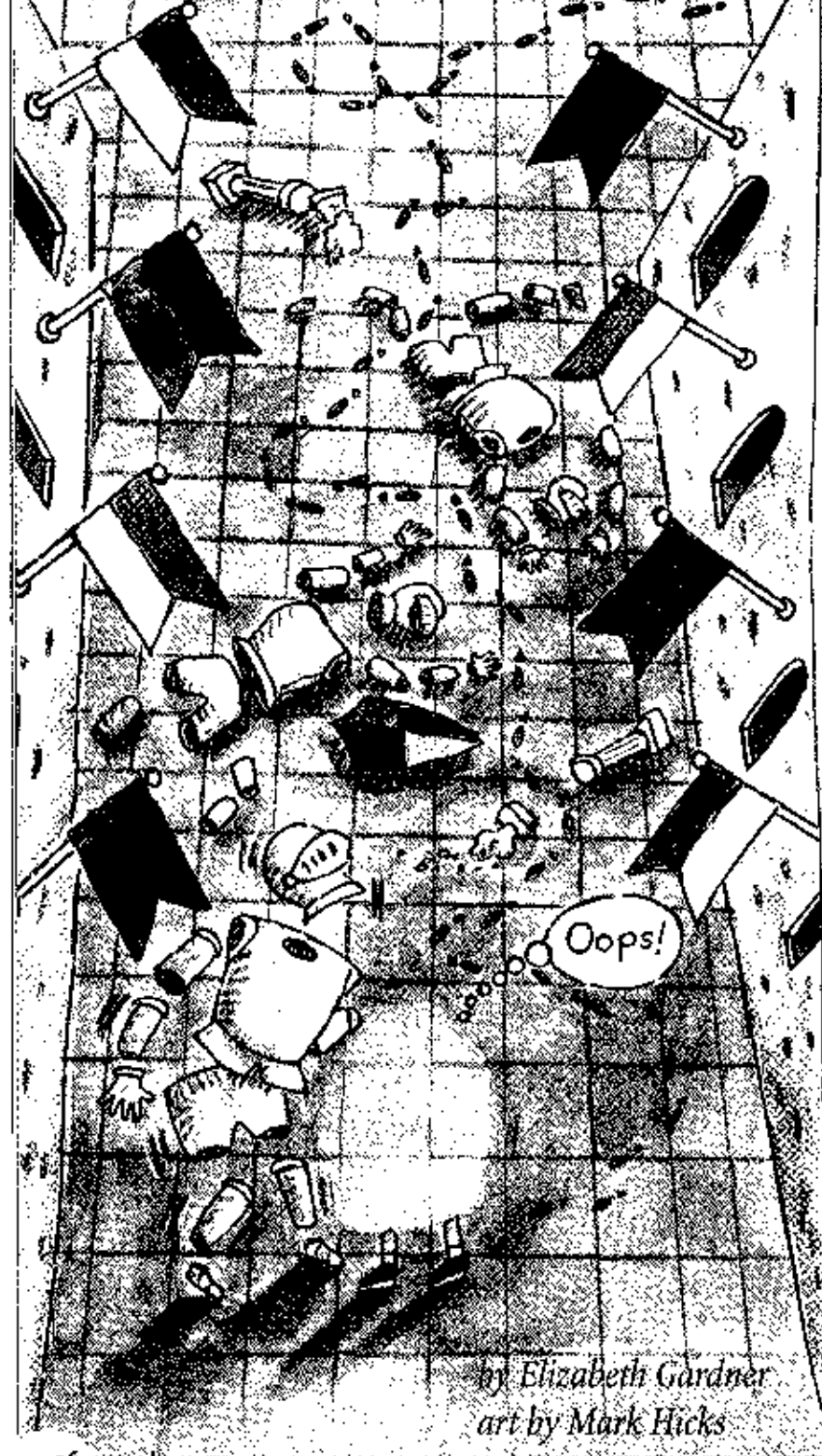


Where's My Invisibility Cloak?



