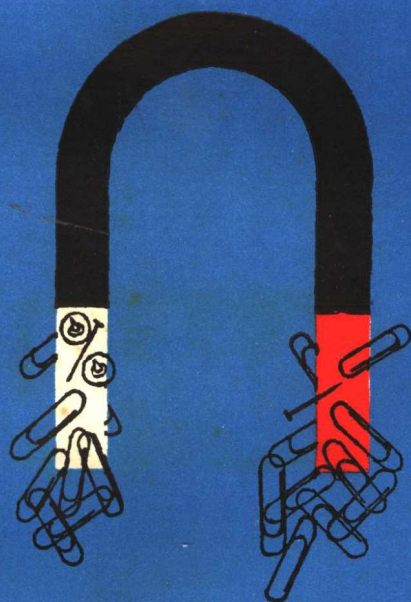


科普英语注释读物

# MAGNETS

## 磁铁



外语教学与研究出版社

1981 北京

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魏树德 译注

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外语教学与研究出版社出版

(北京外国语学院23号信箱)

重庆印制第一厂排版·印刷

新华书店北京发行所发行

全国各地新华书店经售

开本 787×1092 1/32 4.375印张 84 千字

1981年11月第1版 1981年11月重庆第一次印刷

印数1—5,500册

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书号: 9215·111 定价: 0.40元

## 前 言

本书是供具有初步英语基础的中学生和大学低年级学生及其他读者阅读的英语科普读物，内容生动有趣，文字精练通俗，有助于读者提高英语阅读能力、增长科学知识并积累科技基本词汇。

本书扼要地介绍了磁铁一名的由来、永久磁铁和暂时磁铁、磁铁的保管、磁铁玩具以及电磁铁的制造、性能及其用途等。为了使初学者既可节省时间，又能顺利地进行阅读，每篇短文后面都附有单词、词组和比较详细的注释。译文供读者在阅读某一短文后进行对照，以便检查自己对整个上下文是否理解正确。

