



**FLASHPOINT**  
DEVELOPMENT

# **THE BUBBLESHOVEL™**

## **PROJECT RESEARCH & GENESIS PACKAGE**

C O N F I D E N T I A L

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# PRESENTATION OVERVIEW



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- Need, Opportunity, Background, and Problem Statement
- Preliminary Market Investigation
- Preliminary Intellectual Property Investigation
- Competitive Analysis
- Preliminary Ideation
- Conclusions and Recommendations
- Development Project Timeline

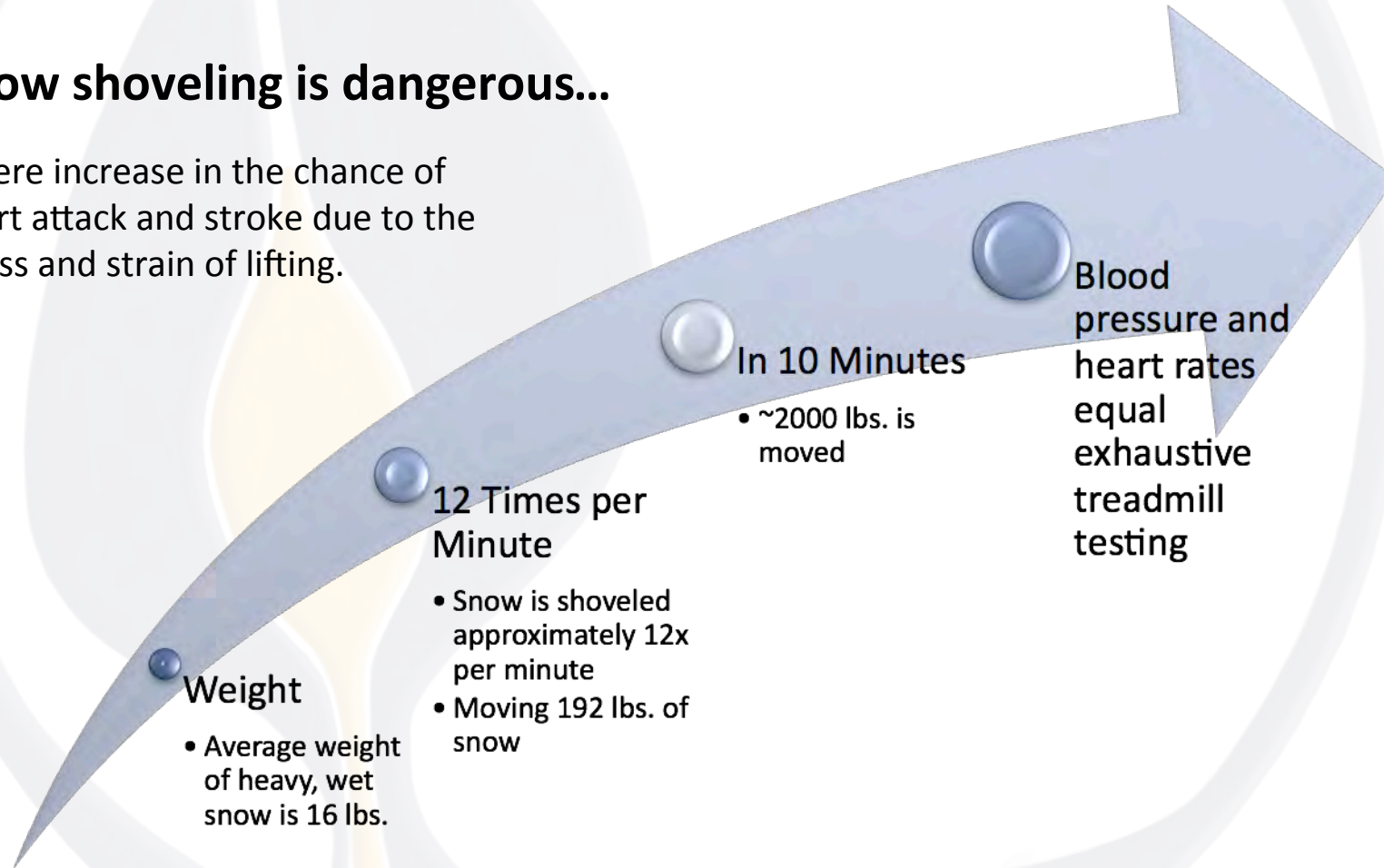
# NEED AND OPPORTUNITY



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## Snow shoveling is dangerous...

Severe increase in the chance of heart attack and stroke due to the stress and strain of lifting.



# WHERE, WHY, HOW?



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## Where does the problem occur?

- In the back, arms, and cardiovascular system.

## Why does the problem occur?

- The user has to lift and dump snow.
- The user is the only source of mechanical energy and leverage.
- The user then is strained because they have to carry the weight.
- The weight is caused by snow and shovel.
- Not shoveling can be dangerous to people walking.

## How does the problem occur?

- If snow is over a certain depth, it becomes difficult to push out of the way. This then requires the user to lift and dump the snow to the side of the cleared area. Snow is heavy, at approximately 16 lbs. per shovel load. The user has to lift this weight, putting pressure on back, arm, and heart muscles.

# PROBLEM STATEMENT



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**There are thousands of shovels on the market so what differentiates one from the other? There are many features and human factor issues to consider when choosing a snow shovel. The heavy lifting required to shovel snow falls takes a toll on the human body, so if there is an alternative, why not use it?**

- *They should try to push the snow instead of lifting it and avoid large shoveling jobs by clearing snow early and often. – American Academy of Orthopedic Surgeons*
- Imagine a snow shovel that requires no lifting, just easy removal and relocation of even deep snow...

# WHAT IS THE BUBBLESHOVEL™?



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- A snow shovel that:
  - Reduces muscle effort and strain
  - Reduces resulting cardiovascular activity
  - Increases per load removal rate without power
  - Removes and transports snow without lifting
  - Is easy to produce and can be readily sold in retail outlets
  - Is manufactured from common materials