by Elizabeth Gardner
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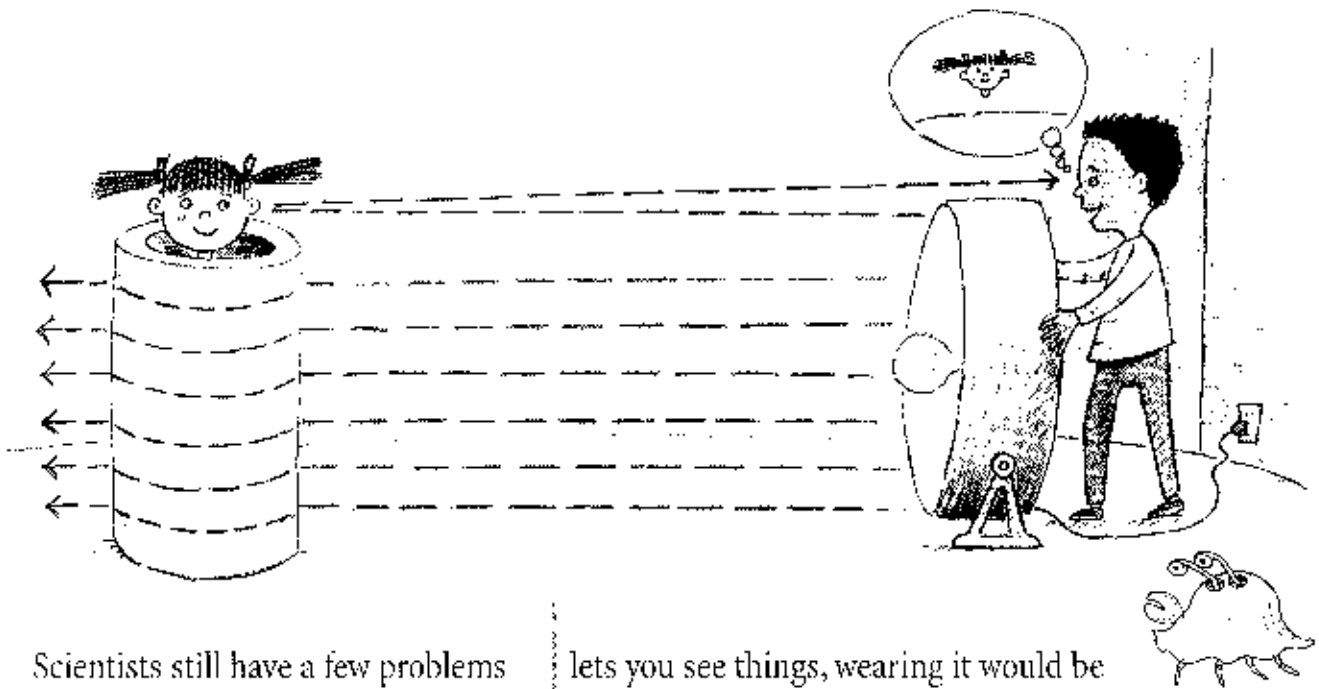
Wouldn't it be great to have an invisibility cloak, just like Harry Potter's?

Maybe someday you can!

Scientists in North Carolina and California have taken the first step. They've made special materials that can shield an object in certain colors of light. The material works by bending the light in ways that light doesn't normally go.

Scientists have discovered that they can control the way light bends—and even make it flow around solid objects—by using a special shield covered in a pattern of tiny metal rods and loops that act like miniature antennas. The tiny antennas grab the light and pass it around the inside of the material and out the other side. Looking at the cloak, you see what's behind it instead.

To work, the rods and loops have to be much smaller than the wavelength of the light—too small to see without a powerful microscope. The pattern's size also “tunes” it to one wavelength, or color, of light. So the material might be invisible in red light but visible in blue.

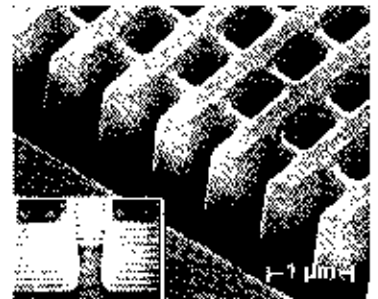


Scientists still have a few problems to work out before our cloaks are ready. First, they'll need to figure out how to make material that can grab and bend all the colors of visible light at once. And all the shields they've made so far have been stiff, like tin cans. For a real invisibility cloak, we'll want material as flexible as a piece of cloth.

Finally, because the cloak bends *all* light around you, including the light that

lets you see things, wearing it would be like walking around inside of a barrel. You'd be invisible to the world, but the world would also be invisible to you. That might make sneaking around Hogwarts a bit tricky.

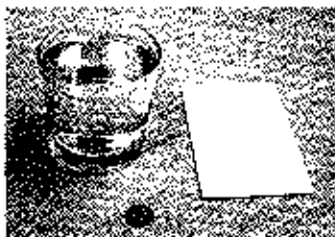
Still, invisibility isn't just a fantasy anymore. It could happen in your lifetime. Stay tuned!



This waffle is actually a tiny antenna array, part of a real invisibility cloak.

The Disappearing Penny

You don't need a high-tech cloak to do this vanishing trick, just a glass of water, a penny, and paper. Amaze your friends!



Lay the penny on a table. Fill the glass with water and set it down on top of the penny. Cover the top of the glass with an index card or paper.



Now, look for the penny in the bottom of the glass.

Where did it go?

The penny's image is being bent by the water and the glass, away from the sides, so it seems to disappear. (You can still see it from the top if you take the paper off.)

