July 30, 1957 E. M. HINTON 2,800,906

ABSORBENT PAD

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FIG. 1.

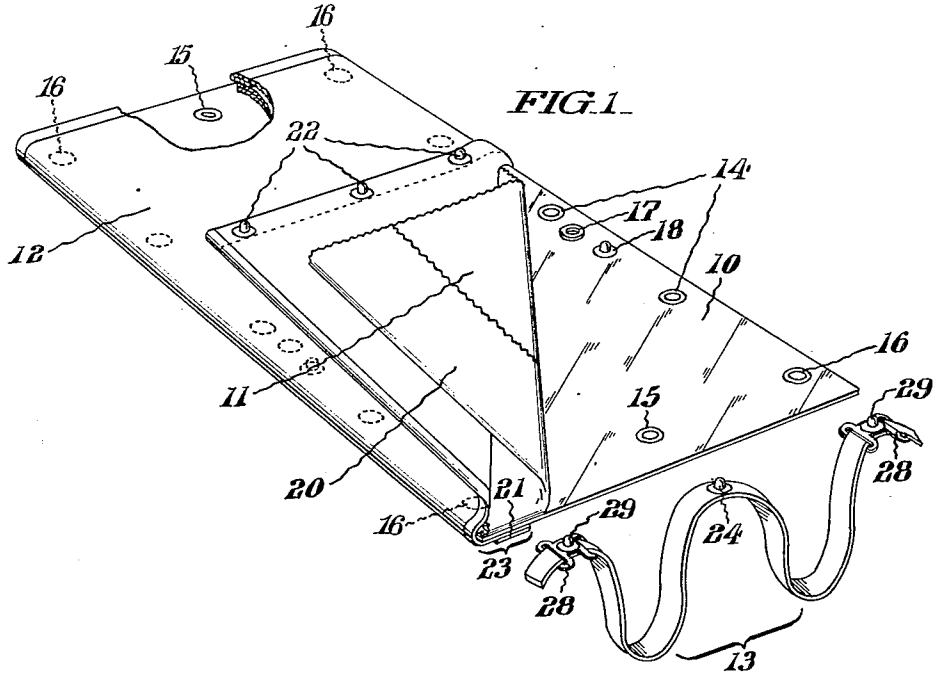
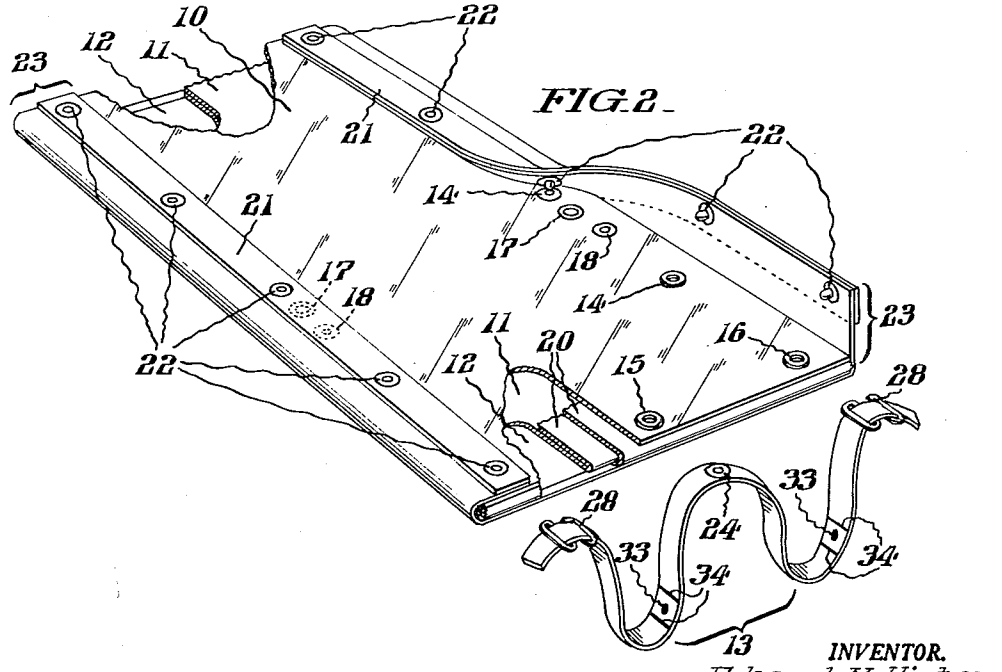



FIG. 2.




