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Ellman et al.

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[54] **MOBILE CART FOR ELECTROSURGICAL INSTRUMENT AND ACCESSORIES THEREFOR**

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[52] U.S. Cl. **312/249.12; 312/249.1; 312/223.1; 312/223.6; 312/209**

[58] **Field of Search** 312/249.1, 249.4, 312/249.5, 249.8, 249.11, 249.12, 249.13, 209, 237, 223.6, 400, 223.3, 406, 116, 223.1

[57] ABSTRACT

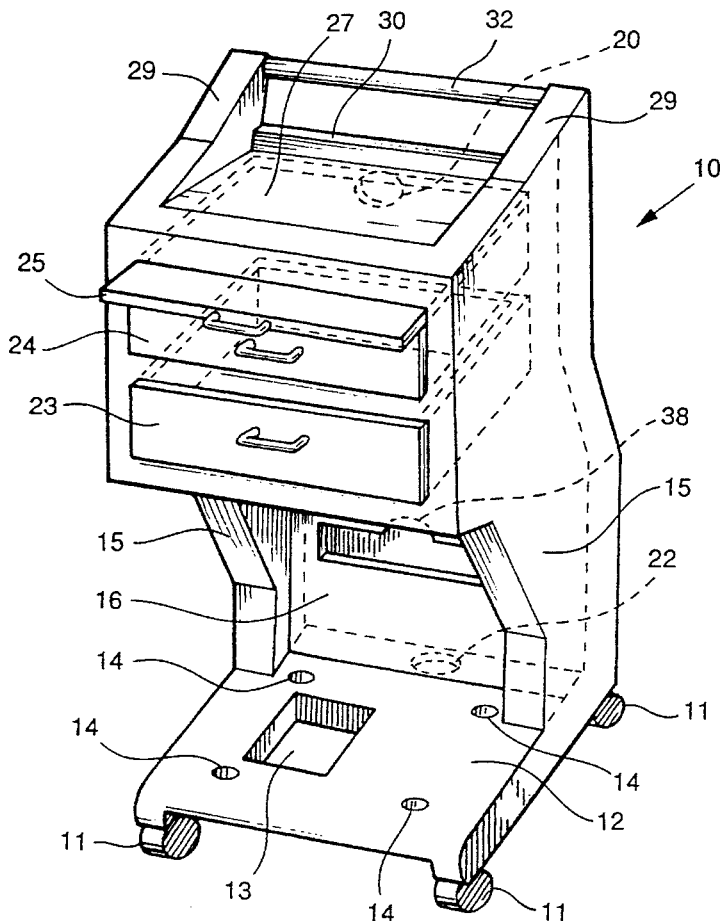
A mobile cart comprises a platform for supporting at least a commercially available electrosurgical instrument or apparatus and a smoke evacuator system. Preferably, the mobile cart contains further means for housing additional accessories. The cart is constructed to provide a protected region within which electrical wiring can be run to ensure the wire does not interfere with the surgeon while performing an electrosurgical procedure.