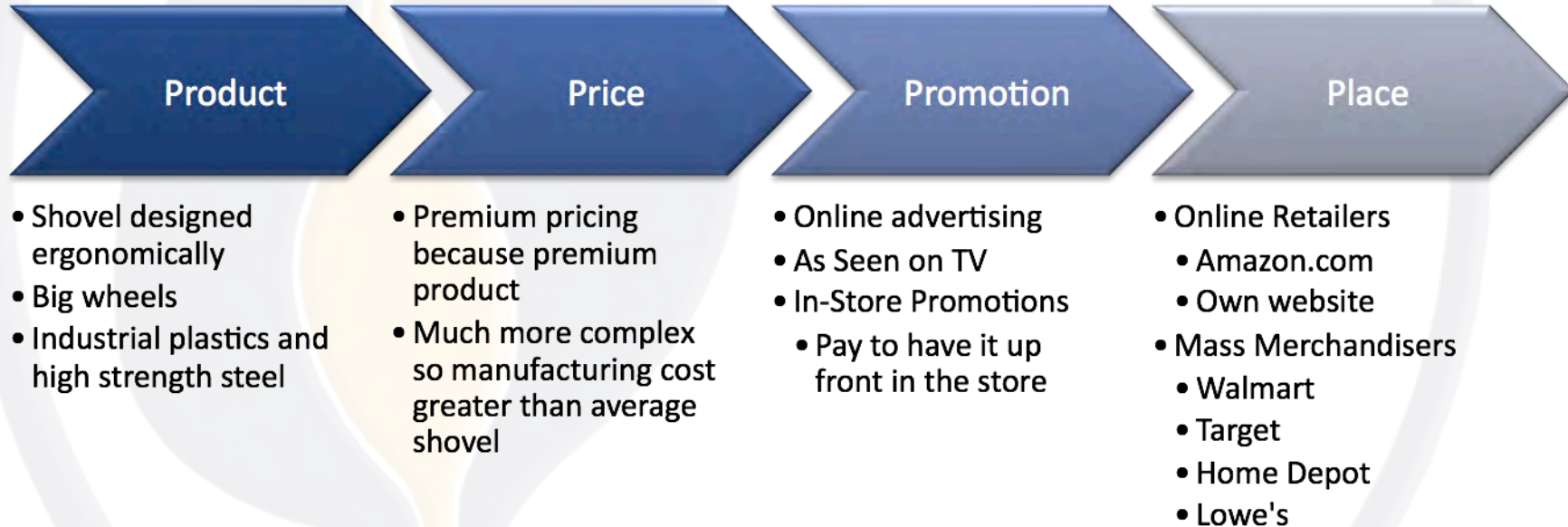
# MARKET INSIGHT

This section gives you an overview of the market and competitive landscape for your product.

# THE MARKETING MIX



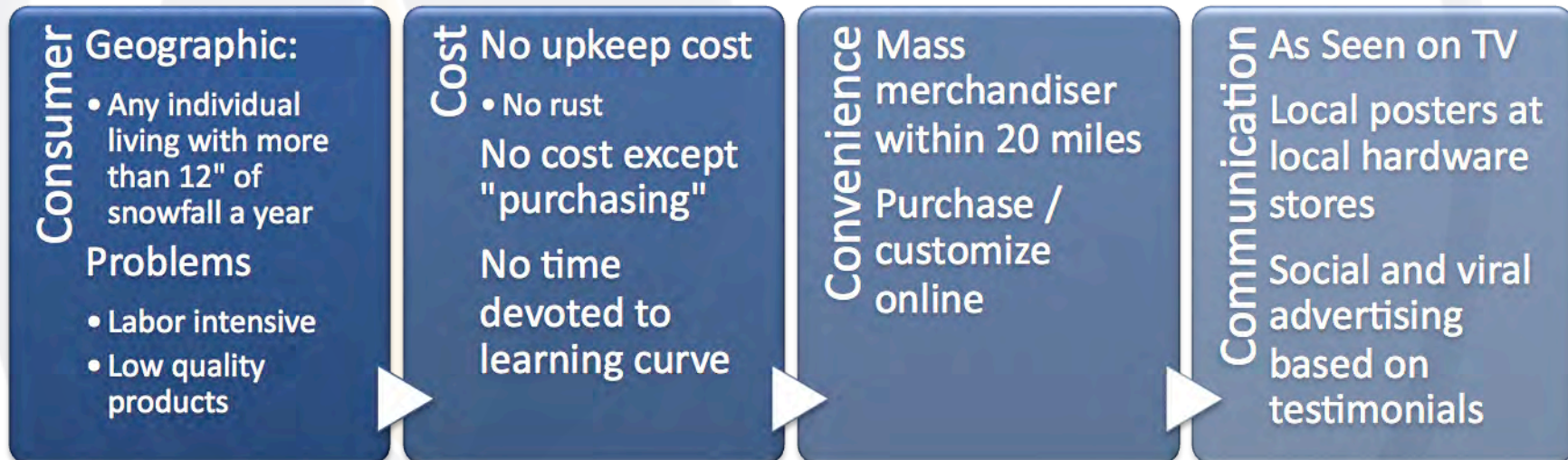
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# MARKETING BASICS: THE 4 C'S



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**Successful commercialization must consider and link each of these...**

# MARKET POTENTIAL


















- \$60+ Million dollar market size
- Hundreds of thousands of shovels sold per year
- Primary outlet is big box retail
- Other channels include catalogs, online sales such as Amazon.com, and T.V. shopping
- Our market research indicates consumers are willing to pay more for a unique solution (up to \$20 more than typical shovels)

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# EVERYDAY SNOW SHOVELS



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 <p><a href="#">Suncast SC3250 18-Inch Snow Shovel/Pusher Combo with Ergonomic Handle</a> \$22.04 new Amazon.com</p>	 <p><a href="#">Wovel Folding Wheeled Snow Shovel</a> \$119.99 new NorthernTool.com</p>	 <p><a href="#">Garant Corp YPM18EAKDVS 18\" Poly Snow Shovel w/Ergo Handle</a> \$106 new</p>	 <p><a href="#">Ames True Temper Incorporated 1640000 Aluminum Snow Pusher Shovel</a> \$25 new</p>	 <p><a href="#">Melnor 21BSVKD Poly Snow Shovel</a> \$87 new</p>
 <p><a href="#">Suncast SN2100 Graphite Snow Shovel Poly Snow Shovel</a> ★★★★★ 4 reviews \$16 new</p>	 <p><a href="#">Ames True Temper 1628300GR Poly Snow Shovel without Wear Strip</a> \$16 new</p>	 <p><a href="#">Garant Nordic Car Snow Shovel (NP091KD)</a> \$9.99 new Ace Hardware</p>	 <p><a href="#">Ames True Temper Incorporated 1641200 Aluminum Snow Shovel with</a> \$25 new</p>	 <p><a href="#">Garant NPM18KDVS Poly Snow Shovel with VersaGrip Handle</a> \$18 new</p>
 <p><a href="#">Ames True Temper 1624900 Poly Snow Shovel with Wear Strip</a> \$18 new</p>	 <p><a href="#">Suncast Corp. SPH2490 Shock Absorber Snow Pusher D-Handle Snow Pusher</a> \$25 new</p>	 <p><a href="#">Garant YSP24L 24\" Steel Snow Pusher</a> \$21 new</p>	 <p><a href="#">Suncast SGP1100 13-Inch Snow Shovel Multi-Purpose Scoop</a> \$19.33 new Amazon.com</p>	 <p><a href="#">Ames Company 1640700AC Snow Shovel 18\" Steel</a> \$16 new</p>


















