The Automobile

AID TO SAFETY IN FOUR WHEEL BRAKES.

About a year and a half ago the automotive world was quite excited about the matter of brakes and much talk was being devoted to the four-wheel brake innovation. It was supposed to represent a big advance in the amount of control a driver might have over his car. It was calculated that this new feature would tend to lessen accidents and prevent injuries. In the light of the tested experience of the motoring multitudes who have used these four-wheel brakes during the last season, can they be considered in general as a standard and generally accepted feature of the better grade of cars?

Probably the chief question has been as to whether brakes could be operated on the front wheels without seriously interfering with freedom in steering. To assure safety in steering, the front wheels are inclined inward and under-graduated, and the steering knuckle pins are set at such an angle that they point directly at the spot where the tires touch the ground. This eliminates the tendency to change the direction of the wheel—a tendency that would otherwise exist if one brake should hold more than another. Equalizing bars or cables similar to those used when only two brakes were employed and an equaliser between the front and rear parts of brakes are designed to equalize the braking power.

APPLICATION OF BRAKES.

It is recognized that in turning corners the outside front wheel revolves faster than the inside one. Therefore, if the brakes are applied equally the outside wheel naturally would transmit more of the braking power than the other. To overcome this difficulty some brakes are so designed that the brake on the outside front wheel will not operate if the brakes are applied when turning the corner.

To facilitate the operation of the four-wheel brakes some makers have installed planetary gearing attached to the brake pedal. This is designed so that it will give quick action to take up lost motion in the linkage and increase the leverage when the brake shoes contact with the drums.

There is little doubt that four-wheel brakes enable a car to stop more quickly. Tests have proved that a car going at twenty miles an hour with two brakes could be stopped within thirty feet, and with four brakes within twelve feet, and that similar results could be secured when greater speeds were used.

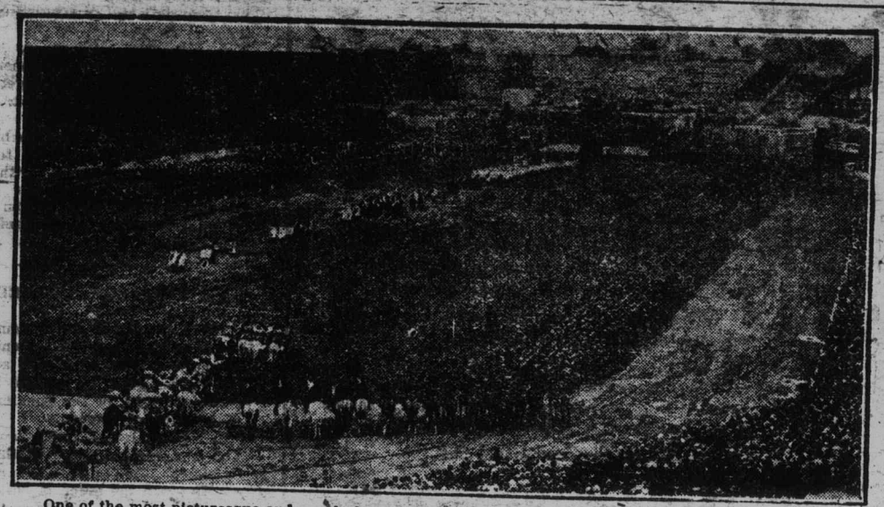
A car running along at a certain speed has a certain amount of energy stored in it. This car going down a hill has the amount of energy increased. To bring this car to a standstill it is necessary to absorb that energy. The way to do this is to turn it into heat at the brakes. With two brakes the car has a certain area of surface through which heat is absorbed by atmosphere. It has been shown that by using four brakes the area of radiation is doubled, with the consequence that the brakes do not heat up and burn the lining. This also allows the driver to increase his speed. Yet he is not likely to burn out his brakes and he has a greater margin of braking safety.

CAUSE OF SKIDDING.