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10 Claims, 4 Drawing Sheets



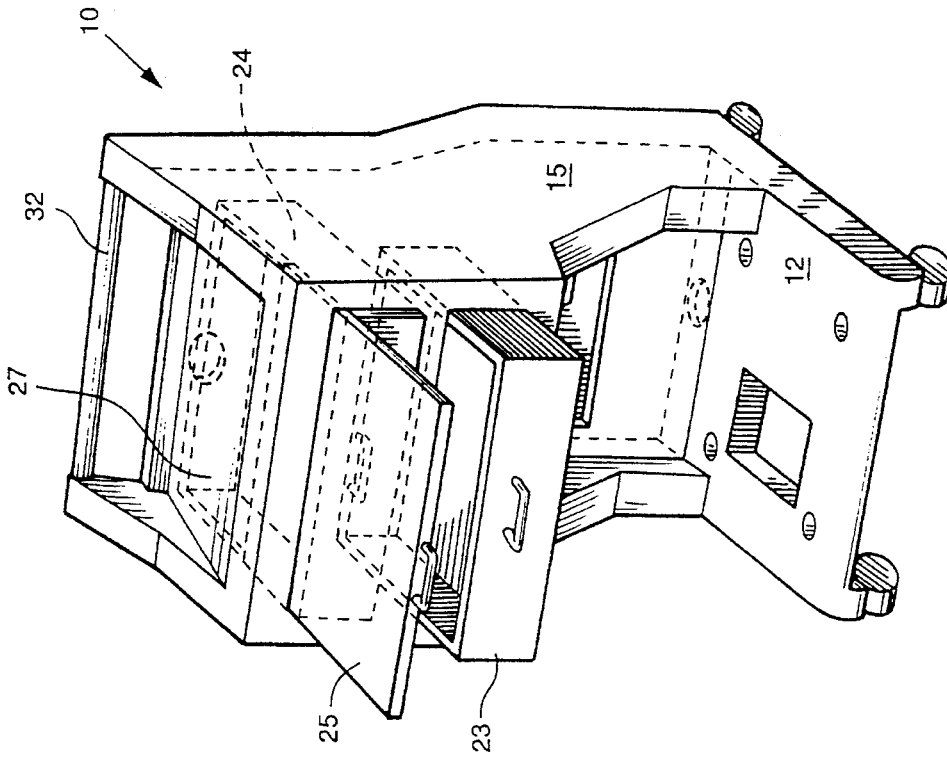


Fig. 2

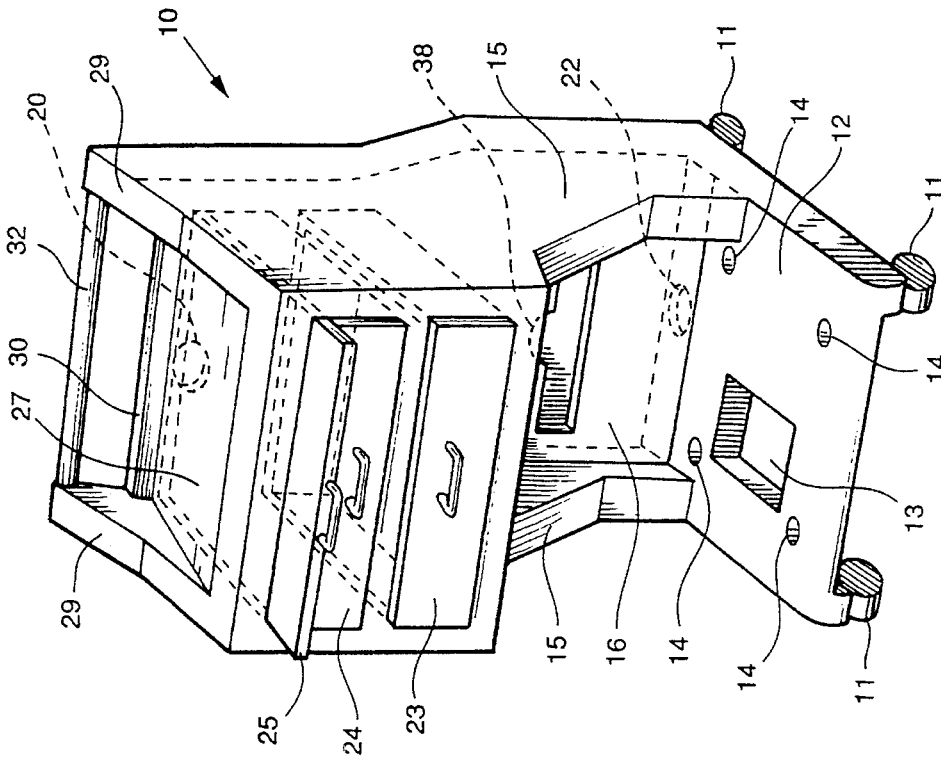


Fig. 1

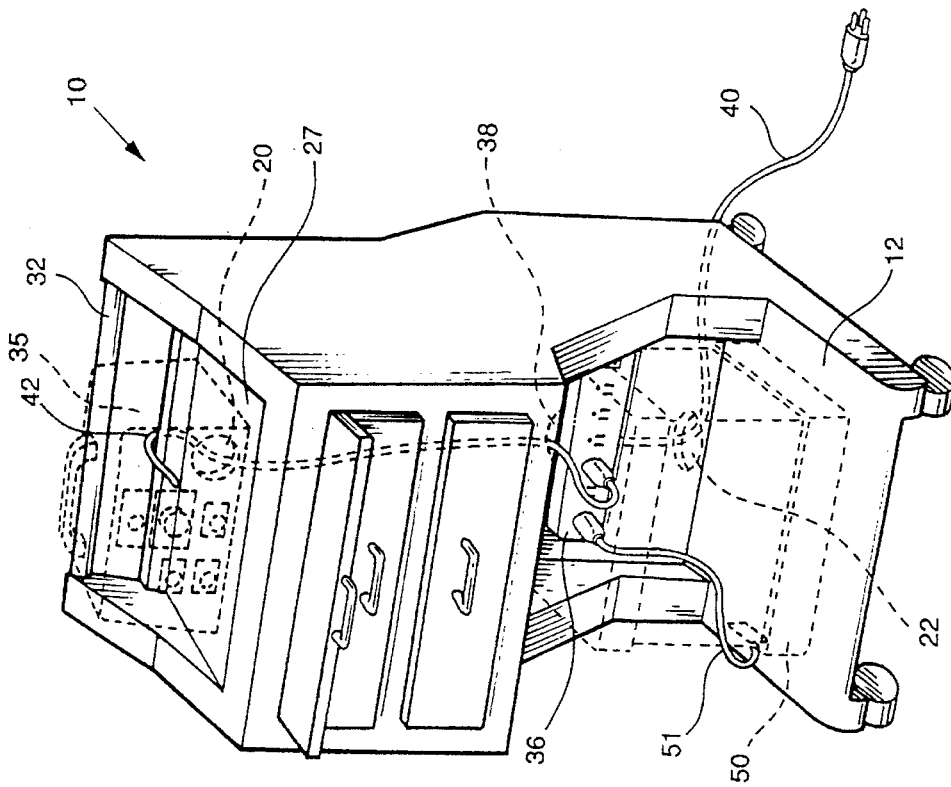


Fig. 4

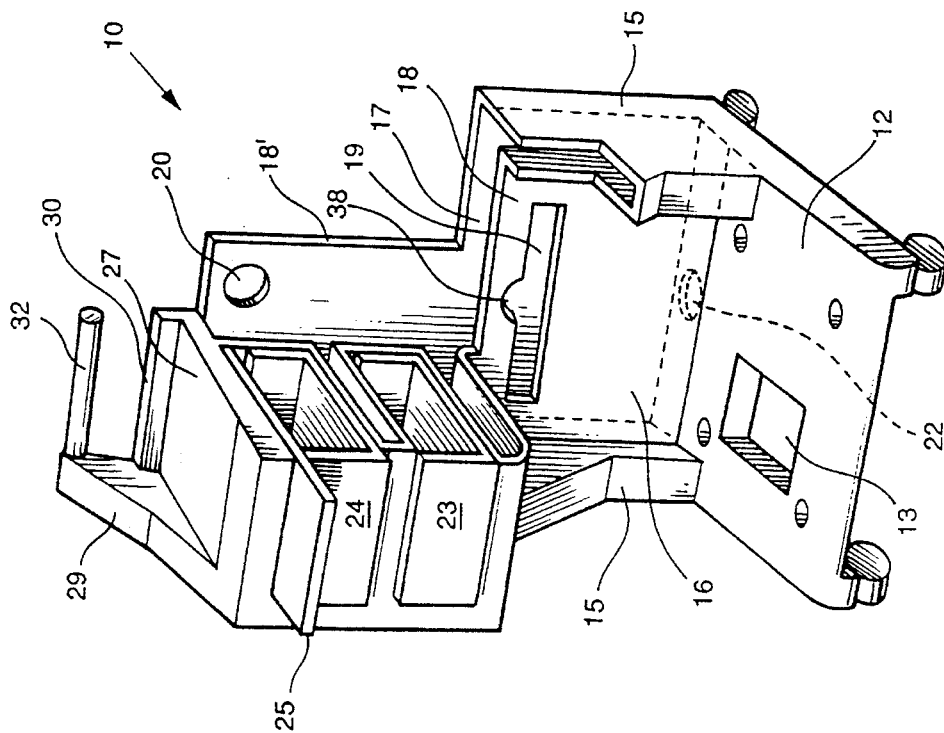


Fig. 3

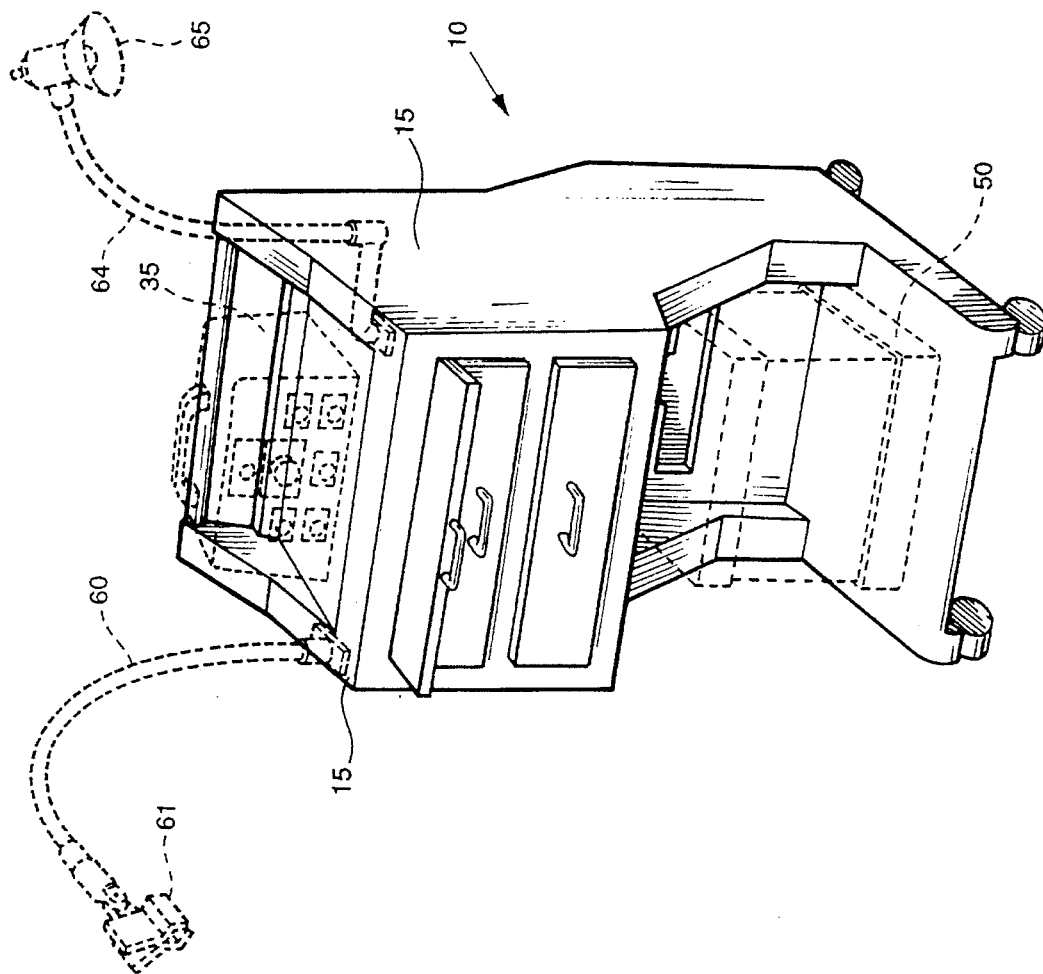


Fig. 5

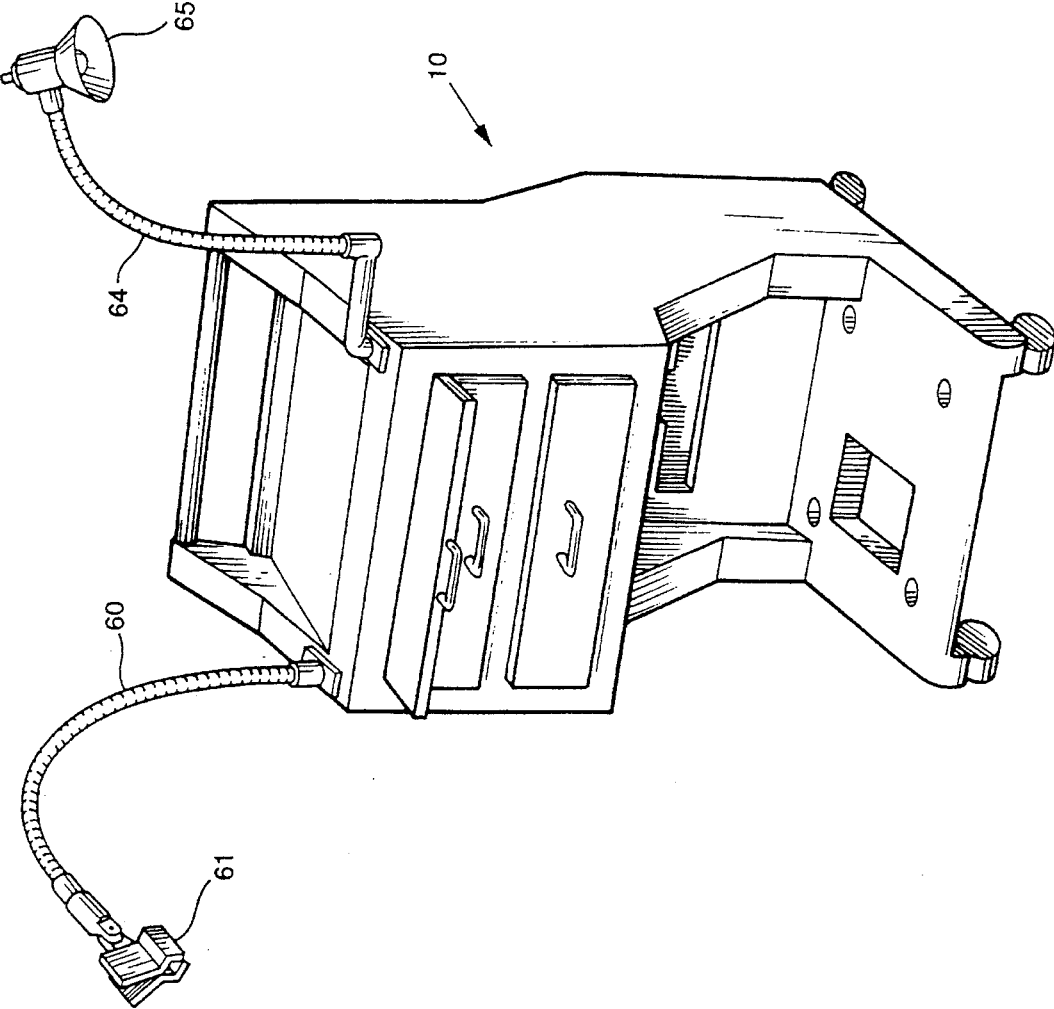


Fig. 6

1

MOBILE CART FOR ELECTROSURGICAL INSTRUMENT AND ACCESSORIES THEREFOR

This invention relates to a mobile cart for an electro-