Retail prices typically range from \$10 - \$20.00

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# SNOW PUSHERS



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 <p><a href="#">Vertex SnoBlade SnoDozer Snow Shovel w/ Wheels</a> \$59.00 new Amazon.com</p>	 <p><a href="#">Vertex Snow Shovel on Wheels, TKR00</a> \$55 new</p>	 <p><a href="#">Torrey Home Snow Shovel on Wheels #TKR00 - Hand Tools</a> \$55 new</p>	 <p><a href="#">Yo-Ho PolarTuff SnoBlade Snow Blade Shovel w/ Wheels</a> \$79.95 new Amazon.com</p>	 <p><a href="#">Torrey Home Quick Snow Shovel on Wheels #TK700 - Hand Tools</a> \$40 new</p>	 <p><a href="#">Quick Snow Shovel on Wheels (black) (11"H x 26"W x 6"D)</a> \$39.99 new Amazon.com</p>
 <p><a href="#">Suncast SN2100 Graphite Snow Shovel, Poly Snow Shovel</a> ★★★★☆ 4 reviews \$16 new</p>	 <p><a href="#">Ames True Temper Incorporated 1640000 Aluminum Snow Pusher Shovel</a> \$25 new</p>	 <p><a href="#">Garant NPM18KDVS Poly Snow Shovel with VersaGrip Handle</a> \$18 new</p>	 <p><a href="#">SnowScoop Snow Shovel</a> \$85 new</p>	 <p><a href="#">Vertex SnoBlade SnoDozer Snow Shovel w/ Wheels</a> \$59.00 new Balkowitsch Enterprises</p>	<p>Photo Coming Soon</p> <p><a href="#">Gravel Wheels (for Wheeled Snow Shovel)</a> \$27.95 new Sporty's Tool Shop</p>
 <p><a href="#">Ames Company 1640700AC Snow Shovel 18" Steel</a> \$16 new</p>	 <p><a href="#">Ames True Temper Incorporated 1641200 Aluminum Snow Shovel</a> \$25 new</p>	 <p><a href="#">Wovet Folding Wheeled Snow Shovel</a> \$119.99 new NorthernTool.com</p>	 <p><a href="#">Black Diamond 102178 BD Transfer 3 Snow Shovel</a> ★★★★☆ 18 reviews \$34 new</p>	 <p><a href="#">Garant Nordic Car Snow Shovel (NP091KD)</a> \$9.99 new Ace Hardware</p>	 <p><a href="#">Ames True Temper 1628300GR Poly Snow Shovel without Wear Strip</a> \$16 new</p>

Retail prices typically range from \$20 - \$50.00

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# DIRECT COMPETITOR: THE WOVEL™



- The biomechanical model shows a huge reduction, by approximately 85%, of risk to injury of lower back with the Wovel, in the test subjects.
- Even when moving heavy loads the Wovel virtually eliminates lower back stress, making it comparable to simply walking
- Company research indicates that “the greatly improved efficiency of the Wovel can also reduce overall body exertion by as much as 80% versus shoveling”.
- However, the Wovel cannot be used as a regular shovel, is expensive, cumbersome, and is difficult to store. It also is not conducive to mass market retail.

**SNOWWOVEL** The Snow Shovel on a Wheel

**Snow Wolf** Let the big dog roll

Shopping Cart  
Items:  
Subtotal: 0.

Home Wovel Products Wovel Tour Using Your Wovel News & Reviews

Buy Direct  
Where to Buy  
Email Us  
Order Status  
Customer Support

**Wovel News**  
Research Confirms Breakthrough In Snow Removal  
Wovel Goes Global As "The World's Safest" ... [more](#)

**Doctor Approved**  
Reduces the risks of back or heart-related injuries... [more](#)

**Awards & Reviews**  
Popular Mechanics  
Discovery Channel  
BusinessWeek  
TIME

Clears Away Snow 3 Times Faster Than Shoveling... with Half the Effort and Less Risk of Injury

The new Folding Frame Sno Wovel™ and Sno Wolf™ are the only snow removal devices, performing equal to or better than a snow blower, that are recognized by **Co-op America and National Green Pages™** for its positive, pollution-free environmental standards and zero carbon footprint in usage. Univ. of Mass. independent study confirms the wheeled snow shovel clears snow with a fraction of the effort and safer on the back: "comparable to simply walking."

**NEW: Time Magazine Best Invention for 2006**

No fuel, fumes and deafening noise to harm the environment or the operator.  
**THE NEW FOLDING FRAME SNO WOVEL™**

Download Movie (Flash 15mb zip)  
Download Movie (Flash 4mb zip)

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**Retail price exceeds \$100.00.**

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# INTELLECTUAL PROPERTY

This section gives an overview of patents that are similar in design and structure as your product is. The primary reasoning behind an intellectual property search is to investigate potential competitors and conflicting intellectual property.

# BASIC SNOW SHOVEL



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**United States Design Patent** (10) Patent No.: **US D600,983 S**  
**Jones** (45) Date of Patent: **\*\* Sep. 29, 2009**

(54) **SNOW SHOVEL** 7,140,654 B1\* 11/2006 Ghent ..... 294/60  
 7,216,907 B1\* 5/2007 Mussman et al. .... 294/49  
 \* cited by examiner

(76) Inventor: **James R. Jones**, 5321 Chestnut Apt. 1,  
 Philadelphia, PA (US) 19139  
*Primary Examiner*—Holly H Baynham  
*Assistant Examiner*—Sheryl Lane

(\*\*) Term: **14 Years**

(21) Appl. No.: **29/312,642**

(22) Filed: **Nov. 5, 2008**

(51) **LOC (9) CL.** ..... **08-01**  
 (52) **U.S. CL.** ..... **D8/10**  
 (58) **Field of Classification Search** ..... D8/10;  
 294/54 S, 51, 53 S, 55; 37/278  
 See application file for complete search history.

(56) **References Cited**

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2,315,743 A *	4/1943	Sieg	37/277
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4,199,181 A	4/1980	Mason	
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(57) **CLAIM**

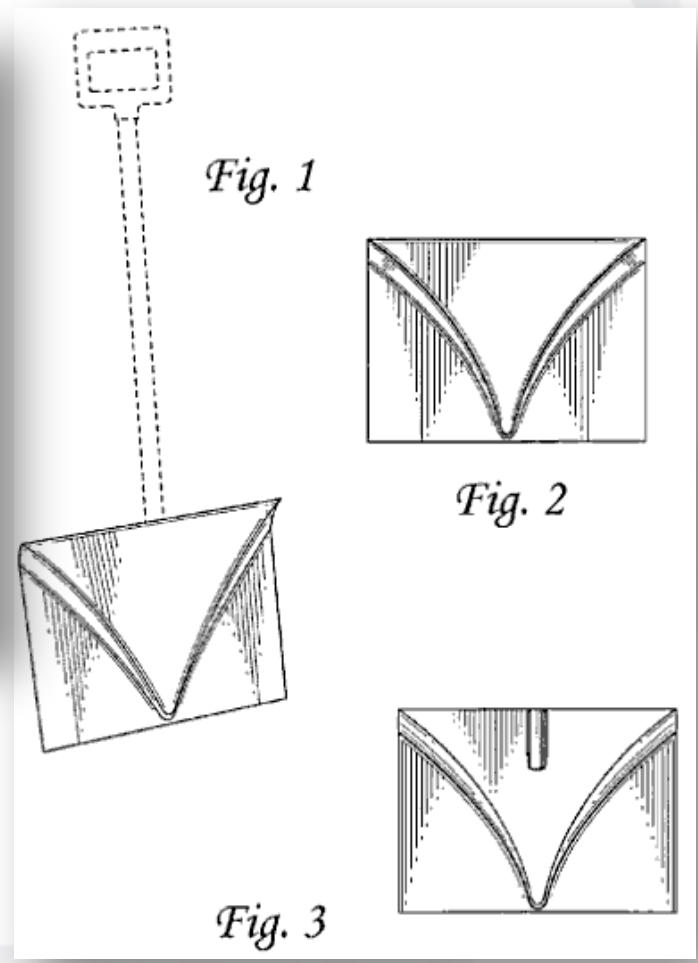
The ornamental design for a snow shovel, as shown and described.

