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(12) **United States Design Patent**
Asikainen et al.

(10) **Patent No.:** **US D953,754 S**
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- (54) **PERSONAL TRAINING MIRROR**
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- (73) Assignee: **Elo Labs, Inc.**, New York, NY (US)
- (**) Term: **15 Years**

D880,593 S * 4/2020 Lee D20/39
 D890,710 S * 7/2020 Bakshi D14/126
 D925,484 S * 7/2021 Easton D14/126
 (Continued)

FOREIGN PATENT DOCUMENTS

EM 008624647-0001 * 7/2021
 RU 00126348 * 7/2021

OTHER PUBLICATIONS

Carbon Trainer [online], [site visited Jan. 26, 2022]. Available from internet, URL: <https://www.carbontrainer.com/order> (Year: 2022).*
 (Continued)

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- (51) **LOC (13) Cl.** **06-07**
- (52) **U.S. Cl.**
USPC **D6/300; D14/126**
- (58) **Field of Classification Search**
USPC D6/300, 301, 302, 303, 304, 307, 308,
D6/309, 310, 311, 312, 313, 314;
D28/64.1-64.7; D14/126, 336, 341, 371,
D14/372, 374, 381, 382, 448, 450;
D19/113, 114; D20/10, 27, 42
CPC A45D 42/00; A45D 42/10; A45D 42/16;
A45D 42/20; A45D 42/24; A47G 1/00;
A47G 1/02; A47G 1/04; A47G 1/0622;
B60J 3/0282
See application file for complete search history.

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(57) **CLAIM**

The ornamental design for a personal training mirror, as shown and described.

DESCRIPTION

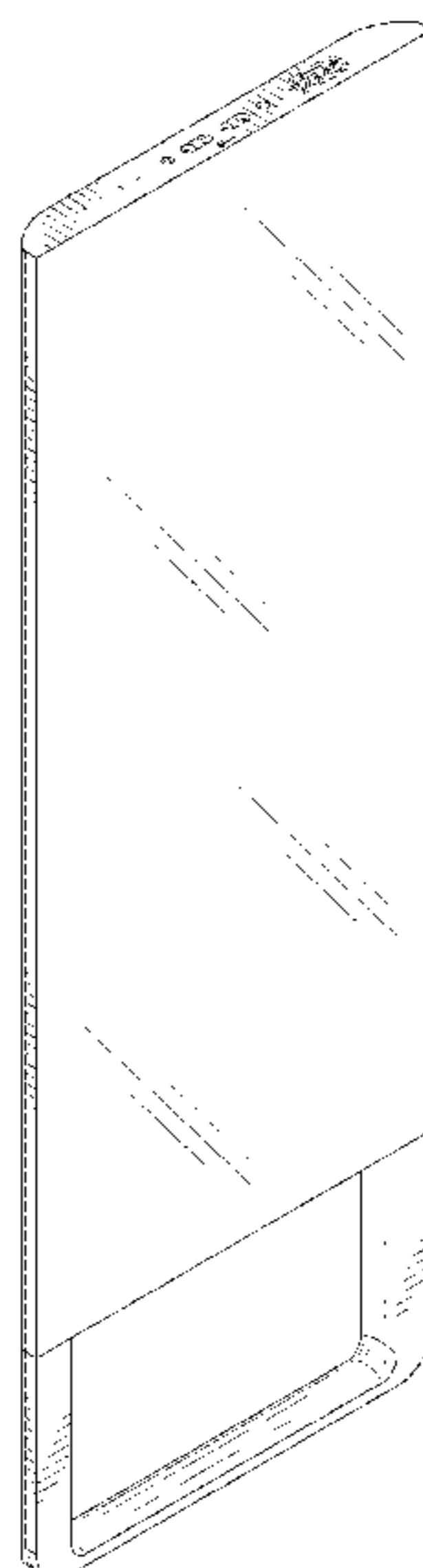
FIG. 1 is a front, top, and left side perspective view of a personal training mirror showing our new design.
 FIG. 2 is a rear, bottom, and right side perspective view thereof.
 FIG. 3 is a top view thereof.
 FIG. 4 is a bottom view thereof.
 FIG. 5 is a side view thereof.
 FIG. 6 is a front view thereof; and,
 FIG. 7 is a rear view thereof.
 Within the drawings, the straight-line surface shading and stippling show the character and contour of the surfaces in the claimed design of the personal training mirror. The broken lines show unclaimed portions of the personal training mirror, and thus form no part of the claimed design.