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FIG. 3.

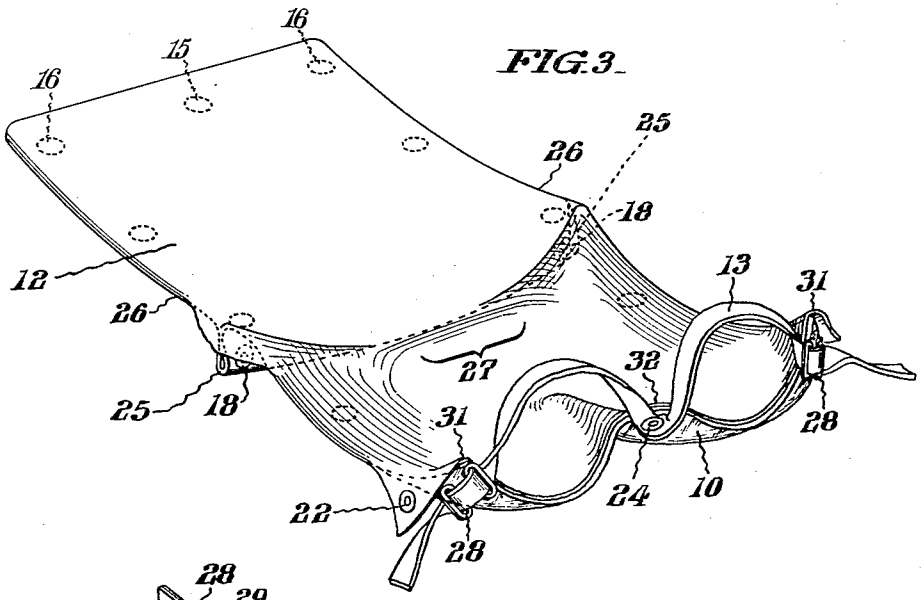
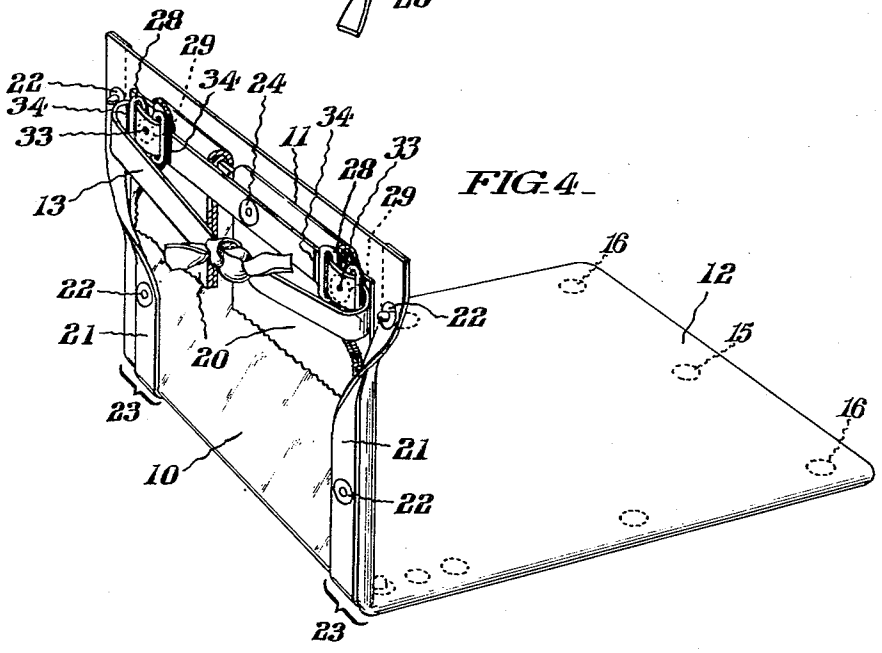



FIG. 4.




