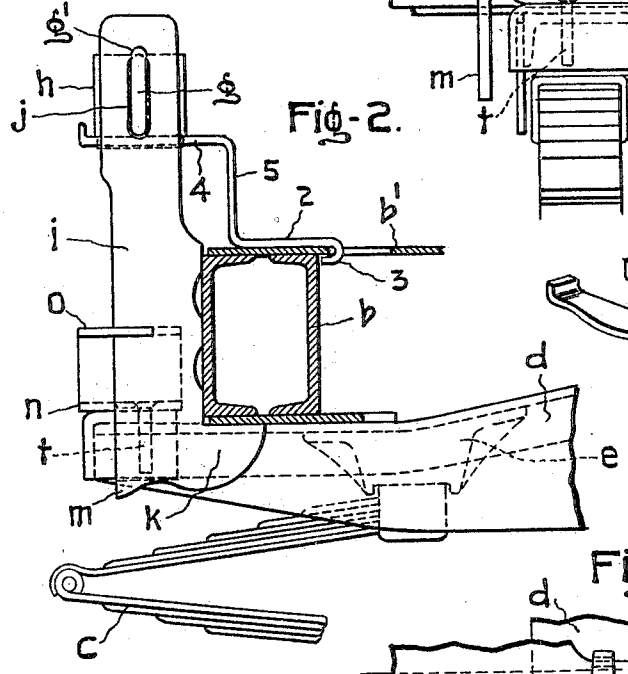


Fig-6.

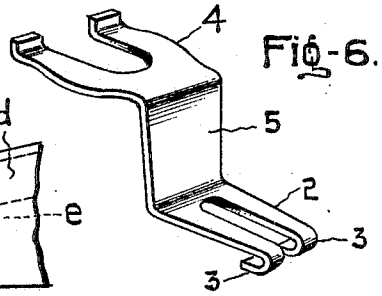


Fig-3.

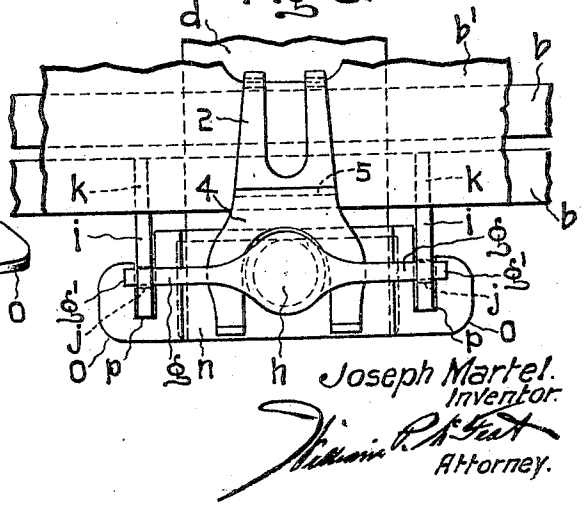
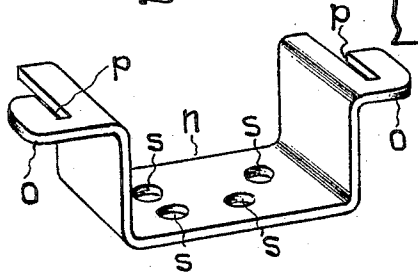


Fig-7.



Joseph Martel.
Inventor.

William R. Kent
Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH MARTEL, OF MONTREAL, QUEBEC, CANADA.

MEANS FOR COMPRESSING SPRINGS TO REMOVE SAME FROM TRUCKS.

1,397,437. Specification of Letters Patent. Patented Nov. 15, 1921.

Application filed December 31, 1919. Serial No. 348,538.