The cause of skidding is the tendency for a car in motion to keep on moving in the same direction and at the same speed. To stop a car one must depend upon the traction of the tires with the road surface. As soon as the braking force is greater than the traction the tire slides over the ground, causing a skid. One of the things that controls the amount of traction is the weight of the car. The heavier the weight holding the car to the ground the greater will be the tractive force. With two brakes on the rear wheels only one-half of the weight of the car is utilized, as the other half of the car bears on the front wheels. Therefore it has become recognized that brakes on four wheels double the tractive effort employed in braking and halve the liability of skidding.

Various tests have also shown that contrary to the general opinion a year ago, brakes on the front as well as rear wheels assist a car in turning a corner. The tendency for a car in motion is to travel in a straight line. When the brakes are applied to the rear wheels only there is a tendency for the rear wheels to lose traction and skid because the centre of gravity is located midway between the front and rear axles. By dividing the braking effort between the front and rear wheels this tendency is minimized. This condition is made still better when the outside front brake is released and the inside front brake is applied strongly, as in the case of some brakes, because the car tends to turn around its own centre and in the direction of the corner to be negotiated. If the outside rear brake could be released this would still further benefit the situation.

As a result of more than a year of general usage the conclusion is that four-wheel brakes seem to be growing increasingly popular. The experience of motorists during the last year has gone a long way toward demonstrating that they represent a permanent asset to motordom.



One of the most picturesque and novel photos of Wembley is shown above. It was taken when their Majesties attended the Thanksgiving service and shows the clerical procession marching across the arena.

Prairie Trees.

Tests made at the Forest Nursery Stations of the Forestry Branch of the Department of the Interior, show that hardy conifers such as spruce, lodgepole pine, jack pine and Scotch pine are particularly suited for prairie planting and thrive under adverse conditions. These trees are now being widely planted throughout the Prairie Provinces.

The Coast Was Clear.

Little Janet, home from school unusually early, rang the doorbell, but no one answered. She rang a second and a third time but still in vain. Then a brilliant idea struck her.

She flattened her nose against the windowpane and in a shrill voice that must have reached the ears of every neighbor, called out, "It's all right, mother; I'm not the installment man!"

What Your Eyes Tell.

We are told that the eyes of the intellectual man are gray, and it is a fact that most men of genius have gray eyes. Brown eyes are said to express temperament rather than intellect.

Although brown eyes flash with anger, light up with joy, and change swiftly with jealousy, blue and gray eyes can express greater sadness.

Green and black eyes are supposed to be the most wicked. Becky Sharp's green eyes played an important part in her various conquests.

The "vamp" in modern fiction usually possesses flashing eyes of either green or black. Actually, there are no black eyes; dark brown or dark gray eyes have the appearance of being black in certain lights.

Natural Resources Bulletin.

The Natural Resources Intelligence Service of the Dept. of the Interior at Ottawa says:—

A very careful analysis of the world's silver production shows that about one-eighth comes from miners within the British Empire. Canada's silver mines have been the greatest producers within the empire for two decades, according to Dr. A. W. G. Wilson, of the Mines Branch of the Dept. of Mines. To-day Canada is the third largest producer in the world, being surpassed by Mexico and the United States only, who together contribute nearly 65 per cent. of the annual production.

Native silver was known to the Indians about Lake Superior before any Europeans set foot in that locality. Champlain mentions the occurrence of galena on the east shore of Lake Temiskaming, directly opposite and but a few miles away from the famous Cobalt areas of Ontario, but knowledge of the presence of silver is not recorded. Silver ores have since been found in Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, Alberta, British Columbia and Yukon.

Records of production, which have been kept since 1858, show a total recovery of silver to the end of 1923 of 451,000,000 fine ounces. Last year the recovery was slightly over 20,000,000 fine ounces. The price of silver varies daily, the highest yearly average on record being $1.23.2 per standard ounce 925 fine, and the lowest 47.2 cents. Present prices are around 68 cents per ounce.

The mines of Cobalt, South Lorrain and Gowganda, all in Northern Ontario, are Canada's principal silver producers. Since the first discoveries in this area, about twenty years ago, production has been close to 357 million ounces, while present production is at the rate of nearly nine million ounces per year.

