In the view field controller **931**, the video signal is input to the gravity center calculator **935**. The view field controller **931** calculates the centers of the color markers **938***a* and **938***b* and generates signals representing the centers calculated. These signals are supplied to the position-inferring device **936**. The device **936** infers the position of the distal end of the forceps **813** and produces the data representing this position. The data is supplied to the position-designating device **937**. The device **937** finds the difference between the data representing the position of the distal end of the forceps **813** and the pixel data representing a designated position on the TV monitor screen, at which to display the distal end. The difference is the distance by which to move the image of the distal end to the designated position. The data representing the distance is supplied to the electric manipulator **861** when the surgeon turns on the foot switch **932**.

How the position-inferring device **936** infers the position of the distal end of the forceps **813** will be explained.

The position of the distal end, $(x_0, y_0)$, can be calculated as follows:

$$(x_0, y_0)=(B/A*(x_2-x_1)+x_2, B/A*(y_2-y_1)+y_2) \quad (1)$$

where $(x_1, y_1)$ is the position of the color marker **938***b*, $(x_2, y_2)$ is the position of the color marker **938***a*, A is the distance between the color markers **938***a* and **938***b*, and B is the distance between the color marker **938***a* and the tips of the tongs **815**.

The first color marker **938***b* may not be seen, concealed behind an organ or covered with body fluid. In this case, the position $(x_0, y_0)$ is inferred as follows:

$$(x_0, y_0)=(B/A*(x_2'-x_1')+x_2, B/A*(y_2'-y_1')+y_2) \quad (2)$$

where $(x_1', y_1')$ and $(x_2', y_2')$ are the positions the markers **938***b* and **939***a* assume immediately before the first marker **938***b* becomes invisible.

Further, the second color marker **938***a* may not be seen, hidden behind an organ or covered with body fluid. If this is the case, the position $(x_0, y_0)$ is inferred as follows:

$$(x_0, y_0)=((B+A)/A*(x_2'-x_1')+x_1, (B+A)/A*(y_2'-y_1')+y_1) \quad (3)$$

where $(x_1', y_1')$ and $(x_2', y_2')$ are the positions the markers **938***b* and **939***a* assume immediately before the second marker **938***b* becomes invisible.

Three color markers, instead of two, may be provided on the distal end portion of the forceps **813**, and the positions of two of three markers may be used to calculate the position of the distal end of the forceps **813**. In addition, the foot switch **932** may be replaced by a hand switch which is attached to the handle **816** of the forceps **813**.

Provided on the distal end portion of the forceps **813**, not on the tongs **815**, the color markers **938***a* and **938***b* remain visible on the screen of the TV monitor **832** during the endoscope surgery. Even if the tongs **815** are located behind an organ or a tissue and inevitably becomes invisible, the position of the distal end of the forceps **813** can be detected reliably.

Furthermore, even if the color marker **938***a* or **938***b* becomes invisible, hidden behind an organ or covered with body fluid, the present position of the distal end of the forceps **813** can be inferred from the positions which the markers **938***b* and **939***a* had assumed immediately before the second marker **938***b* became invisible. This enables the surgeon to switch the view field of the rigid scope **801**, while performing the endoscope surgery.

In the thirty-sixth embodiment, the electric manipulator **861** holding the rigid scope **801** is used as means for switching the view field of the scope **801**. Instead, an XY stage supporting an CCD may be incorporated in a magnifying optical system of the type employed in the first embodiment and may be moved to switch the view field of the scope **801**.

Additional advantages and modifications will readily occur to those skilled in the art. Therefore, the invention in its broader aspects is not limited to the specific details, and representative devices shown and described herein. Accordingly, various modifications may be made without departing from the spirit or scope of the general inventive concept as defined by the appended claims and their equivalents.

What is claimed is:

**1**. An endoscope system comprising:

an endoscope;

a holder for holding said endoscope;

an image pickup section including an image pickup optical system for receiving an endoscopic image from said endoscope, a path branch for branching an optical path of said image pickup optical system into a first optical path and a second optical path, a wide angle image pickup element provided in the first optical path for forming a wide angle image from the endoscopic image, and a magnified image pickup element provided in the second optical path for forming a magnified image from the endoscopic image;

a display for displaying an image provided by said image pickup section;

an object identifier for identifying an object observed through said endoscope;

a position detector for detecting a position of the object from a wide angle image formed by said wide angle image pickup element of said image pickup section, and for generating position data representing the detected position; and

a view field switching control mechanism for moving the magnified image formed by said magnified pickup element of said image pickup section in accordance with said position data, without moving said endoscope, to thereby switch a view field of said endoscope.

**2**. The system according to claim **1**, wherein said view field switching control mechanism includes a switch for actuating a change of said view field.

**3**. The system according to claim **1**, wherein said image pickup section includes a magnification controller for controlling one of said wide angle image pickup element and said magnified image pickup element to form an image in a desired magnification.

**4**. The system according to claim **1**, further comprising an instrument insertable into the patient's body, and wherein said object identifier comprises a colored member provided on a distal end portion of said instrument, and said position detector comprises a color extractor for processing data representing the endoscopic image to thereby extract data representing a position of the colored member.

**5**. The system according to claim **1**, further comprising an instrument insertable into the patient's body, and wherein said object identifier comprises an emphasized outline of a distal end portion of said instrument, and said position detector comprises a data processing circuit for processing data representing the endoscopic image to thereby extract data representing a position of the emphasized outline of the distal end of said instrument.

**6**. The system according to claim **1**, wherein said view field switching control mechanism comprises an actuator for