由于译注者水平所限，本书肯定还存在不少缺点和错误，热烈欢迎读者批评指正。

本书译文承北京工业学院祖兴同志提出了许多宝贵的修改意见，在此深表谢意。

译注者

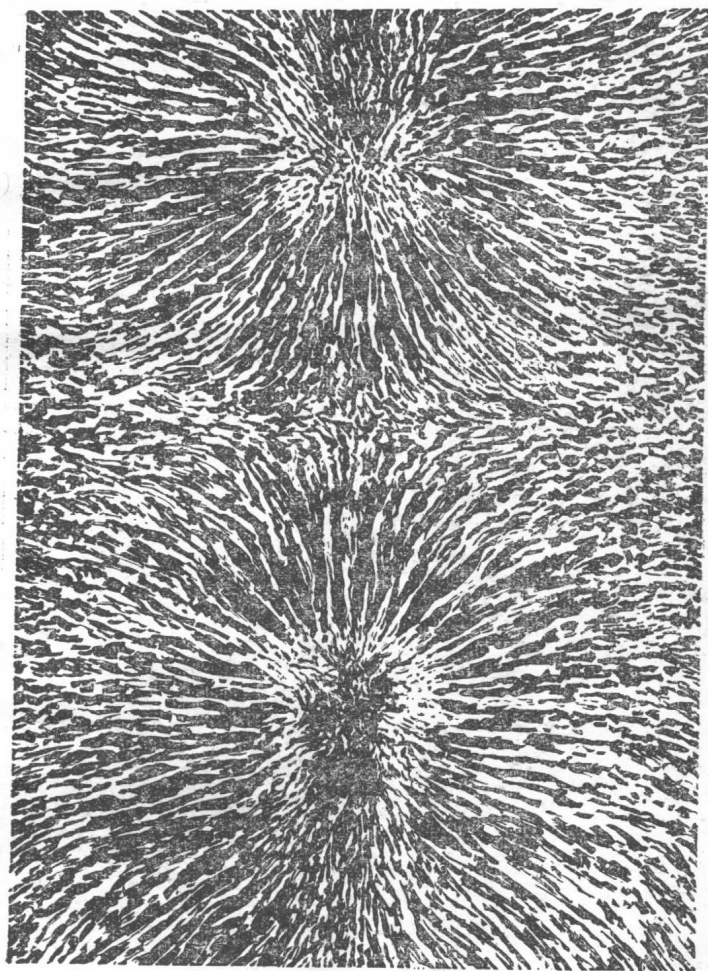


Fig.1

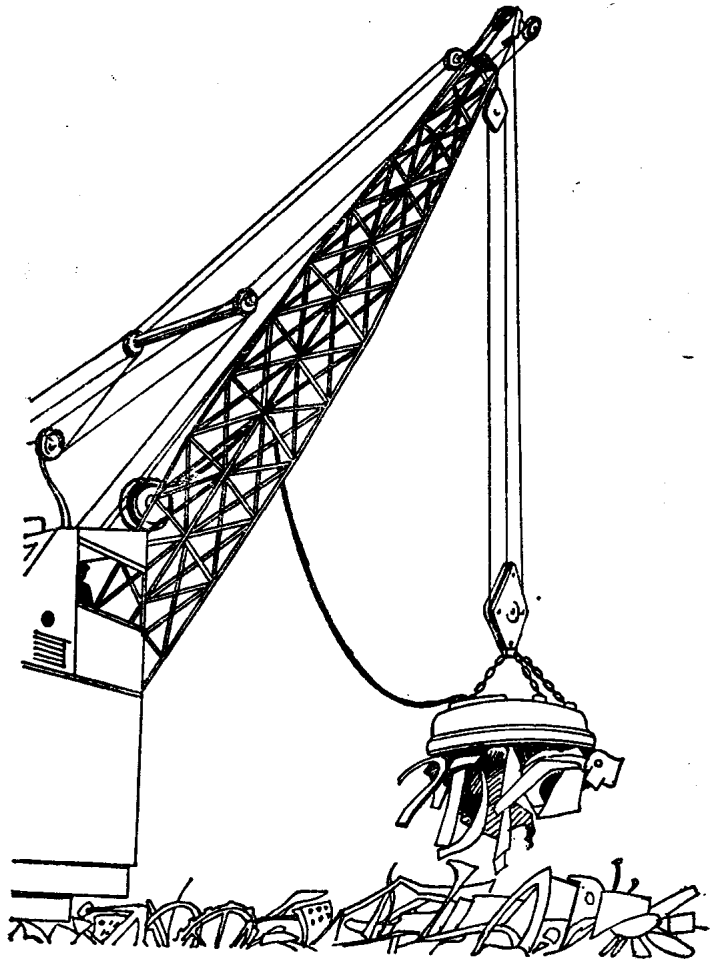


Fig. 2

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## 1. Magic

Nancy and Edward were out riding with their father and mother.① It was after dark.

They came to a place where there was a tall fence along the street.② Their father stopped the car.

"There is something here I want you to see," he said.③ "The big building on the other side of the fence is a steel mill. Notice the big pile just back of the fence. It is old iron which has been broken up into pieces. Now watch what happens."

The pile of old iron was really in a shed that was joined to the steel mill. The shed had a high roof. It did not have any sides. Just under the roof there was an opening between the shed and the mill. A bright light was shining through this opening.

Something was moving out of the opening.④ It was big and black. It was shaped like a round cake, but it was too big and black to look like a cake.⑤

It moved over to the highest part of the pile of iron.⑥ Then it began to come down. It came down until it touched the pile of iron.

Just as soon as it touched the pile, it began going up again. But now it was carrying a big load of iron. It went back into the mill carrying its big load.<sup>⑦</sup> No one could be seen anywhere.<sup>⑧</sup>

"It must be magic." Edward said. Nancy thought so, too. But of course there was not any magic.

The round "cake" that came down on the pile of iron was a big magnet. It was like the one in Fig. 2. It traveled out to the pile on a track up close to the roof.<sup>⑨</sup> It was fastened to a steel rope. This rope could be wound up to lift the magnet.<sup>⑩</sup> It could be unwound to let the magnet down.

A man was working a machine that made the magnet move in and out and up and down.<sup>⑪</sup> But he was inside the mill. No wonder Edward and Nancy thought that they were seeing magic!<sup>⑫</sup>

### New words

magnet [ˈmæɡnɪt] n.	磁铁, 磁体, 磁石
magic [ˈmædʒɪk] n., a.	魔术, 戏法; 魔术的, 有魔力的
ride [raɪd] vi.	乘车, 乘, 骑马 (或自行车等)
fence [fens] n.	栅栏, 篱笆
notice [ˈnəʊtɪs] vt.	注意, 注意到, 通知, 评论, 提到
pile [paɪl] n.	堆, 大量