**DESCRIPTION**

FIG. 1 is an environmental view of a snow shovel showing my new design.  
 FIG. 2 is a front elevational view thereof;  
 FIG. 3 is a rear elevational view thereof;  
 FIG. 4 is a right side elevational thereof;  
 FIG. 5 is a left side elevational view thereof;  
 FIG. 6 is a top plan view thereof; and,  
 FIG. 7 is a bottom plan view thereof.

The indicia or broken lines shown on the figures are for illustrative purposes only and are hereby disclaimed as forming no part of Applicant's claimed invention.

**1 Claim, 2 Drawing Sheets**

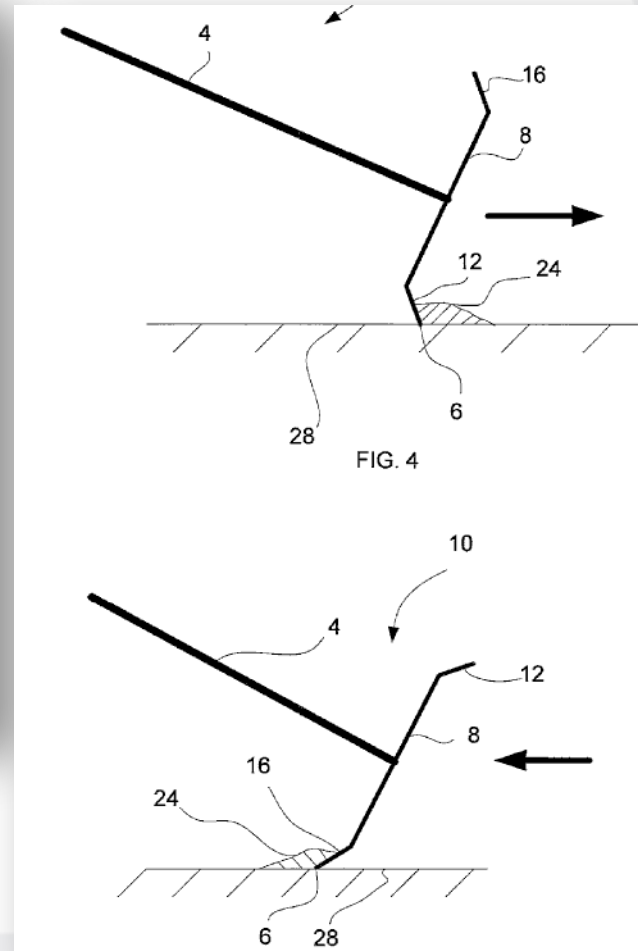


# PUSHER SNOW REMOVAL TOOL



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<b>United States Patent</b>		(10) <b>Patent No.:</b> <b>US 7,762,597 B2</b>
<b>Marlin</b>		(45) <b>Date of Patent:</b> <b>Jul. 27, 2010</b>
<hr/>		
(54) <b>SNOW REMOVAL TOOL</b>	2,637,261 A * 5/1953 Wale .....	56/400/06
	3,218,738 A * 11/1965 Bowerman .....	37/268
(75) <b>Inventor:</b> <b>Carl Marlin</b> , 2104 E. 12th St., Cheyenne, WY (US) 82001	3,727,964 A 4/1973 Nordvik .....	
	4,865,373 A 9/1989 Hudson .....	
	4,901,801 A * 2/1990 Popivalo .....	172/375
(73) <b>Assignee:</b> <b>Carl Marlin</b> , Cheyenne, WY (US)	5,142,855 A * 9/1992 Guidarelli .....	56/400/16
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(*) <b>Notice:</b> Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.	5,791,707 A 8/1998 Szakurski .....	
	5,845,949 A 12/1998 Vosbikian .....	
	6,268,558 B1 7/2001 Kubota .....	
(21) <b>Appl. No.:</b> <b>12/131,285</b>	* cited by examiner	
(22) <b>Filed:</b> <b>Jun. 2, 2008</b>	<i>Primary Examiner</i> —Paul T Chin	
(65) <b>Prior Publication Data</b>	(74) <i>Attorney, Agent, or Firm</i> —Marsh Fischmann & Breyfogle LLP	
US 2009/0051180 A1 Feb. 26, 2009	<b>ABSTRACT</b>	
<b>Related U.S. Application Data</b>	A manual snow removal tool used for the pushing and pulling of snow. The configuration of the tool allows the user to move snow by pushing the snow using a pushing blade or by pulling the snow using a pulling blade depending on the orientation of the snow removal tool. The snow removal tool may also incorporate fulcrum skids to allow the tool to remove snow more easily from rough surfaces. The fulcrum skids allow the user to raise and lower the scraping edge of the snow plow over the surface being scraped. The fulcrum skids move more easily across rough surfaces than the scraping edge of a regular plow or shovel. The snow removal tool may also have non-abrasive ends attached to the pushing and pulling blades so that it may be used on sensitive surfaces such as the painted finish on an automobile.	
(60) Provisional application No. 60/941,440, filed on Jun. 1, 2007.		
(51) <b>Int. Cl.</b> <i>E01H 5/02</i> (2006.01)		
(52) <b>U.S. Cl.</b> .....	294/54.5	
(58) <b>Field of Classification Search</b> .....	294/54.4, 294/49, 54.5, 57; 37/283, 284, 285, 434; D8/10; 254/25, 131; 56/400.01, 400.05, 56/400.06, 400.16	
See application file for complete search history.		
(56) <b>References Cited</b>		
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1,202,791 A * 10/1916 Brownstein .....	37/267	
		<b>20 Claims, 6 Drawing Sheets</b>



# PUSHER WITH CROSSBAR HANDLE



CONFIDENTIAL

(12) **United States Design Patent** (10) **Patent No.:** **US D586,192 S**  
**Chesness** (45) **Date of Patent:** **\*\* Feb. 10, 2009**

(54) **SHOVEL WITH CROSSBAR HANDLE**

(76) **Inventor:** **Curtis J. Chesness**, 981 140<sup>th</sup> La. NW.,  
 Andover, MN (US) 55304

(\*) **Term:** **14 Years**

(21) **Appl. No.:** **29/302,506**

(22) **Filed:** **Jan. 17, 2008**

(51) **LOC (9) Cl.** ..... **08-01**

(52) **U.S. Cl.** ..... **D8/10**

(58) **Field of Classification Search** ..... **D8/10**  
 See application file for complete search history.