To all whom it may concern:

Be it known that I, JOSEPH MARTEL, of the city of Montreal, Province of Quebec, Dominion of Canada, a subject of the King of Great Britain, have invented certain new and useful Improvements in Means for Compressing Springs to Remove Same from Trucks; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates particularly to the removal of the elliptic motion springs of trucks for the purpose of renewal or replacing the spring when they lose their temper or for renewing other parts of the truck where it is necessary to take out the spring. The object of my invention is to render the operation both simple and safe while using in the main standard equipment. To this end the invention consists in combining with a jack such as is suitable for use in changing the brasses in journal boxes, for packing cars and other purposes, means for temporarily effecting connection between the jack and one of the sills of the truck in order that when the jack is operated with its opposite end in bearing relation with the bolster it will depress the latter relatively to the sill and consequently compress the spring sufficiently to permit a buckle to be slipped over it in its compressed condition ready for removal upon release of the jack.

For full comprehension, however, of my invention, reference must be had to the accompanying drawings in which similar reference characters indicate the same parts, and wherein:

Figure 1 is an elevation illustrating a portion of a truck with my invention applied thereto;

Fig. 2 is a side elevation showing the associated parts in section and the jack removed;

Fig. 3 is a plan view thereof;

Fig. 4 is a fragmentary view showing the buckle in position after the springs are depressed;

Fig. 5 is a perspective view of the buckle;

Fig. 6 is a perspective view of the rest; and

Fig. 7 is a perspective of the retaining plate.

The side sill of the truck is indicated at *b* and the spring to be removed at *c*, the bolster at *d*, the cast iron block for positioning the bolster relatively to the spring being indicated at *e*. These parts are well known and need not be described in detail as they may be members of any type of truck.

The preferred embodiment of my invention comprises a stirrup, a stirrup retainer and a rest for the cross head while being assembled.

The stirrup consists of a cross head consisting of a central bearing *h* preferably of substantially circular form and having lateral arms *g* with shoulders g^1 at their ends, and of sufficient length to extend beyond the opposite sides of the bolster. This cross head carries a pair of stirrups *i* in the form of flat hooks with slotted upper ends *j* and the hooks extending inwardly as at *k*, relatively to the truck, while the outer edge is preferably extending a short distance below the bottom of the hook as at *m* to extend the guiding faces. These stirrups are guided in their movement and retained against displacement by a retaining plate *n* with its ends offset as at *o* and slotted as at *p* to engage the stirrups, the main body of the plate has holes *s* for safety pins *t*. These safety pins are inserted through this plate into the holes in the ends of the bolster and usually provided for fastening the side bearings. The side bearings are always removed before any attempt is made to compress the spring, thus making these holes available for my safety pins.

In order to compress the spring according to my invention it is necessary to expand the space between the cross head *h* and the retaining plate *n*. To perform this function I employ a lifting jack of suitable dimensions and capacity, preferably a fifteen ton jack. The jack I have illustrated consists of a cylinder *u* with piston *v* and ratchet lever *w*, the cylinder being usually cast with a circular base *x*.

In order to facilitate assembling the members of my compressor to enable it to be operated by a man or a boy I provide a rest consisting of an angular plate the lower leg 2 of which is hooked as at 3 to engage the gusset plate b^1 of the sill and the upper leg 4 receives and supports the cross head while the stirrups are being suspended from it; while the vertical leg 5 is of sufficient height to accommodate the particular jack employed.

In making the stirrups it will be necessary to take the height of the jack into consider-

ation as their length should be sufficient to have their hooks *k* engage beneath the side sill while suspended from the cross head and the cross head rests on the plunger or piston of the jack. In order to retain the spring in compressed condition a collar 10 is employed.

Assembly.

In assembling my spring-compressor the rest 2—3—4 is hooked to the gusset plate and the cross head is placed upon it, after which the stirrups *i* are hung on the ends of the cross heads and the hook ends *k* are engaged beneath the sill *b*. The retaining plate *n* is then set on the end of the bolster where it is retained against displacement by safety pins *t*, the slots *p* engaging the stirrups and preventing displacement thereof from their positions engaging the sills. The jack is then placed on the retaining plate *n* with its piston in line with the mouth of the cross head-rest.