iron [ˈaɪən] n.	铁, 铁制品, 烙铁, 熨斗
piece [pi:s] n.	片, 碎片, 块, 段
shed [ʃed] n.	棚, 小屋, 工棚, 车库
join [dʒɔɪn] vt.	连接, 接合, 使结合
roof [ru:f] n.	屋顶, 车顶, 顶, 顶部
opening [ˈəʊpnɪŋ] n.	开, 孔, 空隙, 通道, 洞, 开始
shine [ʃaɪn] vi., vt.	照耀, 发光(亮); 使发光, 使发亮
shape [ʃeɪp] vt., n.	使成形, 使具有……形状; 形状, 形态, 样子, 外形
round [raʊnd] a.	圆的, 球形的
cake [keɪk] n.	饼, 蛋糕, 饼状物
touch [tʌtʃ] vt.	接触, 碰到, 使接触, 使相碰
carry [ˈkæri] vt.	运送, 运载, 把……带(到), 携带, 传送
load [ləʊd] n.	担子, 重载, 负载, 负荷
travel [ˈtrævl] vi., vt.	旅行, 快速前进, 飞驰, 行进, 被运送; 旅行, 使移动, 运送
track [træk] n.	行踪, 轨迹, 路, 径, 小道, 轨道
fasten [fɑ:sn] vt., vi.	钉牢, 扣住, 闩住; 扣紧, 闩住, 抓住
rope [rəʊp] n.	绳, 索, 绞索,
wind [waɪnd] vt.	绕, 缠绕; (用绞车等) 绞起, 吊起, 用绞车拖(船等)
lift [lɪft] vt.	提起, 举起, 吊, 提升
unwind [ˈʌnwaɪnd] vt.	摊开, 展开, 放松, 伸直
work [wɜ:k] vt.	使工作, 使干活, 开动, 操作
wonder [ˈwʌndə] n.	惊异, 惊奇, 奇迹, 疑惑

## Phrases and Expressions

after dark	天黑以后
on the other side of ...	在...的那一边
break up	打碎; 使...分裂
as soon as ...	一...(就), 刚...(便)
of course	当然, 自然

## Notes

- ① Nancy and Edward ... and mother.

句中out是副词, 含有“外出”, “在外”的意思; were riding为过去进行时态, 表示过去某一时刻或某一段时期内正在进行的动作。

- ② They came to ... along the street.

关系副词 where(相当于in which) 引导一个定语从句, 修饰名词 place; 这里翻译定语从句时以另起一句为宜, 否则修饰语太长。

- ③ “There is something here I want you to see,” he said.

直接引语中 I want you to see 为定语从句, 修饰不定代词 something, I 前面省略了作to see的宾语的关系代词that。

- ④ Something was moving out of the opening.

句中 out of ... 的含义不是“从...当中出来”, 而是“在... (范围) 以外”的意思。

- ⑤ It was shaped like ... to look like a cake.

句中介词短语like a round cake (像圆饼状) 作状语, 说明谓语 was shaped; too (+形容词或副词) to (+动词原形) 是“太(…) 以致不能(…)”的意思; to look like a cake 作结果状语, 说明谓语was too big and black.

- ⑥ It moved over to ... the pile of iron.

句中副词over有“从一边(处)到对过一边(处)”的意思。例如: Hand that book over to me (请把那本书递过来给我。)

- ⑦ It went back into the mill carrying its big load.

句中分词短语 carrying its big load为伴随情况状语,表示一个陪衬性的次要动作。

- ⑧ No one could be seen anywhere.

句中谓语could be seen为过去时被动语态,这个被动句可译为主动的无主语句:

在这儿,看不到有人操作。

- ⑨ It traveled out to the pile on a track up close to the roof.

句中it代表前面提到的big magnet; out (往外), to a pile, on a track (在轨道上,循一定轨迹)和 up close to the roof 均为状语,从不同角度说明traveled。

- ⑩ This rope could be wound up to lift the magnet.

句中wind up 是“卷紧”的意思;不定式短语 to lift the magnet 作目的状语,说明谓语could be wound up。

- ⑪ A man was working a machine that made the magnet move in and out and up and down.

句中work作及物动词,有“开动”,“操纵”的意思;关系代词that引导一个定语从句,修饰名词 machine; the magnet move 作made的复合宾语,其中 the magnet 为宾语,不带to的不定式 move 为宾语补足语,宾语和宾语补足之间有主谓关系,即宾语在意义上相当于主语,宾语补足语在意义上相当于谓语; in和out, up和down均为副词,作方向(地点)状语,说明move。

- ⑫ No wonder Edward and Nancy thought that they were seeing magic!