(56) **References Cited**

U.S. PATENT DOCUMENTS

- D472,223 S * 3/2003 Wilmotte D14/126
- D547,071 S * 7/2007 Mischel, Jr. D6/300
- 7,637,847 B1 12/2009 Hickman
- D661,123 S * 6/2012 Curbbun D6/675.1
- D691,208 S * 10/2013 Gorelick D20/10
- D759,617 S * 6/2016 Soares D14/126
- D789,313 S * 6/2017 Jacobi D14/126
- D801,703 S * 11/2017 Robertson D6/300
- D807,648 S * 1/2018 Gilad D6/300
- D869,412 S * 12/2019 Spencer D14/126

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D927,595 S *	8/2021	Ogden	D20/10
2002/0039952 A1	4/2002	Clem		
2007/0219059 A1	9/2007	Schwartz et al.		
2007/0225118 A1	9/2007	Giomo		
2010/0022351 A1	1/2010	Lanfermann et al.		
2015/0100141 A1	4/2015	Hughes		

OTHER PUBLICATIONS

Carbon Trainer is the New Fitness Mirror Designed for Home Strength Training [online], [site visited Jan. 26, 2022]. Available from internet, URL: <<https://manofmany.com/lifestyle/fitness/carbon-trainer-is-the-new-fitness-mirror-designed-for-home-strength-training>> (Year: 2020).*

Mirror Pro [online], [site visited Jan. 26, 2022]. Available from internet, URL: <https://www.mirror.co/shop/mirror-pro-cw?gclid=Cj0KCQiA_8OPBhDtARIsAKQu0gbPF_10mpXrPaHO2jCsfyA3fBWUHIJqwJe0AauAMn4sJiNHZkJImi8aAglEALw_wcB> (Year: 2022).*

International Search Report and Written Opinion for PCT/US2020/041860, filed Jul. 13, 2020, dated Sep. 28, 2020, 21 pgs.

Van Hooff, Nino, “Performance Assessment and Feedback of Fitness Exercises Using Smartphone Sensors”, Master Thesis, Jul. 2013, 55 pgs.

Runia, Tom et al., “Real-World Repetition Estimation by Div, Grad and Curl”, <http://tomrunia.github.io/projects/repetition/>, 2018, 5 pgs.

Guler, Riza et al., “DensePose: Dense Human Pose Estimation in the Wild”, <http://densepose.org/>, Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, 2018.

Dong, Junting, et al., “Fast and Robust Multi-Person 3D Pose Estimation From Multiple Views”, <https://arxiv.org/pdf/1901.04111.pdf>, Jan. 14, 2019, 10 pgs.

“Weight Lifting”, <https://vcl.iti.gr/weight-lifting/>, Research, Motion Capturing and Analysis, Oct. 24, 2017, 3 pgs.

Omran, Mohamed, et al., “Neural Body Fitting: Unifying Deep Learning and Model-Based Human Pose and Shape Estimation”, <https://paperswithcode.com/paper/neural-body-fitting-unifying-deep-learn2>, Aug. 17, 2018, 13 pgs.

Cho, Youngjun, et al., “Instant Automated Inference of Perceived Mental Stress Through Smartphone PPG and Thermal Imaging”,

<https://arxiv.org/ftp/arxiv/papers/1901/1901.00449.pdf>, Journal of Medical Internet Research/JMIR Mental Health—Special Issue on Computing and Mental Health, 2018, 24 pgs.