Operation.

In the operation of my spring-compressor the ratchet lever *w* is operated to cause the piston to rise and engage the cross head and as the operation is continued the abutment presented by the cross-head through the stirrups and the sill of the truck causes the end of the bolster to be depressed and the spring to be compressed. When the spring has been compressed to a sufficient degree the collar 10 is slipped over it after which the jack is contracted and removed, thus releasing the cross head, stirrups and retaining plate and permitting the equipment to be moved to the opposite end of the bolster.

When the spring is compressed and before the jack is contracted a key 20 is inserted in the front of the collar and between the sections of the spring and held by a split cotter 21. This prevents the collar being sprung off the spring when the jack releases the latter.

The jack illustrated is one well known to the railroads but other jacks of suitable dimensions and capacity may be employed, and other means may be employed for transmitting the force of the jack to the spring while utilizing the sill or other relatively fixed part of the truck, as the abutment without departing from the spirit of my invention.

What I claim is as follows:

1. Means for compressing springs to remove same from trucks consisting of means detachably engaging a fixed part of the truck, and an expansile device adapted to act as a strut between the said means and the spring to be removed whereby the latter is compressed when the device is expanded.

2. Means for compressing springs to remove same from trucks having a displaceable member adapted to exert pressure upon the spring, a cross head, a tension device effecting an operative connection between the cross head and a part of the truck for the purpose of alining the cross head with the truck members bearing upon the spring, and a compression device constructed and arranged to bear between the cross head and the said displaceable member.

3. In means for compressing an elliptic spring to remove same from a truck having a bolster upon which the spring acts, and a side sill, the combination with a jack adapted to be set upon one end of the bolster, said jack including a piston, a cross head resting upon the piston of the jack, a pair of hooked stirrups having one end hooked for engagement with the sill and the other end slotted to engage the cross head.

4. In means for compressing an elliptic spring to remove same from a truck having a bolster upon which the spring acts, and a side sill, the combination with a retaining plate and means detachably fastening the same upon the end of the bolster, a jack bearing upon the retaining plate, said jack including a piston, a cross head bearing upon the piston of the jack, a pair of stirrups slidably engaged and retained in working position by the retaining plate and having one end hooked for engagement with the end side of the sill and the other end slotted for engagement with the cross head.

5. In means for compressing an elliptic spring to remove same from a truck having a bolster upon which the spring acts, and a side sill, the combination with a retaining plate and means detachably fastening the same upon the end of the bolster, a jack bearing upon the retaining plate, said jack including a piston, a cross head bearing upon the piston of the jack, a pair of stirrups slidably engaged and retained in working position by the retaining plate and having one end hooked for engagement with the end side of the sill and the other end slotted for engagement with the cross head, and a member for supporting the cross head while assembling.

6. In means for compressing an elliptic spring to remove same from a truck having a bolster upon which the spring acts, and a side sill, the combination with a retaining plate and means detachably fastening the same upon the end of the bolster, a jack bearing upon the retaining plate, said jack including a piston, a cross head bearing upon the piston of the jack, a pair of stirrups slidably engaged and retained in working position by the retaining plate and having one end hooked for engagement with the underside of the sill and the other end slotted for engagement with the cross head, and a member for supporting the cross head while assembling, and consisting of an angular

plate, one leg of which detachably engages the truck and another leg serves as a rest for the cross head.

7. Means for compressing springs to remove same from trucks, a cross-head and tension device tying the cross-head to a part of the truck in position alining the cross-head with the truck members bearing upon the spring to be removed, a displaceable member adapted to bear upon the spring and in operative engagement with said device, and a compression device bearing between the cross-head and the said displaceable member.

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

JOSEPH MARTEL.

Witnesses:
GORDON G. COOKE,
WILLIAM J. C. HEWETSON.