No wonder(that)...这是一种常用的固定说法,意思是“难怪……”,that可要可不要;thought后面连词that引导的从句为宾语从句。

## 1. 魔 术

南希和爱德华同父母一起乘车外出，此时天已经黑了。他们来到一个地方，那儿沿着街道有一道高高的栅栏，父亲把车子停在这里。

“这儿有我要你们看的東西”。父亲说，“在栅栏那一边的高大建筑物是一个钢铁厂，注意栅栏后面的那一大堆东西，那是一些被打碎了的旧铁块。让我们看看会发生什么事情。”

这一堆旧碎铁放在与钢铁厂相连的库棚里。库棚的顶盖很高，四周没有围墙。刚好在顶盖下面、库棚和钢铁厂之间有一条通道相连，明晃的灯光照亮了整个通道。

通道外面有个又大又黑的物体在移动，其形状像圆饼，不过它要比饼可大得多，黑得多。

这个物体移到碎铁堆上方，然后开始下降，直到触及碎铁堆为止。

它一触到碎铁堆就又开始上升，不过它此时已携带了大量的碎铁。带着沉重的荷载，它返回钢厂，在这儿，看不到有人操作。

“这一定是魔术。”爱德华说，南希也这样想。当然这不是什么魔术。

落在碎铁堆上的圆“饼”是一块大磁铁，它与图 2 中的

磁铁相似。这块磁铁循着轨道往外朝碎铁堆移动直到接近棚顶。磁铁拴在一根钢丝绳上，这根钢丝绳可以卷紧以吊起磁铁，也可以伸展使磁铁下降。

有一个人在开动一台能使磁铁向里向外和向上向下移动的起重机，不过他是坐在厂房的操纵室里，难怪爱德华和南希以为他们是在看魔术呵！

## 2. "All-the-time" Magnets

Probably you have never seen a big magnet like the one Nancy and Edward saw.<sup>①</sup> But you may have played with little magnets. Fig.3 shows some little magnets.

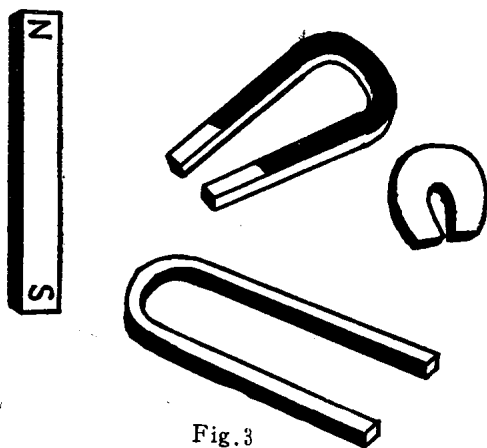


Fig.3

Two of the magnets in the figure are shaped like horseshoes. They are called *horseshoe magnets*. One of the magnets in the figure is shaped like a U. Magnets like this are called

*U-shaped magnets*. The straight, flat magnet is a *bar magnet*.

If you have ever played with magnets, you know that they pick up little things made of iron or steel.<sup>②</sup>



We say that magnets attract iron and steel. "Attract" means "pull".

Magnets attract big things made of iron and steel, too. Usually small magnets are not strong enough to lift big things made of iron and steel, but they pull them.③ It is easy to feel the pull.

Fig.4 shows some things that magnets will pick up and some that they will not pick up. They will pick up jacks, needles, thumbtacks, paper clips, and nails. All these are made of iron or steel. They will not pick up the other things in the figure.

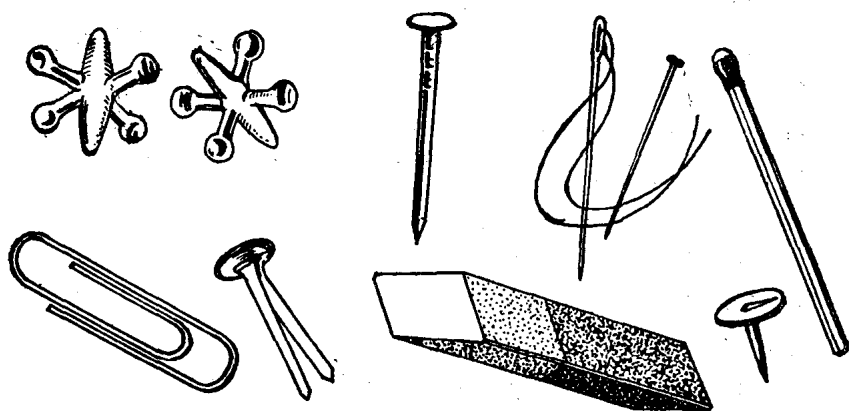


Fig.4

Are you surprised that magnets will not pick up paper fasteners and pins? Many people think that magnets will attract anything made of metal. But these people are wrong. Magnets do not attract all