Zdziarski, Zbigniew, “Heart Rate Estimation Using Computer Vision—Zbigatron”, <https://zbigatron.com/heart-rate-estimation-using-computer-vision/>, Dec. 12, 2018, 5 pgs.

“Video Magnification”, <http://people.csail.mit.edu/mrub/vidmag/>, Jun. 2015, 4 pgs.

Pilz, Christian S., et al., “Local Group Invariance for Heart Rate Estimation From Face Videos in the Wild”, http://openaccess.thecvf.com/content_cvpr_2018_workshops/papers/w27/Pilz_Local_Group_Invariance_CVPR_2018_paper.pdf, 2018, pp. 1367-1375.

Wang, Chen, et al., “A Comparative Survey of Methods for Remote Heart Rate Detection From Frontal Face Videos”, Frontiers in Bioengineering and Biotechnology, May 1, 2018, vol. 6, Article 33, 16 pgs.

Trivedi, Chintan, “Using Tensorflow Object Detection to Control First-Person Shooter Games”, Towards Data Science, Nov. 25, 2018, 6 pgs.

Jovanov, Goran, “Realtime Face Recognition in the Browser”, <https://medium.com/@gjovanov/realtime-face-recognition-delee3076878>, Jan. 10, 2019, 10 pgs.

Bhoi, Amlaan, “Spatio-Temporal Action Recognition: A Survey”, <https://arxiv.org/pdf/1901.09403.pdf>, Jan. 27, 2019, 15 pgs.

Pham, Huy-Hieu, et al., “Learning to Recognize 3D Human Action From A New Skeleton-Based Representation Using Deep Convolutional Neural Networks”, <https://arxiv.org/pdf/1812.10550.pdf>, IET Research Journals, Dec. 26, 2018, 11 pgs.

Fang, Hao-Shu, et al., “AlphaPose: Real-Time and Accurate Full-Body Multi-Person Pose Estimation & Tracking System”, <https://github.com/MVIG-SJTU/AlphaPose>, Accessed Oct. 15, 2020, 8 pgs.

“Open Source IMU and AHRS Algorithms”, <https://x-io.co.uk/open-source-imu-and-ahrs-algorithms/>, x-io Technologies, Posted Jul. 31, 2012, 2 pgs.

Brownlee, “Deep Learning Models for Human Activity Recognition,” Machine Learning Mastery, Sep. 26, 2018, retrieved from [https://machinelearningmastery.com/deep-learning-models-for-human-act . . .](https://machinelearningmastery.com/deep-learning-models-for-human-act-...) on Jun. 24, 2020, 28 pgs.

Runia et al., “Repetition Estimation,” International Journal of Computer Vision, 2019, vol. 127, pp. 1361-1383.

