

Dec. 29, 1959

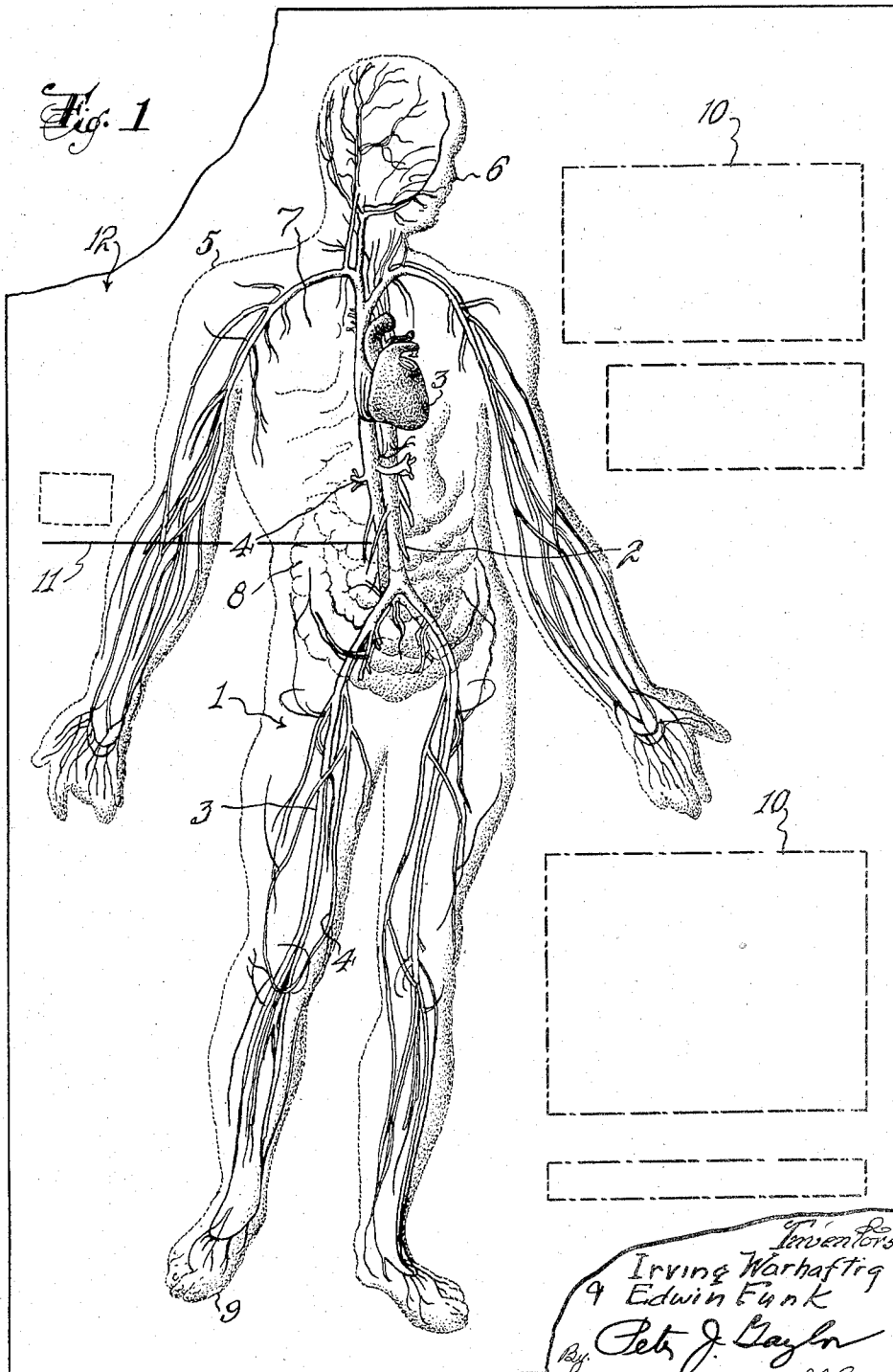
I. WARHAFTIG ET AL

2,918,731

EMBOSSSED ORIENTATION PRINTING

Filed March 25, 1958

4 Sheets-Sheet 1