(56) **References Cited**

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D405,665	S *	2/1999	Whitehead et al.	.....	D8/10
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*Primary Examiner*—Holly H Baynham  
*Assistant Examiner*—Sheryl Lane

(74) *Attorney, Agent, or Firm*—Devan V. Padmanabhan;  
 Dorsey & Whitney LLP

(57) **CLAIM**

I claim the ornamental design for a **shovel** with a crossbar handle, as shown and described.

**DESCRIPTION**

FIG. 1 is a front perspective view of a **shovel** with crossbar handle of a first embodiment.

FIG. 2 is a rear perspective view of the first embodiment.

FIG. 3 is a front view of the first embodiment.

FIG. 4 is a rear view of the first embodiment.

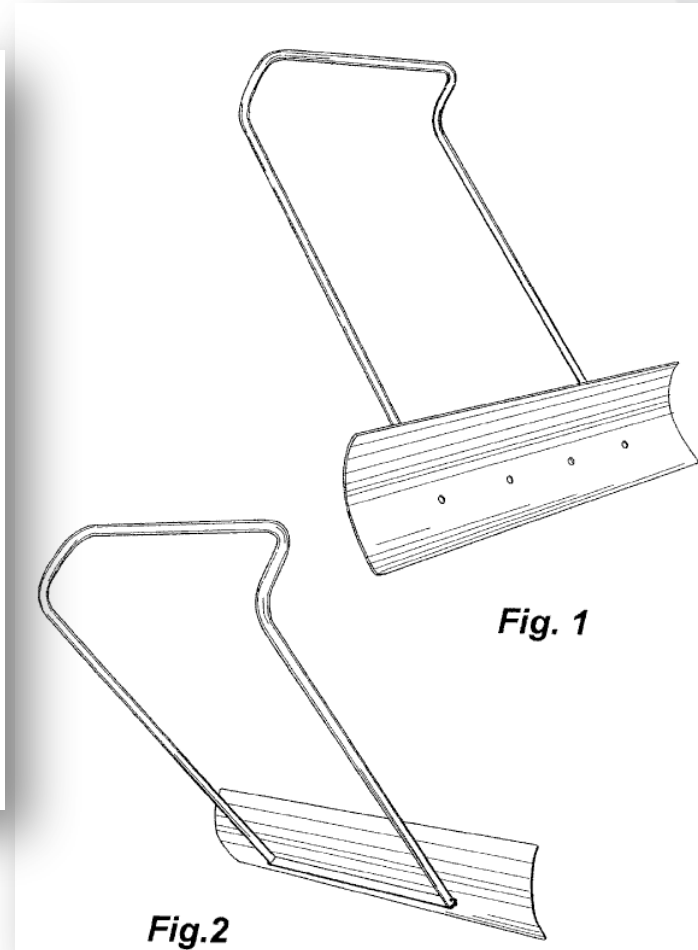
FIG. 5 is a left side view of the first embodiment.

FIG. 6 is a right side view of the first embodiment.

FIG. 7 is a top view of the first embodiment; and,

FIG. 8 is a bottom view of the first embodiment.

**1 Claim, 3 Drawing Sheets**

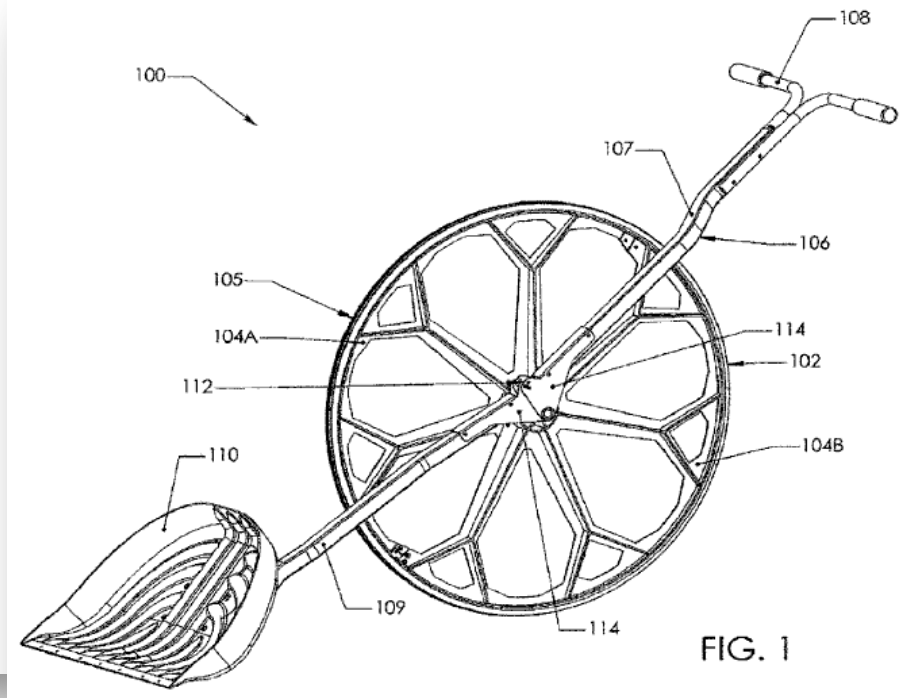


# WHEELED SHOVEL WITH HINGE APPARATUS (WHOVEL PATENT)



CONFIDENTIAL

<p>(12) <b>United States Patent</b> Noonan et al.</p>	<p>(10) <b>Patent No.:</b> US 7,631,443 B2 (45) <b>Date of Patent:</b> Dec. 15, 2009</p>
<p>(54) <b>WHEELED SHOVEL WITH HINGE APPARATUS</b></p>	<p>2,441,449 A 5/1948 Shaw</p>
<p>(75) <b>Inventors:</b> Mark Noonan, New Canaan, CT (US); Stephen C. Fog, New Canaan, CT (US)</p>	<p>(Continued)</p>
<p>(73) <b>Assignee:</b> Snow Solutions LLC, New Canaan, CT (US)</p>	<p>FOREIGN PATENT DOCUMENTS</p>
<p>(* ) <b>Notice:</b> Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 189 days.</p>	<p>CA 2501109 9/2005</p>
<p>(21) <b>Appl. No.:</b> 11/955,753</p>	<p>(Continued)</p>
<p>(22) <b>Filed:</b> Dec. 13, 2007</p>	<p>OTHER PUBLICATIONS</p>
<p>(65) <b>Prior Publication Data</b> US 2009/0139115 A1 Jun. 4, 2009</p>	<p>U.S. design patent U.S. Appl. No. 29/279,588, filed May 3, 2007, Noonan et al. for Wheeled Shovel.</p>
<p><b>Related U.S. Application Data</b></p>	<p>(Continued)</p>
<p>(60) Provisional application No. 60/991,218, filed on Nov. 29, 2007.</p>	<p><i>Primary Examiner</i>—Robert E Pezzuto (74) <i>Attorney, Agent, or Firm</i>—Harness, Dickey &amp; Pierce, P.L.C.</p>
<p>(51) <b>Int. Cl.</b> <i>E01H 5/02</i> (2006.01)</p>	<p>(57) <b>ABSTRACT</b></p>
<p>(52) <b>U.S. Cl.</b> ..... 37/265; 37/285</p>	<p>Various exemplary embodiments are provided of hinge apparatus, which may be used, for example, to hingedly connect upper and lower frame members of a device or tool. In one embodiment of a hinge apparatus, first and second linking members each include a base portion, sidewalls, and flange portions. The flange portions define sets of openings configured to receive a portion of a first connector, for selectively adjusting the angular orientation of the upper frame member relative to the lower frame member in an open, ready-for-use configuration. The linking members include connector openings configured to receive a portion of a second connector. When the first connector is not engaged with any set of openings, the upper frame member is pivotably movable relative to the lower frame member about the second connector to a closed, collapsed configuration in which the upper frame member is alongside the lower frame member.</p>
<p>(58) <b>Field of Classification Search</b> ..... 37/265, 37/284, 285, 264, 278, 273; 172/354, 365, 172/358, 371-380; 294/54.4, 54.8, 57 See application file for complete search history.</p>	<p>11 Claims, 28 Drawing Sheets</p>
<p>(56) <b>References Cited</b> U.S. PATENT DOCUMENTS</p>	
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# SHOCK ABSORBING SHOVEL