* cited by examiner

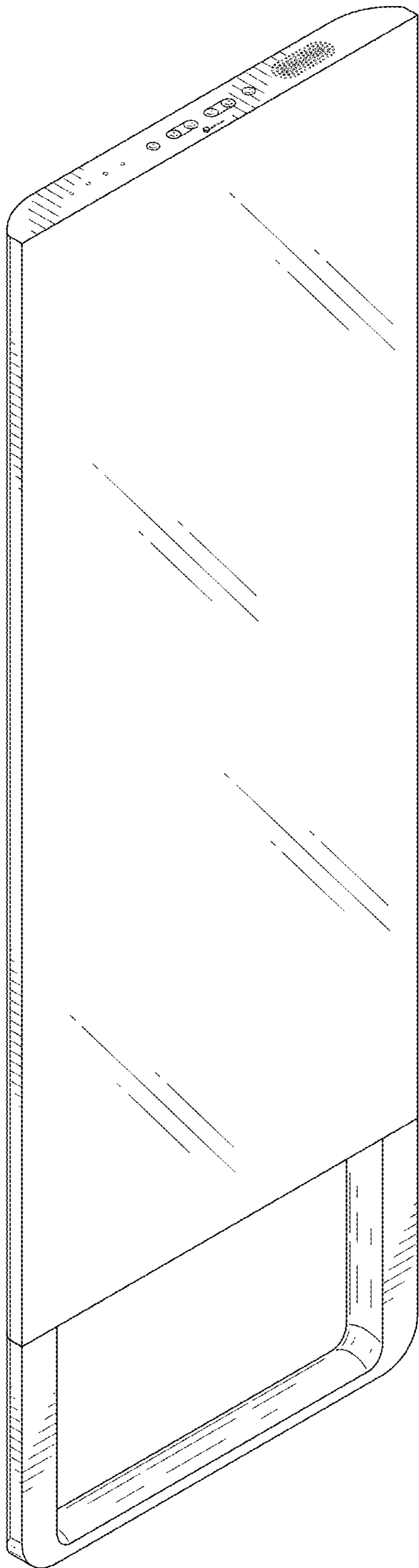


FIG. 1

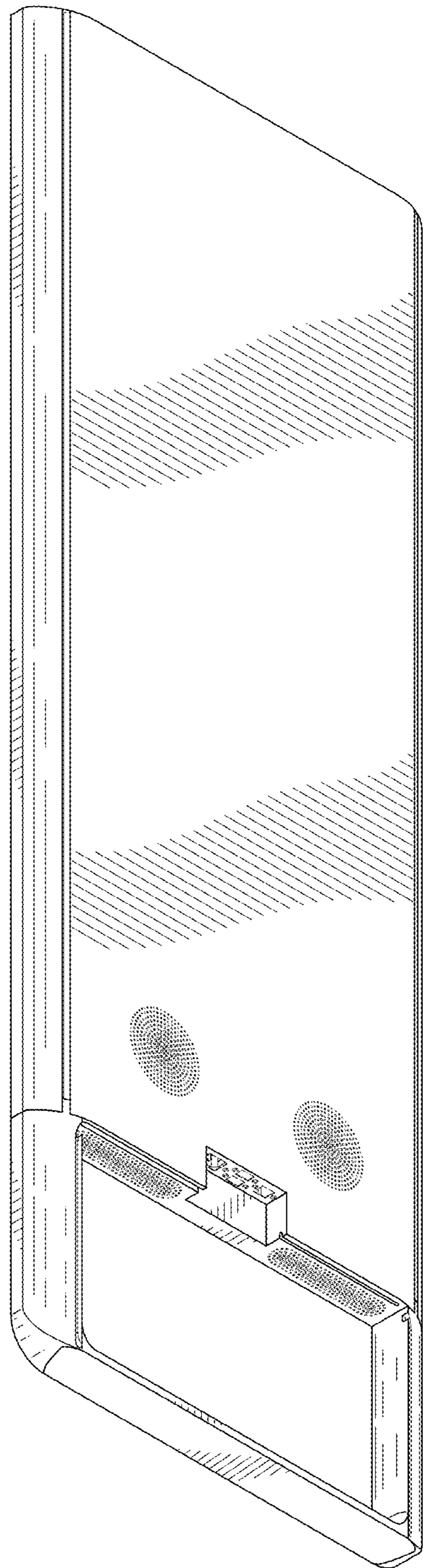


FIG. 2