surgical instrument and accessories therefor.

BACKGROUND OF THE INVENTION

Electrosurgery is becoming a more popular surgical pro-
cedure, and as its popularity increases a greater number of
accessories are becoming available and are being used by
surgeons conducting increasing numbers of medical, dental,
and veterinarian procedures. Surgical carts for housing elec-
trosurgical instruments as well as certain accessories are
available but most are modifications of surgical carts origi-
nally designed for other purposes and are not always the
most convenient nor the most functional specifically to assist
surgeons conducting electrosurgical procedures. Thus, a
need exists in the art for a surgical cart specifically adapted
to provide a chairside or table side location not only for an
electrosurgical instrument but also for the accessories most
frequently used during such procedures.

SUMMARY OF THE INVENTION

An object of the invention is a novel mobile cart providing
improved functionality in support of electrosurgical proce-
dures.

According to one aspect of the invention, the mobile cart
comprises a platform for supporting at least a commercially
available electrosurgical instrument or apparatus, such as the
Ellman SURGITRON F.F.P.F. electrosurgical machine, and
a smoke evacuator system. Preferably, the mobile cart
contains further means for housing additional accessories.

According to another aspect of the invention, the cart is
constructed to provide a protected region within which
electrical wiring can be run to ensure the wire does not
interfere with the surgeon while performing an electro-
surgical procedure.