CONFIDENTIAL

(12) **United States Patent**  
**Rosine et al.**

(10) **Patent No.:** US 7,581,771 B2  
(45) **Date of Patent:** Sep. 1, 2009

(54) **SHOCK ABSORBING SHOVEL ASSEMBLY**

(75) **Inventors:** Lyle A. Rosine, Oswego, IL (US);  
Torrence Anderson, Batavia, IL (US)

(73) **Assignee:** Suncast Corporation, Batavia, IL (US)

(\* ) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 407 days.

(21) **Appl. No.:** 11/443,534

(22) **Filed:** May 31, 2006

(65) **Prior Publication Data**

US 2007/0126250 A1 Jun. 7, 2007

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 11/293,068, filed on Dec. 2, 2005, now Pat. No. 7,118,145.

(51) **Int. Cl.**  
*A01B 1/02* (2006.01)  
*E01H 5/02* (2006.01)

(52) **U.S. Cl.** ..... 294/54.5; 294/56; 294/57

(58) **Field of Classification Search** ..... 294/49,  
294/54.5, 56, 57, 59  
See application file for complete search history.

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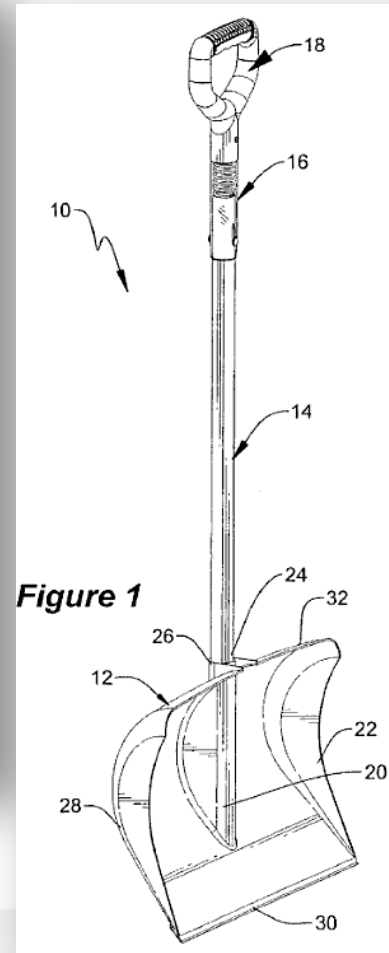
\* cited by examiner

*Primary Examiner*—Dean J Kramer  
(74) *Attorney, Agent, or Firm*—McHale & Slavin, P.A.

(57) **ABSTRACT**

The present invention provides a lightweight shovel with a large scoop type blade, a plastic coated metal handle and a compact shock absorbing cartridge located between the distal end of the metal handle and a D-shaped handgrip so as to not interfere with the operation of the shovel.

**19 Claims, 7 Drawing Sheets**



**Figure 1**

# COLLAPSIBLE SHOVEL



CONFIDENTIAL

(12) **United States Patent**  
Walker et al.

(10) **Patent No.:** US 7,571,945 B2  
(45) **Date of Patent:** Aug. 11, 2009

(54) **COLLAPSIBLE SHOVEL**

(75) **Inventors:** Ben Walker, Draper, UT (US); David Narajowski, Park City, UT (US); Thomas Laakso, Park City, UT (US); David Mellon, Park City, UT (US); Chad John Whittaker, Springville, UT (US)

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(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(51) **Int. Cl.**  
A01B 1/22 (2006.01)  
B25G 1/01 (2006.01)

(52) **U.S. Cl.** 294/51; 294/54.5  
(58) **Field of Classification Search** 294/51, 294/54.5, 57  
See application file for complete search history.

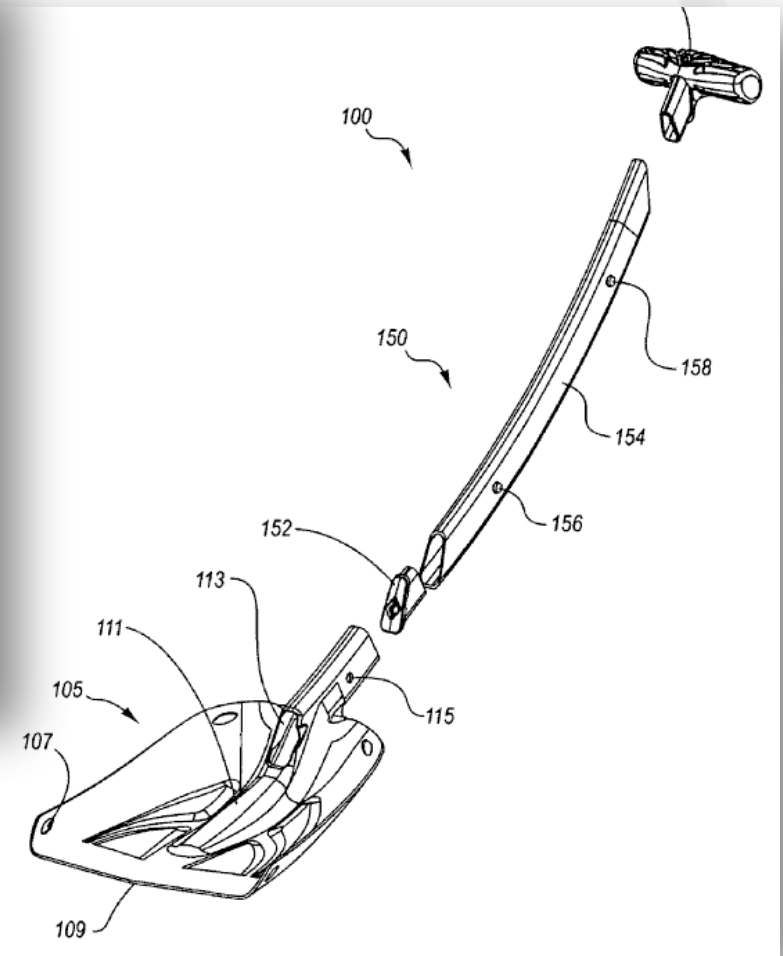
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(57) **ABSTRACT**  
A portable snow shovel that includes a unique collapsible mechanism. One embodiment of the shovel includes both an expanded and collapsed state. The shovel includes a blade member and an elongated shaft member. The elongated shaft member is slidably engaged to the blade member through a recess that extends through the blade member. The elongated shaft member is able to translate with respect to the blade member between the extended and collapsed states. The collapsed state relates to a configuration in which the elongated shaft member is extended through the recess and over the blade member a particular amount. The extended state relates to a configuration in which the elongated shaft member is extended through the recess and away from the blade member a particular amount.

