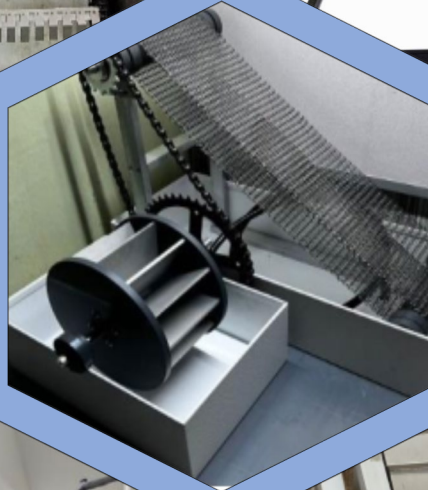


PROTOTYPE DESIGN COLLECTION

SERIES 1



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e-ISBN: 978-967-0033-07-5

First published, 30 September 2022

EDITORS:

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PUBLISHED BY:

Pusat Pengajian Kejuruteraan Mekanikal,
Universiti Teknologi MARA Cawangan Johor,
Kampus Pasir Gudang,
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CHAPTER 9

Design and Fabricate Waste Collector Prototype

Muhammad Faiszam Bin Isnin and Zeno Michael

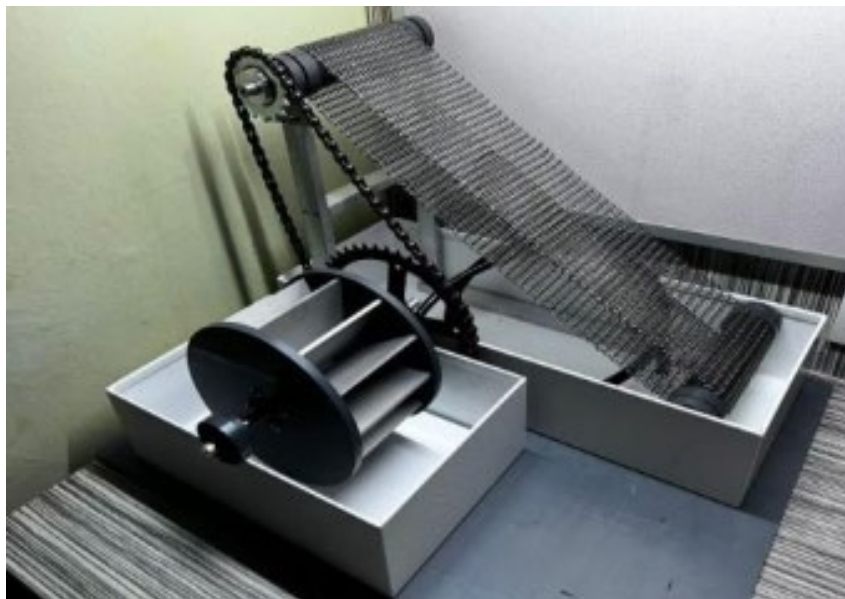
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PROJECT DESCRIPTION

