

The  
United  
States  
of  
America

The Commissioner of Patents  
and Trademarks

*Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

Therefore, this

United States Patent

*Grants to the person or persons having title to this patent the right to exclude others from making, using or selling the invention throughout the United States of America for the term of seventeen years from the date of this patent, subject to the payment of maintenance fees as provided by law.*

*Bence Lehman*

Commissioner of Patents and Trademarks

*Jandra J. Morton*  
Attest





US005310327A

# United States Patent [19] Phillips

[11] Patent Number: **5,310,327**  
[45] Date of Patent: **May 10, 1994**

[54] **WORKPIECE DEFLECTOR SHIELD FOR AN INJECTION MOLDING APPARATUS**

[76] Inventor: **Reginald Phillips, 3633 W. Grenshaw St., Chicago, Ill. 60624**

[21] Appl. No.: **38,819**

[22] Filed: **Mar. 29, 1993**

[51] Int. Cl.<sup>5</sup> ..... **B29C 45/84**

[52] U.S. Cl. .... **425/151; 264/334; 425/556**

[58] Field of Search ..... **425/151, 556; 264/334**

[56] **References Cited**  
**U.S. PATENT DOCUMENTS**

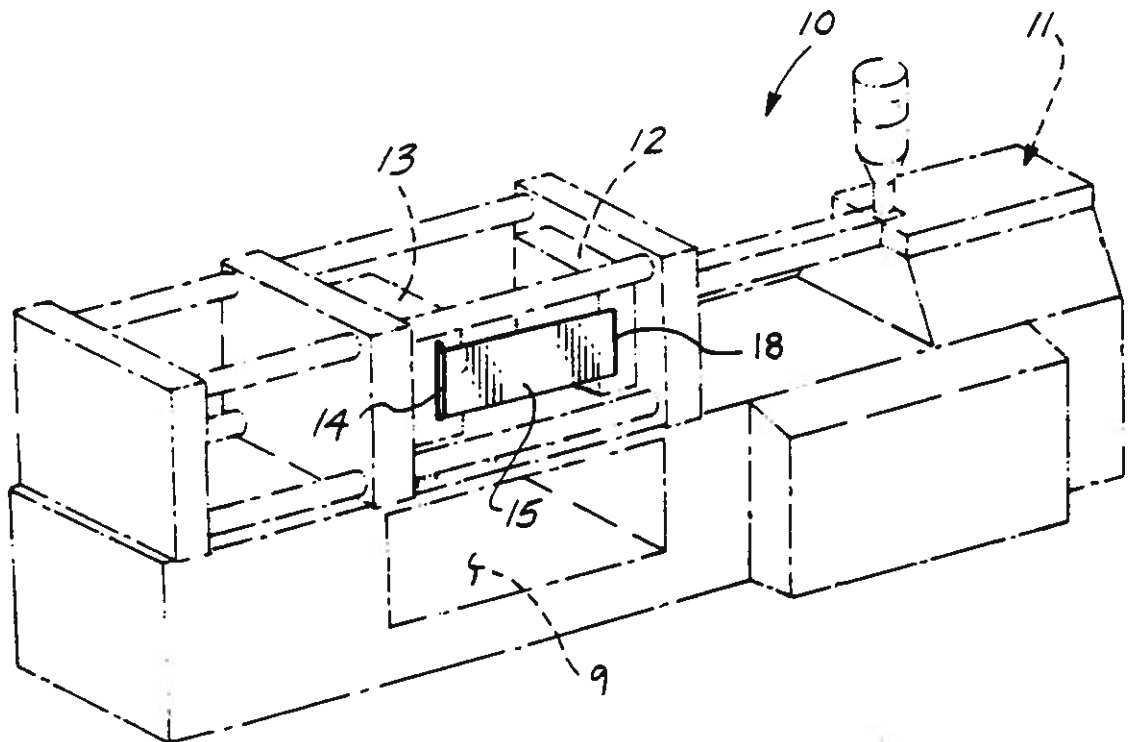
4,911,630 3/1990 Uehara ..... 425/151

*Primary Examiner*—Tim Heitbrink  
*Attorney, Agent, or Firm*—Leon Gilden

[57] **ABSTRACT**

A workpiece deflector shield includes a flexible web arranged for extension and retraction relative to separable mold halves that are arranged in operative relationship relative to one another from a first engaged position to a second spaced relationship, wherein in the spaced relationship, the flexible shield structure provides for deflection of a workpiece ejected from the separated mold members.