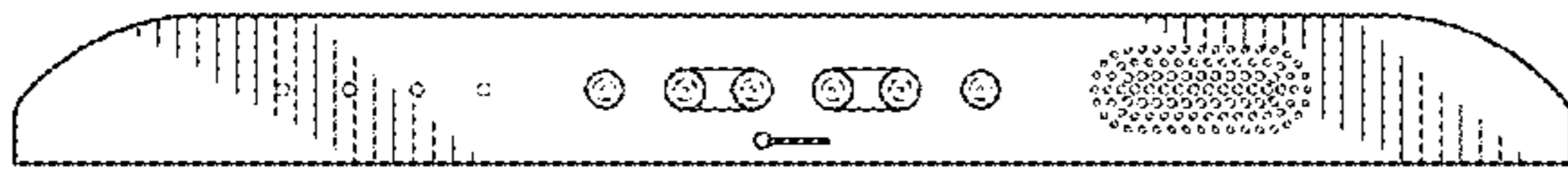


FIG. 3

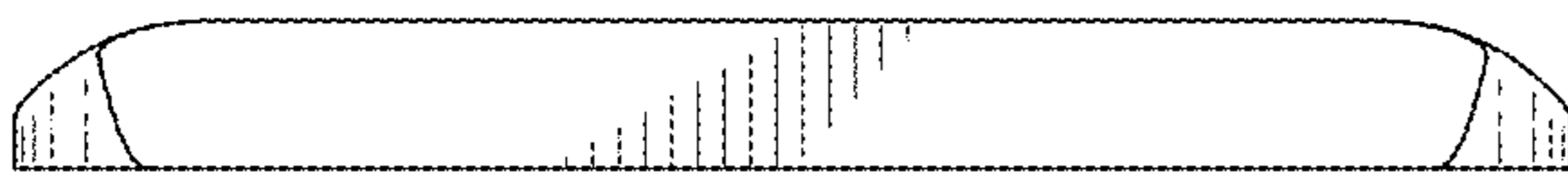


FIG. 4

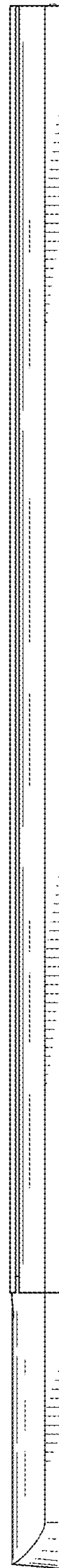