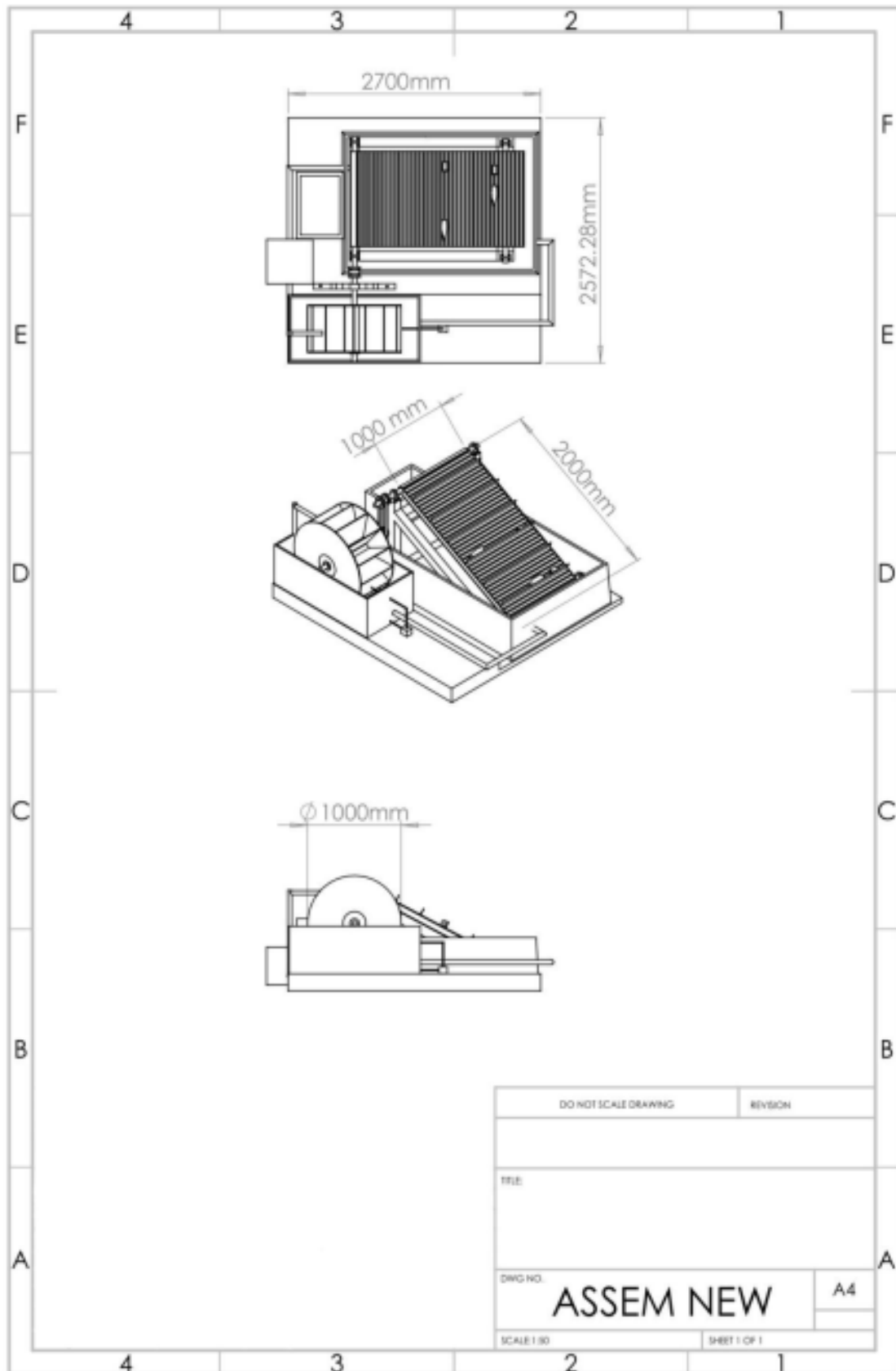
Water pollution affects humans by destroying water and the ecosystems beneath it. Nowadays, people frequently throw trash such as plastics, bottles, papers, tires, etc. Water becomes human's essential daily needs. In this study, I figure out the solution how to overcome the problem by creating a machine that can help humans to clean a river. Next, the machine that I created have improvise the ideas from the previous waste collector that exist. Waste collector can reduce the number of trash in the river by removing it from the river by using a conveyer that comes with this machine. When the cleaning process happens, it can protect a river from pollution. With this waste collector, all these problems can be overcome. This study demonstrates a waste collector that was designed with a wheel and conveyer. The wheel will run automatically due to river water flow. Next, the wheel will connect to a conveyer by using a shaft. These will make the conveyer move and pull out the trash from the water surface to a rubbish bin at the back of the conveyer. Besides that, to ensure this project is running smoothly, structural elements will be used to prevent any accident from happening. These results suggest a waste collector is a machine that can be used to support the ecosystem and can overcome water pollution by reducing the number of trash in the river.

Keywords: *Water pollution, Waste collector, Solid waste, Green Technology*

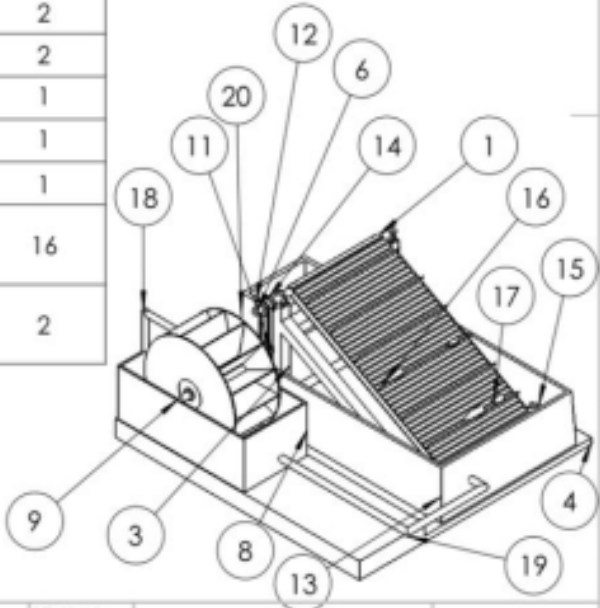
PROTOTYPE



DESIGN PARAMETER



| | 4 | 3 | 2 | 1 |
|---|----------|---|------|---|
| | ITEM NO. | PART NUMBER | QTY. | |
| F | 1 | conveyer belt | 1 | |
| | 2 | wheel turbine | 1 | |
| | 3 | conveyer frame | 1 | |
| | 4 | base | 1 | |
| E | 5 | top shaft holder | 4 | |
| | 6 | top shaft | 1 | |
| | 7 | conveyer wheel | 4 | |
| | 8 | water supply tank | 1 | |
| D | 9 | shaft 1 | 1 | |
| | 10 | shaft connector stand | 1 | |
| | 11 | gear 1 | 1 | |
| | 12 | gear 2 | 1 | |
| C | 13 | conveyer tank | 1 | |
| | 14 | belt | 1 | |
| | 15 | bottom shaft | 1 | |
| | 16 | bottle thrash | 2 | |
| B | 17 | can trash | 2 | |
| | 18 | back pipe | 1 | |
| | 19 | front pipe | 1 | |
| | 20 | bin | 1 | |
| A | 21 | B18.2.3.2M - Formed hex screw, M5 x 0.8 x 8 --8WN | 16 | |
| | 22 | B18.2.3.2M - Formed hex screw, M12 x 1.75 x 16 --16WN | 2 | |



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