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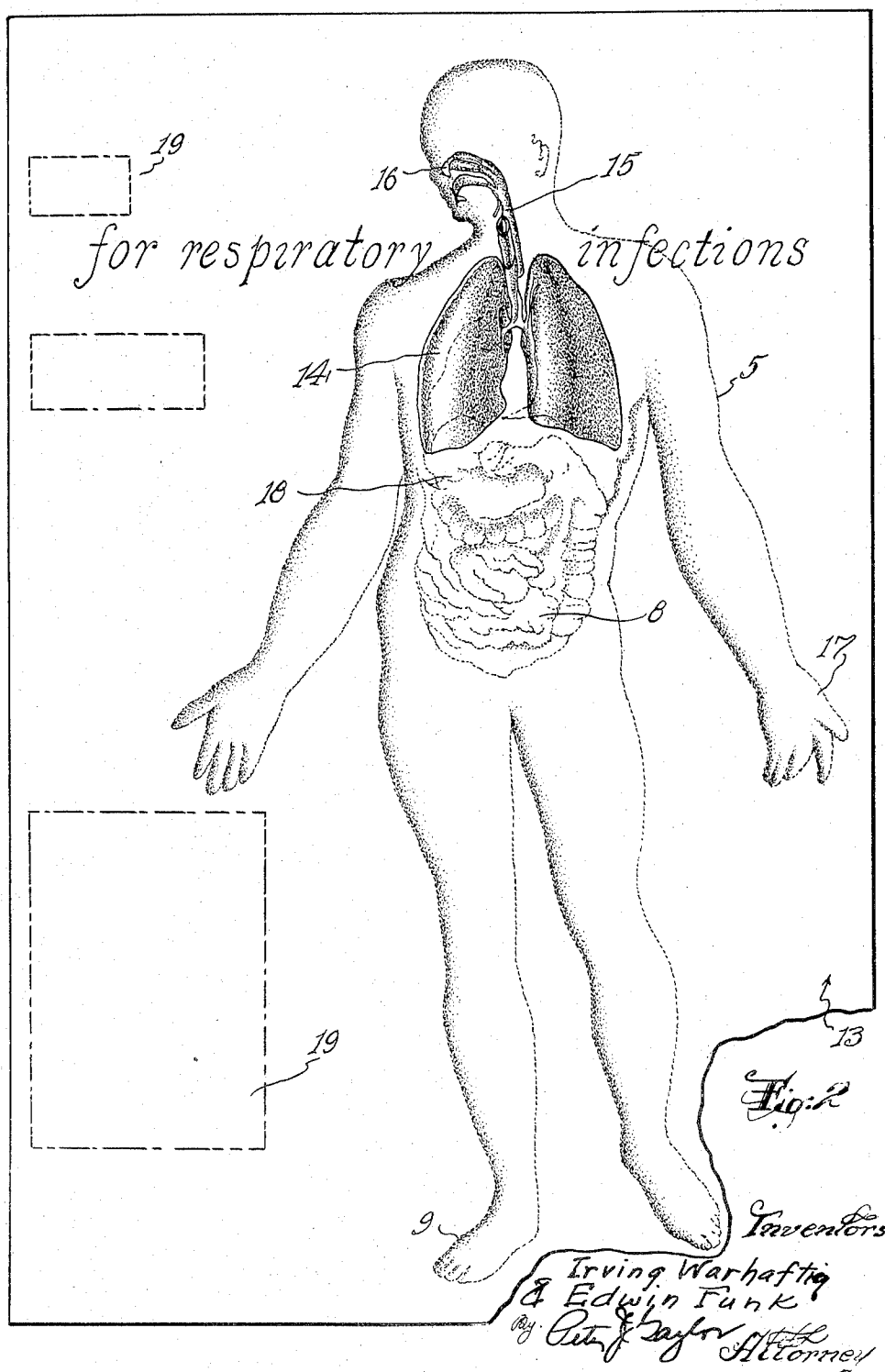
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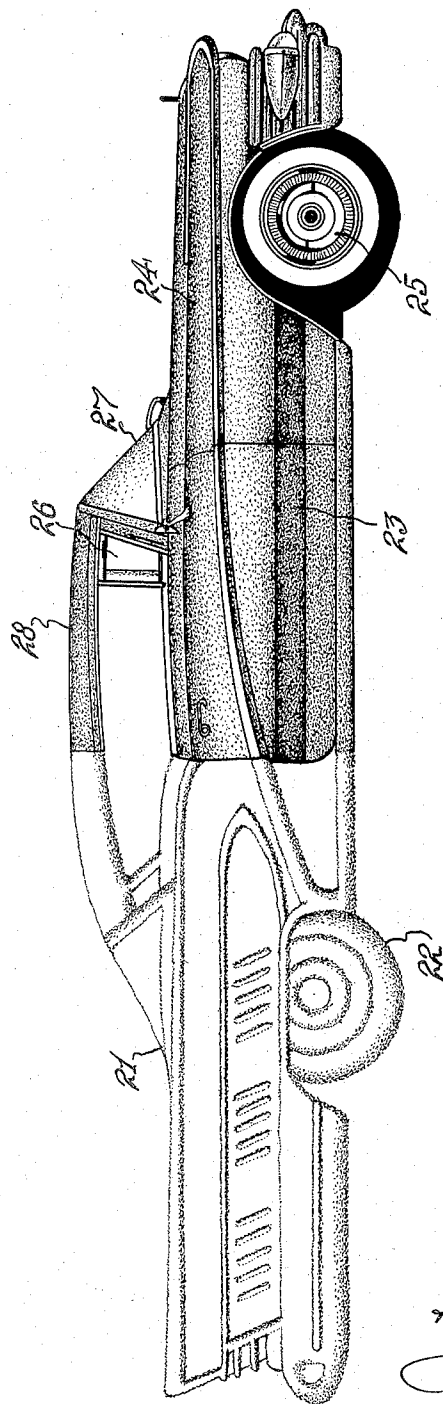