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# ABSORBENT PAD

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Application April 30, 1952, Serial No. 285,138

11 Claims. (Cl. 128—286)

This invention relates to an absorbent sanitary pad, and more particularly concerns an adjustable contour pad for helpless and incontinent geriatric, paralytic, or other bedfast patients. The invention further relates to a novel waterproof backing sheet for an adjustable contour pad of this character.

Essential features in a pad that is to meet fully the sanitary needs of the chair or bedfast invalid and the aged are simplicity, efficient catchment and retention of body wastes, freedom from chafing or binding, ease and economy in changing, washing, or sterilizing, and ready adaptability to the necessary changes of body position. Though sanitary pads have been heretofore provided which partially satisfy certain of these, the need continues for a pad that meets them all.

It is well known that the increasing incidence of the aged in our population brings with it an increase in the number of incontinent and sanitary cases under public and private care in privates homes, nursing homes, hospitals, and institutions. Owing, moreover, to shortages of trained nursing personnel, the burden of care falls increasingly upon unskilled or semi-skilled attendants who, as the result of inexperience or the use of make-shift means, are unable to prevent the development of painful skin irritations or skin gangrene.

It is accordingly an object of this invention to provide an adjustable sanitary pad which is well adapted to total and chronic incontinence. Another object is to provide a pad of this character, the shape of which may be adjusted to conform to the contour of the patient's body in different positions. Still another object is to provide an inexpensive absorbent contour pad which may be readily changed with minimum discomfort to the patient, with minimized hazard of bedsores.

A further object of my invention is the provision of means by which the pad can be adjusted or varied in thickness to accommodate the requirements of the particular case, and yet can be disassembled in such manner that it is easily washed and quickly dried.

A still further object of my invention is the provision of structural means to insure peripheral elevation at predetermined points as a result of forces exerted upon a flexible but inelastic surface which rests upon a bed that is more yielding than itself.

A further object of my invention is to provide a sanitary pad which is adequately ventilated, comfortable, nonconfining, and protective of bedding, thereby minimizing washes and insuring economy and comfort to the patient.

A further object of my invention is provision of structural means for attaching a pad to the framework of a chair in such manner that the envelope and absorbent sheets therein are held as a unit, firmly and without slippage at any level along the framework of a chair back and in such manner that the seat depth of the pad can be lengthened or shortened to conform with the seat depth of the chair.

Yet another object is the provision of means by which



the pad may be attached as a sanitary apron or semi-diaper for restless or mild mental patients.

A further object of this invention is to provide a single appliance which is adaptable to different positions of the bedfast or invalid, without close or constricting properties which lead to chafing and irritation of tender skins.

A further object of this invention is to provide a device of the kind described such that rotation of the device at an angle of 90 degrees will accommodate a patient of greater than average width, whilst yet performing the contour function of the pad in normal position.

Other objects and advantages of the invention, including the simplicity of the same, and the ease with which it may be utilized in different positions, will appear in further detail hereinafter and in the drawings, whereof:

Fig. 1 represents a view in perspective, with parts folded back in order to reveal important details, of the front of an adjustable pad embodying features of this invention, together with a strap which is shown disconnected from the pad;

Fig. 2 represents a view in prespective similar to Fig. 1 with the pad and strap inverted, certain parts being broken away in order to reveal further important details;

Fig. 3 represents a view in perspective showing the pad and strap connected together and adjusted to conform to the contour of a reclining or semi-reclining patient; and

Fig. 4 represents a view in perspective showing the pad and strap adjusted for use by a patient in sitting position.

Turning now to the specific embodiment of the invention shown in the drawings, the adjustable contour pad comprises generally a flexible waterproof backing sheet 10, removable absorbent filler sheets 11, a porous pad cover 12, and a strap 13. The backing sheet 10 and pad cover 12 form an envelope, closed at the sides and open at the ends, for the absorbent filler sheets 11.

At each longitudinal edge, the backing sheet 10 carries a plurality of equally-spaced snap fastener sockets 14. The sockets 14 face rearwardly from the rear face of the backing sheet 10. The backing sheet 10 carries, near the center at one or both ends, a similarly arranged snap fastener socket 15; and similar sockets 16 are disposed at the corners of the backing sheet 10. Sockets 15, 16 face rearwardly from the rear face of the backing sheet 10.