Silver production in British Columbia and the Yukon is obtained from lead-zinc ores. In 1901 the maximum production was obtained, 5,151,333 ounces, in British Columbia. Between 1906 and 1915 silver production markedly declined, but since 1915 there have been slight advances, until at present the rate of production is about 8,000,000 ounces per year. A number of silver lead prospects were located in the Yukon, during the past few years, and rich ores are being mined in the Mayo district, where the present rate of production is about one million ounces.

Not a Steady Job.

She had been maid of all work in the family for more than twenty years. Like all faithful retainers, she did what she liked. She even tried to manage them until, in self-defense, they gave her a month's notice.

"Ah, well, ma'am," she said, "I can't say as I'm surprised. Somehow I always felt I shouldn't suit you."

Elephants' Keen Smell.

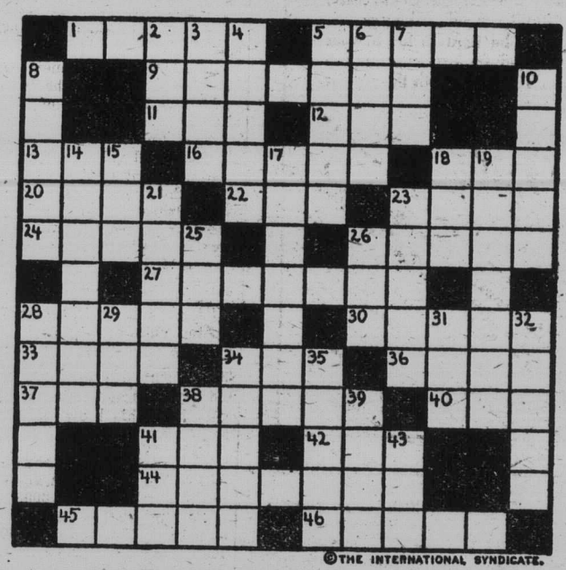
African elephants have been known to scent men at 1,000 yards.

A Huge Sort of Carp.

A species of Siamese carp reaches a length of over five feet.

Bride (consulting cook-book): "O my, that cake is burning and I can't take it out for five minutes yet."

CROSS-WORD PUZZLE



©THE INTERNATIONAL SYNDICATE.

SUGGESTIONS FOR SOLVING CROSS-WORD PUZZLES

Start out by filling in the words of which you feel reasonably sure. These will give you a clue to other words crossing them, and they in turn to still others. A letter belongs in each white space, words starting at the numbered squares and running either horizontally or vertically or both.

HORIZONTAL

1—Prayers
5—To remove the husk
9—Breathes out
11—Recline
12—Land measure of 100 square meters
13—A bench
16—A salute
18—An age
20—Continued in an inactive state
22—For shame
23—Reared
24—To bar
26—A kind of cloth
27—Discloses
28—Wild creature
30—Loud shouts
33—To impel
34—A basic industry (abbr.)
36—Narrative
37—Suffix same as "in"
38—Slumber
40—Coloring matter
41—Sorrowful
42—Sheltered condition
44—Funeral songs
45—Duet
46—Crawl

VERTICAL

2—Fish without ventral fins
3—Central line
4—A bundle
5—A drudge
6—Man of courage
7—To utilize
8—A fruit
10—Rank
14—Oriental
15—Sagacity
17—Pedigree
18—To do wrong
19—In royal manner
21—The Scandinavian language
23—Surrounded
25—To fondle
26—Cunning
29—Constructed
29—To grow old
31—A boy
32—Shabby
34—A genus of plants
35—Memento
39—Business transaction
40—An equal
41—To fasten with thread
43—Point of compass (abbr.)

The Locus in Quo.

Native—"Last week the boys hung our mayor in effigy."

Tourist—"So! Where is Effigy?"

Notes About Noses.

One of the purposes of the nose is to raise the temperature and himidity of inhaled air before it enters the lungs. The colder and drier the air, the greater the need for this function, so that in a race which has lived long in a cold, dry environment the nasal passages become long, and the nose high and narrow.

After migration from one type of environment to the other the adjustment is not immediate, but takes many generations. Thus, the high, narrow noses of the dominant castes in India indicate that the latter are comparatively recent immigrants from the north.