Fig. 3

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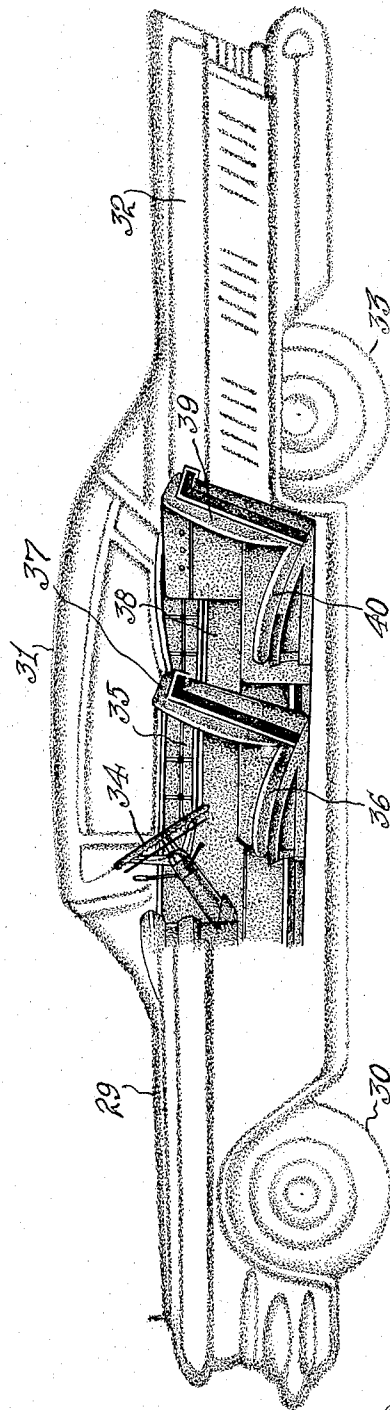


Fig. 4

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2,918,731

EMBOSSSED ORIENTATION PRINTING

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Application March 25, 1958, Serial No. 723,837

3 Claims. (Cl. 35—49)

This invention deals with the printing of reproductions of three-dimensional objects and the simultaneous use of embossing as an accurate means of orientation therefor. More specifically, it deals with the printing (preferably in color) of details of a three-dimensional object, and the accurately registered and scaled embossing thereover of the exterior outline of the object, with or without detail parts, on a sheet, thereby facilitating rapid orientation of the reader without unduly confusing him with printed matter having secondary relevance.