The various features of novelty which characterize the
invention are pointed out with particularity in the claims
annexed to and forming a part of this disclosure. For a better
understanding of the invention, its operating advantages and
specific objects attained by its use, reference should be had
to the accompanying drawings and descriptive matter in
which there are illustrated and described the preferred
embodiments of the invention, like numerals designating the
same or similar parts.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of one form of mobile cart
according to the invention;

FIG. 2 is a perspective view similar to FIG. 1 showing the
cart with extended shelf and drawer;

FIG. 3 is a perspective view similar to FIG. 1 with the top
quarter cut away to show the interior construction of the cart;

FIG. 4 is a perspective view similar to FIG. 1 showing in
phantom an electrosurgical instrument on the cart;

FIG. 5 is a perspective view similar to FIG. 1 showing the
cart and in phantom an electrosurgical instrument, an acces-
sory, and a holder and lamp mounted on the cart;

FIG. 6 is a perspective view similar to FIG. 1 of a
modification of cart according to the invention.

2

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

One form of mobile cart according to the invention is
illustrated in FIGS. 1-3. The cart **10** comprises a wide stable
base **12** mounted on four hospital-grade locking wheels **11**.
The base **12** contains four holes **14** located at the corners of
a rectangle, and a relatively large through-opening **13** inside
the rectangle. Upstanding from the base are two side wall
sections **15** connected to a rear wall section **16**. As will be
observed from FIG. 3, the side wall and rear wall sections
15, 16 are double-walled to form a generally empty closed
space **17**. The front part **18** of the rear wall **16** close to the
base contains a first horizontally-elongated opening **19** into
the closed space **17**, and the rear part **18'** of the rear wall **16**
contains a second opening **20** higher up also leading from
the back into the closed space **17**, and the base contains at
its bottom an opening **22** leading outwardly to the bottom
from the closed space **17**. Projecting forward from the rear
wall **16** is structure defining two pull-out drawers **23, 24** and
a pull-out shelf **25**. Above the latter at the top of the cart is
a fixed shelf **27** which is slightly tilted downward toward the
rear wall. The top shelf **27** is surrounded on three sides by
two side walls **29**, a rear edge **30**, and up above by a
horizontal rail **32**. FIG. 2 is a similar view showing the
bottom drawer **23** extended and the pull-out shelf **25**
extended.

FIG. 4 shows a common way of using the cart **10** of FIG.
1. An electrosurgical instrument **35**, in phantom, is shown
positioned on the top fixed shelf **27**. The tilting of the latter
allows easier access to the electrosurgical instrument and
improve visibility of its controls. An electrical power strip
36 is mounted in the rectangular opening **19** in the rear wall
16. The power cord **40** of the power strip **36**, located at its
rear, can now pass through the closed space **17** down to the
bottom opening **22** and to the outside for plugging into a
local wall socket. The power cord **42** of the electrosurgical
instrument **35** can pass through the space under the rail from
which it can pass through the opening **20** in the rear wall **16**
and into the closed space **17** from which it descends down
to a small semi-circular extension **38** of the opening **19** and
through the latter where it can be plugged into the power
strip **36**.

Seated on the bottom shelf **12** is a smoke and odor
evacuator machine **50** of a type sold under the tradename
Vapor-Vac by the Ellman company. This electrosurgical
accessory provides suction at a wand (not shown) attached
to the machine and commonly used by surgeons to remove
smoke and odors from the surgical site. The power cord **51**
for the evacuator machine **50** can be brought through the
opening **13** on the bottom shelf **12** and then up and around
the side to be plugged into the power strip **30**. The four holes
14 in the base **12** are for receiving the feet of the evacuator
machine to avoid machine movement when the cart is
moved. The drawers can conveniently hold various elec-
trodes, handpieces, and other accessories for use with the
electrosurgical instrument. The pull-out shelf **25** provides
increased working space if desired. The rail **32** at the top can
also serve as a handle for moving the cart.

Preferably, the cart **11** is made of a strong but lightweight
plastic so that it is easily managed even with the equipment
shown in place.