Near the center of each longitudinal edge, the backing sheet 10 carries a pair of mating, longitudinally-aligned snap fasteners each comprising a socket member 17 and a peg fastener 18. Sockets 17 and peg fasteners 18 are spaced apart from each other, with both of these elements facing forwardly from the forward or front surface of backing sheet 10. They serve as crimping means for crimping the longitudinal edges of the backing sheet 10. Such crimping means form an important feature of the invention, as will further become apparent.

The absorbent filler sheets 11 may consist of flannel, layered gauze, or other cloth, or of disposable sheets of absorbent paper or equivalent absorbent material or, in an emergency or where expense is not a factor, hospital pads of usual type may be cut to size and used as filler sheets. As shown, the filler sheets 11 extend across the entire length and width of backing sheet 10 and are folded at one end to form integral flaps 20 which normally lie immediately adjacent to the front face of the backing sheet 10. In the pad as shown in Figs. 1 and 2, the flaps 20 are preferably located at the bottom edge of the pad, as is the center fastener socket 15.

The porous pad cover 12 preferably consists of porous cloth, nylon or the like, but other porous flexible netting

or other materials are suitable. Along each longitudinal edge the pad cover **12** carries a cloth reinforcing strip **21**, and to the edge of the hem thus reinforced a plurality of equally spaced peg fastener elements **22** are affixed. The pad cover **12** is wider than backing sheet **10** and filler sheets **11**, and is folded over their longitudinal edges, thereby providing additional protection to the patient's skin. The edge portions of the pad cover **12** are turned back against the rear face of backing sheet **10** and are secured in this position by the peg fastener elements **22** which snap into the socket members **14, 16.**

The strap **13** preferably consists of cloth tape or other flexible material. A desirable feature in such a strap is an interwoven rubber traction strip or other traction surface on one side for purposes of chair attachment, as will further become apparent. A peg fastener element **24** is affixed to one face of strap **13** near its center. Strap **13** also carries a pair of slidable adjuster buckles **28**, each buckle carrying a peg fastener **29** which mates with one or the other of the corner sockets **16.** As shown in Figs. 2 and 4, the strap **13** is preferably marked with dots **33** and transverse lines **34** which indicate the proper settings of adjuster buckles **28** along the strap **13** for maintaining strap **13** flat against the face of backing sheet **10.** This juxtaposition of strap **13** and backing sheet **10** is advantageous when the strap **13** is attached for chair adjustment, as will further become apparent. The exact spacing for juxtaposition of strap **13** and backing sheet **10** is an important feature of the pad, as will be shown hereinafter, since the pinching action resulting therefrom when the strap is stretched is employed to maintain in fixed position an overfold of the absorbent filler sheets **11**, thereby sustaining the pad as a unit when the whole or part thereof lies in a vertical plane.

As indicated in Fig. 3, the absorbent pad is adjustable to form a relatively flat back portion and a concave or cupped seat portion. The fasteners **17, 18** coact to form a crimp **25** at each edge of the backing sheet **10**, thereby cupping the side edges **26** of the absorbent filler sheets **11** above the central portion **27** and creating an absorbent basin at the central part of the seat portion of the assembled pad.

When a patent is in the full supine, the side, or the semi-reclining position, the contour arrangement for which is illustrated in Fig. 3, the strap **13** is preferably attached at the corners and center of the lower lateral edge of the rear face of backing sheet **10.** This attachment is achieved by snapping the peg fasteners **29, 24, 29** respectively into the corresponding corner, central, and corner socket fasteners **16, 15, 16** which appear more clearly in Figs. 1 and 2. The strap **13** extends around and over the end edge of the backing sheet **10** and forms two loops which extend forwardly from the front face of the pad cover **12** and are intended to extend around and be supported by the forward aspect of the patient's thighs. The strap **13** coacts with the crimping means **17, 18** to complete the concave contour formation of the assembled pad, since it elevates the corners **31, 31,** as well as the lower lateral edge portion **32** of the pad above the central portion **27.** This coordinated contour or cupping action is highly important and advantageous.