The present invention is particularly adapted for the presentation of internal structure or features, such as certain organs of the anatomy or certain parts of a machine, in a manner making them quickly discernable and orientated with respect to the remaining portions of the anatomy or machine. In the medical field, particularly in the advertising of medicines, it is important to put across a complex message within the brief time it takes to leaf a magazine page by page. Since a picture message is much more effective than words, it is quite a problem to inform the reader by such means, for example, as to the nature and biological effectiveness of a medicine without going into considerable technical verbiage. The present invention accomplishes the purpose adequately by the printing to a scale on a sheet of paper, for example, of an anatomical system to be treated by the medicine advertised, such as, for instance, the cardio-vascular system. Then, there is embossed in cameo over the printing, in relation to the same scale, and accurately registered therewith, a representation of the outline of the body, also showing, if desired, other immediately affected or unaffected or related parts, such as the lungs, stomach, intestines and the like. The arterial system may be printed in red and the veinal system in blue. The point of infection discussed briefly in the advertisement then may be high-lighted by a line directed to the colored or printed portion of the organ or part to be treated. The physician, who already is familiar with anatomy and who has very little time for reading, then may, at a glance, orient himself as to the organ or part treated, in relation to other parts of secondary significance, without much effort, so that his attention is concentrated mainly on the message to be conveyed by the advertisement.

An important feature of the present invention resides in the fact that the reverse side of the embossed sheet also may be employed to convey an additional message, with the embossing, now in intaglio, used to orient the reader as on the obverse side. It is thus possible to present additional interior or exterior features of the three-dimensional object, or, it is possible to present features which advertise an item different from that advertised on the obverse side. For example, the respiratory system, including the lungs, throat and nose, could be printed in color on the reverse side, for the purpose of advertising a medicine for treating respiratory ailments, and use would then be made of the embossed outline, hereinabove described, for orientation, said outline appearing

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in intaglio form on the reverse side. Since some medicines are capable of treating infections in different organs or systems, both the obverse or reverse sides of the embossed sheet may be employed to advertise the same medicine for infections occurring in organs or systems otherwise invisible, confusing, or obscured when printed on one side of the sheet only.

Another important feature of the present invention is that it enables presentation of the front portion of an object, say, in cameo on the obverse side of the sheet, and the back portion of the same object, say, in intaglio, on the reverse side of the sheet, with certain front details printed to scale on the front side, and other back details printed to the same scale on the reverse side, thus eliminating much confusion because of parts which otherwise would cover or confuse the details on their respective side.

The invention will be more readily understood by reference to the accompanying drawings in which Figure 1 illustrates one embodiment of the invention as applied to the obverse side of a sheet of paper and presenting an anatomical object. Figure 2 illustrates the reverse side of the same sheet. Figure 3 shows an obverse side of a sheet dealing with an automobile with some exterior features in detail, while Figure 4 depicts the reverse side of the same sheet of Figure 3 presenting interior details of the same automobile.

Referring again to the drawings, numeral 1 represents a reproduction, printed to scale of the cardio-vascular system in which the arterial system 2 is printed in red, including the heart 3 and other elements of the arterial system. Numeral 4 represents the veinal system which is printed to the same scale in blue. Embossed in cameo is the outline 5 of a man, the embossing being effected in scale which is the same or in relation to the scale of the printed details 1 and accurately in register therewith. Also embossed thereon in a similar manner, are the head 6, the lungs 7, the bowels 8, and the legs 9. These embossed elements are not primarily essential with respect to the ailment to be treated by the particular medicine advertised in portion 10, but they serve to orient the reader readily as to the locus of the infection involved. The point of infection discussed in the advertisement may be indicated by a line 11. Thus, by a quick glance at the advertisement, the reader is easily oriented as to the accurate location of the trouble to be treated without the disturbing effect of otherwise confusing additional printing. Since the embossing is three-dimensional, it still is visible in spite of the fact that the outlines embossed are of the same color as the remaining portion or background of the sheet 12. In addition to the embossing, it is possible to color the embossed area with a light color different than that of sheet 12.