**14 Claims, 3 Drawing Sheets**



# URL SEARCH



The following URL's are available for registration:

- [bubbleshovel.com](http://bubbleshovel.com)
- [bubble.shovel.com](http://bubble.shovel.com)
- [bubbleshovel.net](http://bubbleshovel.net)
- [bubbleshovel.biz](http://bubbleshovel.biz)

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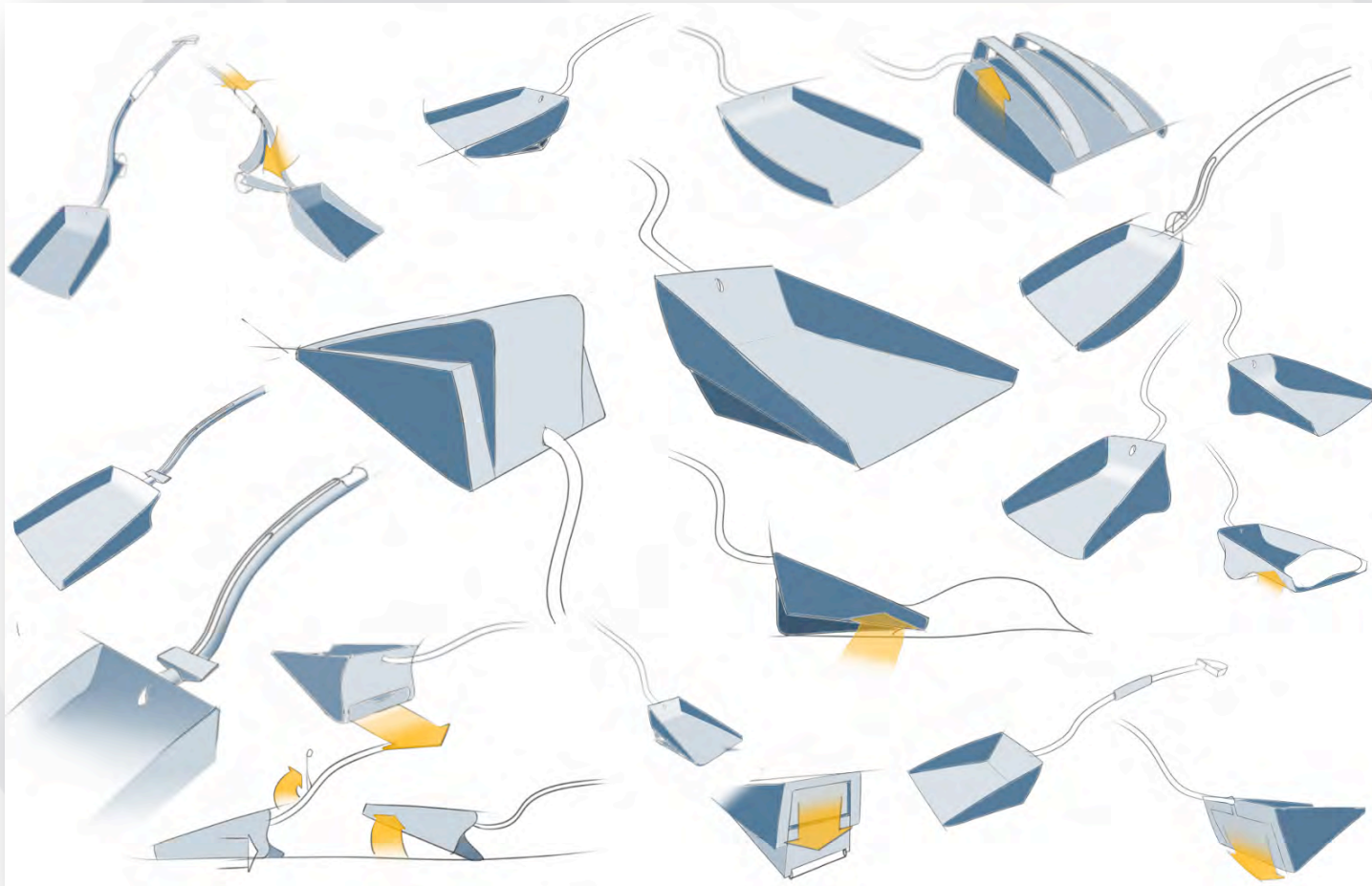
# PRELIMINARY IDEATIONS

This section gives you a sample of preliminary ideations of your product. The goal is to show the possible variety of form factor, design and aesthetic appeal.