**4 Claims, 4 Drawing Sheets**



ice fees  
and six  
er upon  
of the  
of the  
fore the  
re as of



# PART DEFLECTOR SHIELDS

ELIMINATES CONTAMINATION, INCREASES PRODUCTIVITY

Our Part Deflector Shields greatly reduce the amount of waste that is generated when parts fall onto the floor and become contaminated with dirt, oil etc. Shields are offered in two (2) styles; Standard Shield with low profile mounting brackets and Portable Quick Shield with strong ceramic mounting magnets.

## FEATURES INCLUDE

- Clear view of the mold through tougher, flexible 8 mil. vinyl.
- Retracts with torsion springs.
- Low profile mounting prevents interference with the water lines.
- Double sealed bearings for smooth rotation and longer life.
- Anodized aluminum bracket and handle for outstanding impact and strength.
- Protects front and rear while viewing mold operation.
- Replace shields easily yourself.
- Quick release mechanism allows easy access to the mold and removal of the shield.
- Vinyl sheeting has good insulation properties.
- Heat resistance up to 300° F.

**MORE SIZES**

**THE BETTER SHIELDS!**

Stronger, longer lasting vinyl 8 mils. thick

Standard Shield uses 1/4" Dia. hole to slip over cap head screw.

Standard Shield includes mounting clips and screws.

**TWO STYLES**

Durable anodized aluminum bracket and handle

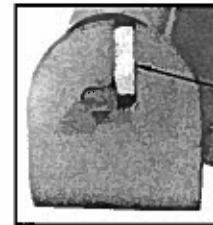
To remove Standard Shield from mold quickly and easily, slide bracket off mounting clips.

*You asked, so we made it simple...*



*Strong ceramic magnets for quick attachment!*

Torsion springs inside dowel retracts the shield.



Removable plastic slat for quick shield replacement.

## PORTABLE QUICK SHIELD WITH MOUNTING MAGNETS

PART DEFLECTOR "QUICK" SHIELD				SHIELD REPLACEMENT	
PART NUMBER	HEIGHT	LENGTH	PRICE EACH	PART NUMBER	PRICE EACH
PDQ06	6"	25"	\$61.00	QSV06	\$10.00
PDQ08	8"	25"	\$68.00	QSV08	\$10.00
PDQ10	10"	25"	\$77.50	QSV10	\$10.50
PDQ12	12"	25"	\$87.50	QSV12	\$11.00
PDQ14	14"	25"	\$96.50	QSV14	\$11.00
PDQ16	16"	25"	\$106.00	QSV16	\$11.00
PDQ18	18"	25"	\$115.00	QSV18	\$11.50
PDQ20	20"	25"	\$116.50	QSV20	\$11.50
PDQ24	24"	25"	\$125.00	QSV24	\$16.50
PDQ28	28"	25"	\$130.00	QSV28	\$20.00
PDQ32	32"	25"	\$138.00	QSV32	\$23.50
PDQ36	36"	25"	\$145.00	QSV36	\$23.50

## STANDARD SHIELD WITH LOW PROFILE MOUNTING CLIPS

PART DEFLECTOR SHIELD				SHIELD REPLACEMENT	
PART NUMBER	HEIGHT	LENGTH	PRICE EACH	PART NUMBER	PRICE EACH
PDS06	6"	25"	\$51.00	PDSV06	\$7.00
PDS08	8"	25"	\$56.00	PDSV08	\$7.00
PDS10	10"	25"	\$65.00	PDSV10	\$7.25
PDS12	12"	25"	\$72.00	PDSV12	\$7.50
PDS14	14"	25"	\$79.00	PDSV14	\$7.50
PDS16	16"	25"	\$88.00	PDSV16	\$7.50
PDS18	18"	25"	\$95.00	PDSV18	\$8.00
PDS20	20"	25"	\$96.00	PDSV20	\$8.00
PDS24	24"	25"	\$102.00	PDSV24	\$10.00
PDS28	28"	25"	\$108.00	PDSV28	\$13.00
PDS32	32"	25"	\$115.00	PDSV32	\$17.00
PDS36	36"	25"	\$121.00	PDSV36	\$17.00



**PLASTIC PROCESS EQUIPMENT, INC.**

www.ppe.com • e-mail: sales@ppe.com

**PPE WEST** 3615 Walnut Avenue, Chino, California 91710, U.S.A.  
909-627-8511 • 800-258-8877 • Fax: 909-627-8101

**PPE SOUTH** 11218 Challenger Avenue, Odessa, Florida 33556, U.S.A.  
727-834-8888 • 800-282-6783 • Fax: 727-834-8873

8303 CORPORATE PARK DRIVE, MACEDONIA (Cleveland), OHIO 44056, U.S.A.

Toll Free: USA, Canada & Mexico

216-367-7000 • Toll Free: 800-321-0562 • Fax: 216-367-7022 • Order Fax: 800-223-8305

**1-800-362-0706**