FIG. 5

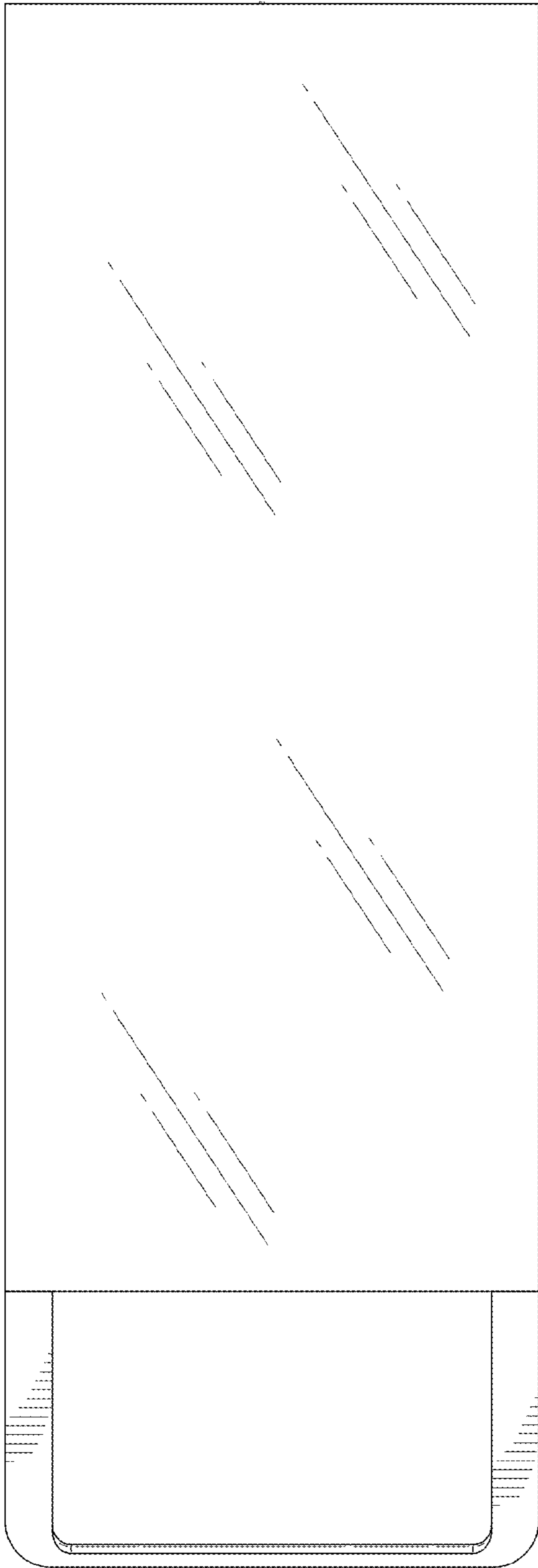


FIG. 6

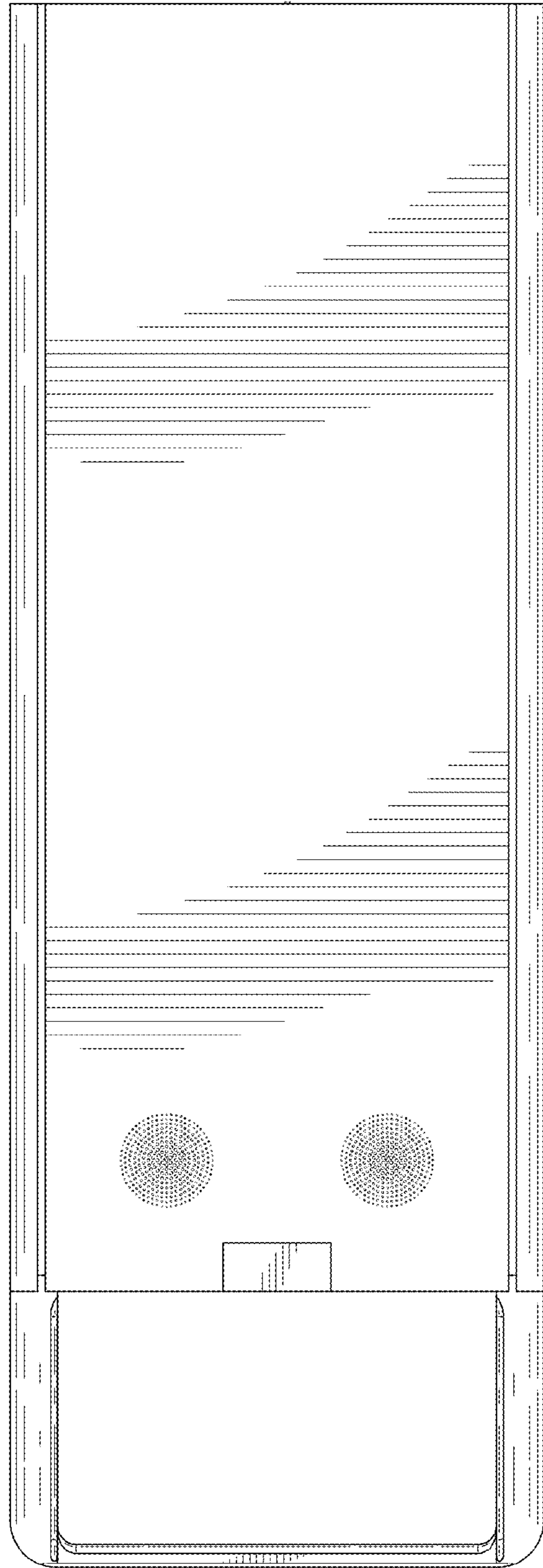


FIG. 7