The reverse side 13 of the sheet, as depicted in Figure 2, may have printed thereon in red the respiratory system comprising the lungs 14, the throat 15, the nose 16, etc. Appearing in embossed intaglio form is the outline 5 of the body, showing hands 17, legs 9, stomach 18, intestines 8, etc. Advertising matter 19 describes briefly the medicine for treating the respiratory tract shown in red.

From the foregoing, it is apparent that another presentation may be made of the peritoneal system (on the obverse side), accompanied by advertising matter on a medicine for treating infections as in peritonitis, the background body and organs being displayed in embossed form similarly to that in Figure 1. On the reverse side of the sheet it is possible to show a cross-sectional view of the lungs, for example, for advertising therapy for upper respiratory bacterial infections. Or, it is possible to print on the reverse side of the sheet, in a similar manner, a color sketch of the urinary tract accompanied by adver-

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tising matter on a medicine for saturation control and analgesia in urinary tract infection. On the obverse side thereof, there may be depicted a color drawing to scale, partly in cross-section of the respiratory tract accompanied by advertising material on a medicine for treating infection as in acute respiratory diseases, with a line indicating the locus of infection. Numerous other combinations are possible, it being understood that this invention is not limited to any particular combination described.

As shown in Figures 3 and 4, the invention may be employed to portray mechanical three-dimensional objects, such as an automobile. As illustrated in Figure 3, the entire outline 21 of the automobile may be embossed on the sheet in cameo, and it would appear as depicted in the left-hand side of the figure, the tires being designated by numeral 22. The right side of the automobile further may be printed with exterior details and in color. For example, the body 24 may be colored a blue with a deep blue stripe 23, windshield 27 and windows 26 in a very light blue, top in a blue somewhat lighter than the body, and metal trim can incorporate a gold color, the parts being printed in greater detail than in the embossed portion on the left of the figure. The front wheels may be given a color of reflecting chromium on the hub caps 25, etc.

In Figure 4, the reverse side of the sheet shown in Figure 3 is presented with the scaled outline 32 of the car being in embossed intaglio form. In this case, the top, front and back of the car would remain in embossed form, including front tires 30, rear tires 33, baggage compartment 32 and hood 29. The center portion of the figure, however, may be printed to the same scale in color to depict interior details of the car, such as a deep red steering wheel, silvery chrome trim, reddish brown upholstery 37 and 38, and incorporating details of the cushions 36 and 40 and backs 37 and 39 of the car. In this manner, it is possible to highlight a particular feature which, without accompanying orienting embossing of other portions, might appear somewhat too vague or disjointed. Yet, the orientation has a "subliminal" quality in that it does not appear as an uppermost factor in the mind of the reader to confuse or distract him.

The sheet material to be employed may be a transparent or semi-transparent sheet of paper, plastic, cellophane, or the like, if a single side of the sheet is to be

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employed, only. However, since all advantages of the invention are utilized only by use of both sides of the sheet, it is preferred to employ an opaque or translucent sheet material, such as paper.

This application is a continuation-in-part of copending application Serial No. 691,653 filed on October 22, 1957 by Irving Warhaftig and Edwin Funk and now abandoned.

We claim:

1. A three-dimensional drawing of a three-dimensional object comprising an opaque sheet material, an ink drawing of a detail portion of said object depicted thereon to scale, an embossing in said sheet including the exterior outline of said object superimposed in register in relation to the same scale over the ink drawing, and another detail ink drawing depicted to the same scale on the reverse side of said sheet, of another portion of said object, and within said outline, which outline is designed to serve as orientation means with respect to said ink drawings.

2. A three-dimensional drawing according to claim 1 in which the detail portion ink drawing on the obverse side of said sheet represents a portion which would be exposed by the view represented in the cameo embossing, and the detail portion ink drawing on the reverse side of said sheet represents a portion which would be exposed by the view represented in the intaglio embossing.

3. A three-dimensional drawing of a three-dimensional object comprising an opaque sheet material, an ink drawing of a detail portion of said object depicted thereon to scale, an embossing in said sheet including a related outline of said object, superimposed in register in relation to the same scale over the ink drawing, and another detail ink drawing depicted in relation to the same scale on the reverse side of said sheet, of a portion of said object, which outline is designed to serve as orientation means with respect to both said ink drawings.

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