FIG. 5 is a view similar to FIG. 4 but with two additional
accessories permanently mounted on top of the two side
walls **15** of the cart **10**. The accessory on the left is a
gooseneck arm **60** which terminates in an adjustable holder
61 adapted to hold the wand (not shown) used with the

3

evacuator machine and whose end supplies the suction wherever the surgeon needs it. The gooseneck arm 60 allows the surgeon to position the wand wherever desired. The accessory on the right is a similar gooseneck arm 64 but in this case supporting an electric lamp 65 for providing extra illumination of the surgical site. FIG. 6 illustrates a modification in which the cart 10 is provided permanently with the goosenecked holder 60, 61 and goosenecked lamp 64, 65. FIG. 6 also shows a swivel joint 68 at the base of the goosenecked lamp for greater flexibility.

It will be appreciated that the cart of the invention is not limited to use with the Ellman company instrument and accessory but is equally useful to support other brands of electro-surgical instruments and accessories.

The cart of the invention offers the advantages of being uniquely suited for supporting an electro-surgical instrument and accessories therefor at a chairside or tableside location close to where the surgery is to be performed. It provides a central, convenient location for all electro-surgical instruments and accessories. It provides more usable storage space as well as more usable counter space for the surgeon. The inside protected space in which electrical wires can run while yet allowing easy connections both to the instrument or accessory protects against loose external wiring that can interfere with the surgeon. The incorporated power strip provides convenient outlets for plugging in handpieces and bipolar forceps.

While the invention has been described in connection with preferred embodiments, it will be understood that modifications thereof within the principles outlined above will be evident to those skilled in the art and thus the invention is not limited to the preferred embodiments but is intended to encompass such modifications.

What is claimed:

1. A mobile cart adapted for supporting an electro-surgical instrument and accessories therefor, comprising:

- (a) a wheeled platform having a base, an upstanding rear wall, and upstanding side walls, said base having a front surface and being sized to receive and support a large accessory for an electro-surgical instrument when placed thereon during use,
- (b) a superstructure supported on the side and rear walls, said superstructure comprising:
 - (i) a drawer for holding accessories,
 - (ii) a movable shelf above the drawer,
 - (iii) a fixed shelf above the movable shelf partly surrounded by side and rear members, said fixed shelf having a front surface and being sized to receive and support an electro-surgical instrument when placed thereon during use,

4

(iv) the rear wall comprising double walls providing an empty substantially closed surface for running electrical wiring vertically between the fixed shelf and the base.

2. The mobile cart of claim 1, further comprising a goosenecked holder mounted on top of one of the side walls.

3. The mobile cart of claim 2, further comprising a goosenecked lamp mounted on top of the other of the side walls.

4. The mobile cart of claim 1 in combination with an electro-surgical instrument mounted on the fixed shelf and a smoke evacuator machine mounted on the base.

5. The mobile cart as claimed in claim 1, wherein the fixed shelf is tilted downward toward the rear wall for easier visibility of an instrument when placed on the fixed shelf during use.

6. The mobile cart as claimed in claim 1, wherein the side members surrounding the fixed shelf are lower at the front surface of the fixed shelf for easier access to the fixed shelf.

7. The mobile cart as claimed in claim 1, wherein the upstanding side walls are cut away at the front surface of the base for easier access to the base.

8. The mobile cart as claimed in claim 1, wherein the rear wall has openings to the substantially closed space adjacent the fixed shelf and adjacent the base.

9. A mobile cart adapted for supporting an electro-surgical instrument and accessories therefor, comprising:

- (a) a wheeled platform having a base, an upstanding rear wall, and upstanding side walls, said base being sized to receive and support a large accessory for an electro-surgical instrument when placed thereon during use,
- (b) a superstructure supported on the side and rear walls, said superstructure comprising:
 - (i) a drawer for holding accessories,
 - (ii) a movable shelf above the drawer,
 - (iii) a fixed shelf above the movable shelf partly surrounded by side and rear members, said fixed shelf being sized to receive and support an electro-surgical instrument when placed thereon during use,
- (c) the rear wall being double-walled providing a substantially closed space for running electrical wiring,
- (d) a front part of the double-walled rear wall having an elongated first opening for receiving an electrical power strip, a rear part of the double-walled rear wall having a second opening for receiving an electrical power cord, and the base below the closed space having an opening for passing electrical cords.

10. The mobile cart of claim 9, wherein the first opening has an extended opening for passing an electrical cord.

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