# CONCEPT IDEATION IA



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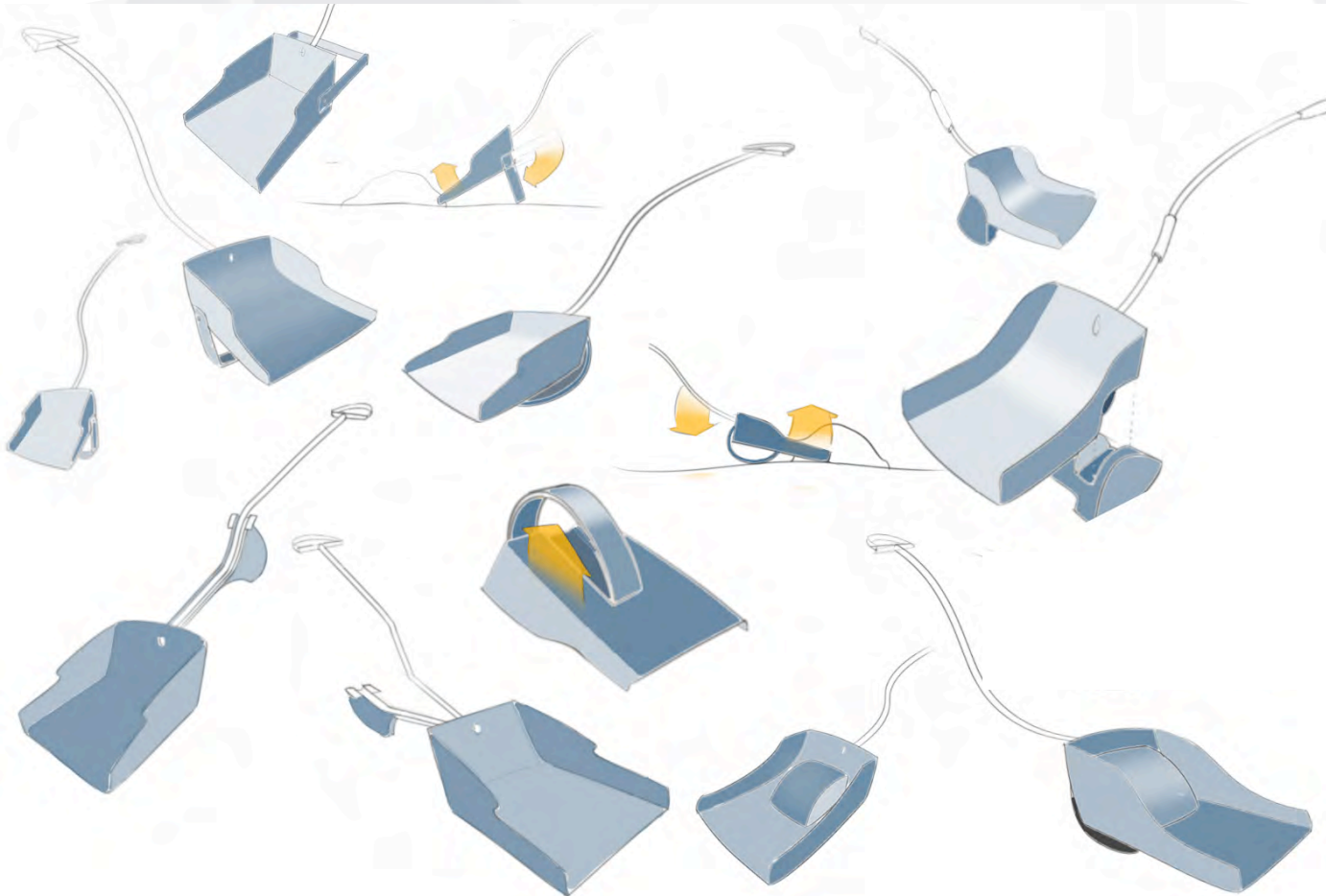
**Ideations focused on a fixed ground fulcrum - allowing easy articulation of the shovel head.**

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# CONCEPT IDEATION IB



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**Ideations focused on a deployable ground fulcrum - allowing easy articulation of the shovel head.**

# CONCLUSIONS AND RECOMMENDATIONS



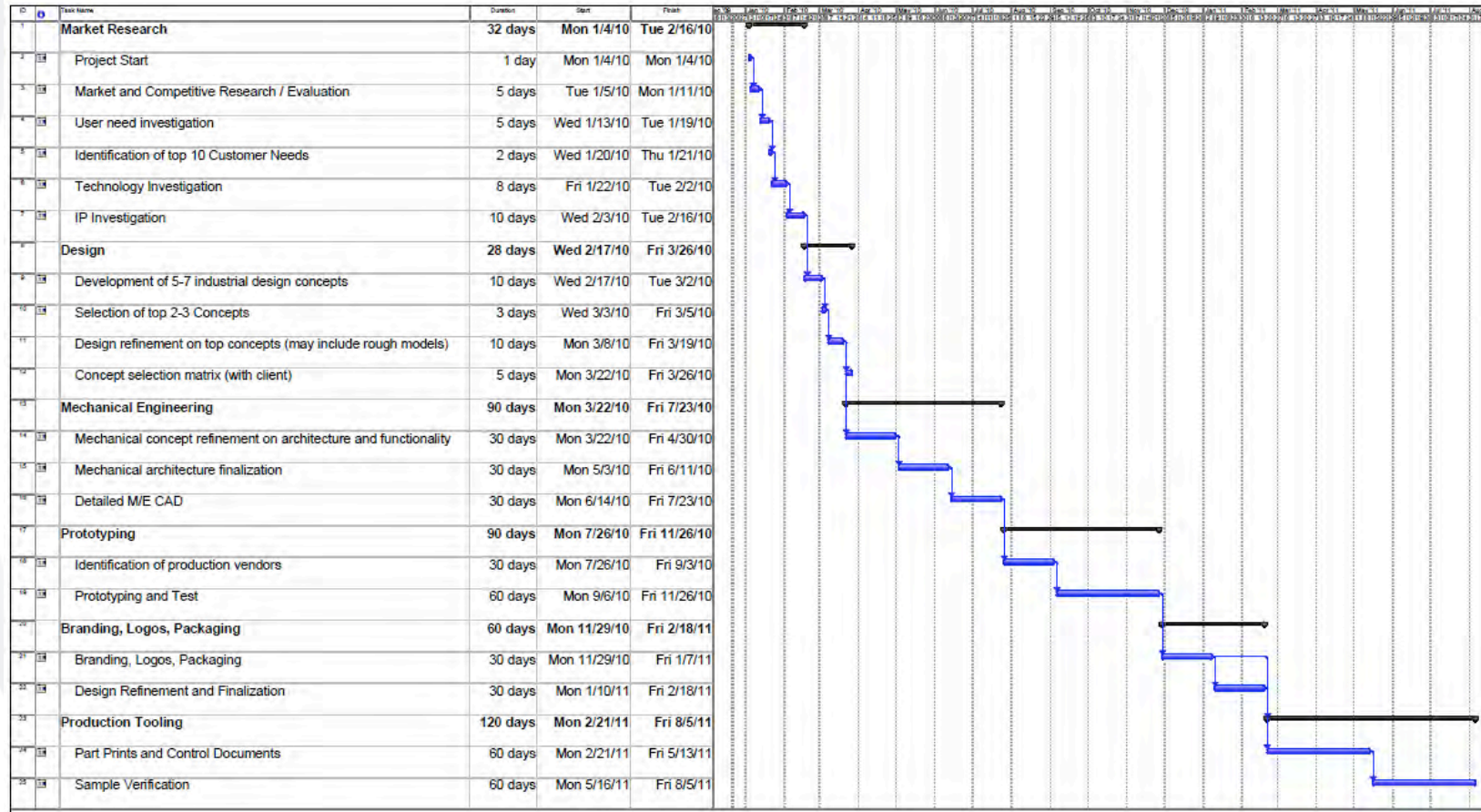
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- A snow shovel is a commodity but there is always room for a product improvement that works
- No marketed shovel or IP exhibits the functionality of the proposed BubbleShovel
- Recommendation 1: Continue ideation to develop a cost effective solution
- Recommendation 2: File Provisional Patent
- Recommendation 3: Demonstrate and validate functionality with rough prototype
- Recommendation 4: Gather data from potential customers regarding prototype

# DEVELOPMENT PROJECT TIMELINE



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**Gantt Chart notes estimated development duration from concept through a production-ready design.**