Fossil skulls found in Europe indicate very high, narrow noses during the Ice Age, gradually becoming shorter and broader as the climate improved.

Saving Sea Birds.

Thanks to the intervention of human beings, the fierce fight between sea birds and rats for supremacy on Ailsa Craig, the rocky islet at the entrance to the Firth of Clyde has ended in the rout of the rodents.

For ages Ailso Craig has been one of the two great British places for tens of thousands of sea birds. But about thirty years ago a few rats, swimming ashore from a wreck in the vicinity, established themselves on the island, and multiplied at such a rate that they soon swarmed over the whole rock. As the rats prospered the sea birds disappeared and in 1924 very few could be seen.

Last December the Royal Society for the Protection of Birds contracted with a certain firm to exterminate the rats, and poison was used so effectively that it is impossible to estimate the number of rats destroyed. The cost of the campaign was about £160, and Ailsa Craig is now restored to its old position as a sanctuary for sea birds.

Crossing Sea by Train.

A through service from London to Paris without changing cars or alighting from the train will become effective shortly, when huge ferryboats carrying trains are put into commission between Dover and Calais.

Sharp Answers.

Many a sharp answer is made in blunt language.

Moths Use Their Noses.

Moths can smell, scientists have ascertained.

Ancient Saying—"Pa, may I use the car, please?"

"Are you going away?"
"Yes, to Europe."
"By which ship?"
"Airship."
"But there is no airship service."
"There will be by the time my wife is ready."

Wonder where families used to put plunder years ago when there was no garages?

Timely Rhyme—"Hush, little vacant corner, don't you cry; you'll be a filling station bye and bye."

Heard on a Car.

First Woman—"Did your husband die a natural death?"

Second Woman—"Oh, yes, he was run down by a motor car."

Pedestrians should be thankful that they do not have to dodge bicycles any more.

What is funnier than balloon tires on Ford wheels? Well, there's the gold monogram on the door of a Ford runabout.

Most flivvers are filled with nuts.

Charity covers a multitude of sins. So do closed cars.

Man's inhumanity to man makes thousands hesitate at the curb.

Even if a man does pass you with his auto, he may be behind with his payments.

The average chauffeur certainly takes life easily.

Let those who never break the speed law cuss M.P.P.'s for breaking the dry law.

"Somebody put the hootch
In my car," sounds fine,
But nobody's ever,
Put any in mine.

The noise an automobile makes depends more upon the driver than upon the machine itself.

It is not so much the living wage as the flivving wage that men demand nowadays.

Correct This Sentence.

"My dear sir," said the traffic officer, "you disregarded my stop signal and jammed up traffic frightfully, but run along now and try to do better."

If you drive fast you're a lawbreaker; if you drive slowly, somebody whams you from behind.

Avoid Too Much Light.

Too much light can be as bad for the eyes as too little. Artificial light is now supplied so readily and so cheaply that it is a temptation to use too much of it—or at least to direct it with too great intensity on what one is reading. Did you ever try to read a book or a newspaper with the bright sunlight falling directly on the page? If you have, you will understand how excessive light can strain and fatigue the eye. The golden mean in illumination as i neverything else is the thing to strive for.

Solution of last week's puzzle.

L	A	R	V	A				C	A	L	L	A
I	D	A		D	R	Y		C	O	O		E	E	R
V	O	D	K	A		F		M	O	V	E	S
I		I	H	O	S	A	N	N	A		E	O
D	O	O	M		H	O		B	E		C	L	A	N
	U		A	D					C	O		N
	R		D	O	V	E		L	O	R	N		T
		W	O	N		A		I		A	G	E	
T		N	E	S	S		L	A	K	E		T	I
H		N	E	A	T		I	D	E	A		I	
L	E	N	A		M	E		E	G		L	O	N	E
I	O		B	E	R	G	S	O	N		U		N
G	L	I	D	E		O			U	N	S	E	T
H	I	S		S	O	N		T	O	M		E	R	R
T	E	E	M	S						B	E	A	T

MUTT AND JEFF—By Bud Fisher.

Outside of That, Jeff's Girl is O.K.