As indicated in Fig. 4, the same adjustable pad may readily be applied to a chair or other support having an upright back (not shown) by disconnecting the end peg fasteners **22, 22** from the corner socket fasteners **16, 16** at the one end of backing sheet **10**, and connecting the buckle pegs **29, 29** (spaced apart as indicated by marker dots **33, 33**) of strap **13** to said corner socket fasteners **16, 16.** The flaps **20** of absorbent filler sheets **11** are then withdrawn from the open end of the envelope formed by backing sheet **10** and pad cover **12** and are folded over the end edge of backing sheet **10** and under strap



**13** so that said flaps lie sandwiched between backing sheet **10** and the connected portion of strap **13.** The free ends of the strap **13** are then wrapped around the back of the chair and are secured together by knotting or other fastening means as shown in Fig. 4. By reason of the tension of strap **13**, the flaps **20** are pinched and held firmly between strap **13** and the end edge of backing sheet **10**, so that all pad components are firmly maintained in their proper relationship, even though part of the pad lies in a vertical plane formed with the back of the chair. The strap **13** may be slid up or down along the back framework of the chair to make any desired adjustment and will remain in place as set without slippage by reason of the resilient interwoven traction strip which is an integral part of the strap. It is apparent, moreover, that the pad may be fully contoured for chair use by attaching another strap **13** as already shown and described in connection with Fig. 3.

Preferably the pad is assembled by placing the porous pad cover **12** face down on a flat surface, with pegs **22** facing upwardly, centering the absorbent filler sheets **11** upon it, forming the fold or flap **20**, placing the backing sheet **10** upon the folded filler sheets **11** and flap **20**, and securing the longitudinal edge fastener elements **14, 16, 22** together as shown in Fig. 2. The strap **13** is attached, if desired, and the pad is reversed top for bottom so that the porous pad cover **12** faces upwardly as in Fig. 1. The pad is then ready for use. It can be used with or without crimping in flat formation on a bed for a reclining patient, and its contour may easily and promptly be adjusted for use in semi-reclining, side, or sitting positions as heretofore described. Or the pad may be used in angled form, with or without contouring in the manner indicated in Fig. 4. Or it may be used as a garment in the manner of a sanitary apron or diaper, employing the setting shown in Fig. 4, strap **13** in this instance being used as a belt carried forwardly around the waist of the patient and tied, instead of as a chair tie as shown.

It will further be appreciated that the absorbent filler sheets **11** may be varied in number and character and may be sterile or non-sterile as required. By reason of the longitudinally disposed rows of fasteners at either side, the pad may be quickly disassembled and washed or sterilized and its elements or replacement elements assembled for repeated use. Moreover, the assembled pad may be positioned from one side of a sickbed by a single attendant, thereby effecting economy of nursing effort and time.

The invention provides means for minimizing skin irritation since the fabric of the pad cover **12** which is interposed between the filler sheets **11** and the patient's skin may be selected from a variety of textile substances to provide the material most suited to the individual patient's case. Further provision against skin laceration or irritation is provided by the extension of the filler sheets **11** to the longitudinal edges of the backing sheet **10** to cover the snap fastener elements **22**, and by the longitudinal overfold of the porous pad cover **12** to form a rounded edge which encompasses the subadjacent edges of the backing sheet **10.**

While I do not wish to be limited to the consequences of a theory, it seems obvious that the initial tendency of a bed pad to conform to the shape of an object of substantial weight that rests upon it is the tendency of any plane surface that is pressed into a matrix more resilient than itself to conform to the shape of the superimposed object; and it is clear that distortion of such a surface out of the normal plane must be accompanied by an uncontrolled series of outwardly radiating crimps or pleats. Conversely, it follows that controlled crimping at the edges of such a surface will similarly govern the configuration of the central portion. The present invention accordingly achieves its contour effects by artificially

including such crimps or pleats at predetermined break points by means hereinbefore described, compelling thereby a specific and useful contour characteristic in a sanitary pad. It will be apparent therefore that while specific crimping means in the form of snap fasteners has been shown in the drawings, the invention comprehends other equivalent crimping means wherein edge portions of the assembled pad may be brought together to shape the pad to the proper contour. This controlled crimping action may be achieved by fluting, or reinforcing, or weakening the backing sheet or absorbent filler sheets along the appropriate lines, preferably in conjunction with fixed fastener means which may be of any preferred type.

