This invention relates to improvements in battery cell extractors, and the object of the improvement is to afford an implement that may be readily applied to an electric storage battery and its cells extracted from their case without resorting to the use of heat to melt the agent with which the cells are sealed in place within their case. Ordinarily, the cells are subjected to more or less damage by excessive heat applied in the effort to release the cells from their bonding seal, and considerable labor is expended in removing the sealing agent preliminary to releasing the cells to permit their withdrawal from the case, and the present invention contemplates an appliance by which the seal that confines the cells in the case may be broken and the cells removed by the application of mechanical force without first reducing the seal to a plastic state.

These, and other objects, as will appear, are accomplished by the construction illustrated in the accompanying drawings in which,

Fig. 1 is a side elevation of an implement embodying the invention applied to a battery of ordinary type, parts being in section; and

Fig. 2 is an end elevation projected from Fig. 1.

The characters appearing in the description refer to parts shown in the drawings and designated thereon by corresponding characters.

The invention consists of a horse formed of a metal channel bar 1, disposed horizontally with its flanges 2 extending up, and supported at its ends upon corresponding standards 3 and 4 respectively to which it is secured by rivets 5—5'. The standard 3 is riveted tightly to the bar 1 so as to be rigidly fixed thereto, while the other standard 4 is loosely riveted to the bar so as to permit outward and inward swinging movement of the standard.

A retracting spring 6 attached at one end to the bar 1 and at its opposite end to the standard 4 tends to hold the standard in its innermost position.

Each standard has at its lower end a base or foot 7 formed of angle iron with one of its flanges extending down along the outer edge of the foot so that the horse, when positioned upon the battery case 8, each foot will rest upon the corresponding side wall 9 thereof and bear against the outer face of the wall to a more or less extent according to the action of the spring 6. The swinging movement of the standard 4 facilitates the placing of the horse upon the battery case and compensates for variations in the width of cases.

The bar 1 has a central opening 10 therein, through which loosely extends a jack-screw 11 that is provided with a nut 12 threaded thereon, which nut is of such size as to be received freely between the flange 2 of the bar and as to be prevented by said flanges from turning relative to the bar. The upper end of the screw 11 has a squared head 13 upon which is mounted a removable wrench 14, there being a socketed sleeve 15 on the wrench that fits upon said head, by which wrench the screw is turned in the nut 12.

The lower end of the jack-screw 11 extends through a cross-head formed of a metal channel bar 16 disposed horizontally with its flanges 17 extending downward, there being an opening 18 in the cross-head through which the jack-screw extends loosely. Upon the lower end of the jack-screw beneath the base of the cross-head is fixed a nut 19 of such proportions as to admit of the nut turning freely between the flanges 17 as the jack-screw is revolved in the cross-head. Each end of the cross-head has a transverse pivot 20 extending through its flanges upon which is loosely suspended a grapple member, each of which consists of a pair of arms 21 provided at the lower ends with corresponding inward hooks 22 provided with sharpened edges. Said pair of arms are connected by a bolt 23 and are held apart by an intervening compression spring 24 through which the bolt 23 extends. A nut 25 on the extending end of the bolt acts against the corresponding arm 21 so that said pair of arms are adjustably moved respecting each other accordingly as the nut 25 is turned.

In utilizing the invention the hose is positioned upon the battery case 8, as indicated in Fig. 1, and the grapple members are
plied to the corresponding terminal, posts 26
that extend upwardly from the battery cell
27 located in the case 8. Each grapple mem-
ber is positioned respectively with the corre-
sponding post between its sharpened hooks,
which hooks are impressed into the post forc-
ibly by turning the nut 25, there being a
socket 28 on the end of the wrench 14 for the
purpose of manipulating the nut. The jack-
screw is then raised by turning it in the nut 12
by which lifting force is applied to the bat-
tery cell so that its removal from the case is
effected. By grasping the bar 1, the appli-
cance, together with the extracted cell may be
carried bodily away from the case.

What I claim is:

1. An appliance for extracting battery
cells from their case consisting of a horse
provided with a main bar and a supporting
standard at each end thereof, one of which
standards is rigidly fixed to said bar and the
other of which is loosely attached thereto so
as to have outward and inward swinging
movement relative thereto; a retracting
spring connecting said bar and said loosely
connected standard; a jack-screw extending
loosely through said bar provided with a
threaded nut thereon that is normally held
from rotation by said bar, there being up-
turned flanges on said bar engaging said nut
so as to prevent turning of said nut relative
to said bar; a cross-head through which the
lower end of said jack-screw loosely extends
centrally; a nut fixed on the extending lower
end of said jack-screw engaging said cross-
head; and a pair of grapple members, one at
each end of said cross-head, each grapple
member consisting of a pair of arms spaced
apart, and pivotally connected to said cross-
head, there being an inturned hook at the
lower end of each arm, and a spring re-
strained clamping means connecting the
arms.

2. An appliance of the class described,
consisting of a horse applicable to the case of a
battery upon the walls thereof; a jack-screw
extending loosely through the top of the
horse and provided with a nut threaded
thereon that is normally held from rotation
by the horse; a cross-head through which the
lower end of the jack-screw extends loosely,
there being a nut on the lower end of the
jack-screw to prevent its withdrawal from
said cross-head; and a pair of grapple mem-
ers, one at each end of said cross-head, each
grapple member consisting of a pair of arms
spaced apart and connected by a clamping
means.

3. An appliance of the class described con-
sisting of a horse applicable to the case of a
battery upon the walls thereof; a jack-screw
extending loosely through the top of the
horse and provided with a nut threaded
thereon engageable by the horse so as to pre-
vent rotation thereof; and a grappling de-