While in the specific embodiment of the invention shown in the drawings the adjustable contour pad includes both an absorbent filler member and a porous cover pad, it will be understood that one absorbent member may itself, if of suitable composition, serve as an absorbent agent without any auxiliary absorbent means or cover piece.

It will be appreciated that, although the invention has been described in detail with reference to one specific embodiment thereof, various changes other than those referred to above may be made in the form of the adjustable contour pad without departing from the scope of this invention. Moreover, equivalent elements may be substituted for those specifically illustrated in the drawings, parts may be reversed, and certain features of the invention may be used to advantage independently of the use of other features, all within the scope and spirit of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. An adjustable pad adapted for connection to a patient comprising an envelope including a waterproof backing sheet, a filler in said envelope, means on the front face of said backing sheet for forming crimps near the centers of its side edges, center and corner fastener elements at the center and corners on the rear face of one end of said backing sheet, a flexible leg strap, a pair of buckles slidably adjustable along said leg strap, fasteners carried by each of said buckles mating with said corner fastener elements, and a similar fastener carried by said strap between said buckles mating with said center fastener element, whereby the center and corners of the backing strip are adjustably elevated by said strap when the buckles are secured to said corner fasteners and the corresponding center fasteners of strap and backing are secured together and said strap is looped toward the front and supported over the thighs of the patient.

2. An adjustable pad comprising an envelope closed at the sides and open at one end, crimping means dividing said envelope into a substantially flat back portion and a concave seat portion which includes said open end, a filler sheet of absorbent material in said envelope having an integral flap providing double filler sheet thickness at the open end of the seat portion, fastener means at the corners and center of said seat portion at said open end, and a leg strap connected to the corners and center of said pad with capacity to raise said corners and center, including the double thickness integral flap, when the strap is looped over the legs of the patient.

3. The adjustable pad defined in claim 2, wherein the crimping means are located nearer one end of the pad than the other end.

4. An absorbent pad adapted to be attached to the upright back of a chair, comprising a flexible envelope closed at the sides and open at one end, a flexible absorbent filler sheet in said envelope, said filler sheet having an integral flap at said open end, said flap being of



sufficient length to extend beyond the open end of said envelope over the back of said envelope and means for securing said flap to the back of said end of the envelope.

5. An adjustable pad comprising a flexible waterproof backing sheet, rows of fasteners extending along the side edges of said backing sheet, an absorbent filler sheet adjacent to the front face of said backing sheet, an end flap formed integrally with said filler piece of sufficient length to fold over one end of the backing sheet, and a strap connected to the pad having fastening means adapted to be fastened over said end flap to the backing sheet fasteners at the corners at said end of the backing sheet, thereby compressing said flap against said end of said backing sheet.

6. The adjustable pad defined in claim 5, wherein one surface of said strap carries traction means having capacity, when the pad is attached to a chair, to engage and grip said chair.

7. The adjustable pad defined in claim 6, wherein said strap is made of cloth with rubber strands incorporated into the cloth.

8. An article of manufacture for use in an adjustable pad comprising a waterproof backing sheet of flexible material having a front face and a rear face and side and end edges, a plurality of fasteners spaced along said side edges and facing rearwardly from said rear face, and a pair of sets of mated crimping fastener means, each said pair being disposed near a side edge of said waterproof backing sheet and facing forwardly from said forward face.

9. An article of manufacture for use in an adjustable pad comprising a rectangular sheet of flexible waterproof material, said sheet having front and rear faces, rows of equally-spaced fasteners disposed along the side edges of said sheet and facing rearwardly from the rear face of the sheet, pairs of mating peg and socket fasteners spaced apart from one another near the longitudinal center of each side edge of said sheet, said peg and socket fasteners extending forwardly from the forward face of said sheet, and an end fastener element near the center of one end edge of said sheet, said end fastener element extending rearwardly from the rear face of said sheet.

10. The article of manufacture defined in claim 9, further characterized by the fact that said mating peg and socket fasteners are both slightly removed toward one end from the longitudinal centers of the side edges of said sheet.

11. An adjustable contour pad holder comprising a flexible envelope adapted to retain an absorbent filler therein, said envelope having a pair of mating snap fasteners disposed at longitudinally spaced points on each of its longitudinal edges, each mating pair of said snap fasteners extending from the same surface of said envelope.

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