BOYS' AND GIRLS' PAGE

FORTUNES OF THE TOY STOVE

THE ROBBER KITTEN DROPPED DOWN WITH A SNARL.

When Mother Bear said she would put the children and the black hen in charge of the Robber Kitten Charlotte said:

"Oh, good! I love kittens."

But the black hen seemed doubtful and said "But, Mother Bear, I don't think Reynard Fox would be at all afraid of a kitten."

"Oh!" said Mother Bear smiling. "I guess he would be afraid of this kitten, who is a grownup wildcat and almost everybody in the woods is afraid of him. Robber Kitten is just a name he uses and he is really a terrible fellow, a highwayman, who pounces on the woods folks and robs them.

"There is one good thing about him though, he robs the strong and spares the weak. I'll tell him your story and he'll take the best of care of you."

So the children packed up their things and started out on their journey. After they had gone a long way Mother Bear stopped and said to nobody in particular: "I wish I could find the Robber Kitten."

Though they could see nothing they heard a sound of claws being sharpened. Mother Bear went on:

"He is a splendid fellow, so bold and strong, and if he was here I would put these helpless children and their companion in his charge."

Now there was a sound of deep purring. Mother Bear continued:

"What do you suppose the Robber Kitten would say if he heard Reynard Fox's boast that no one in the woods dared to come between him and his prey?"

At this there was a deep growl and a fierce head looked out at them from the branches of the tree above.

"Said that, did he?" hissed the head.

"Well met, Robber Kitten!" cried Mother Bear. "I hoped I should find you, for I want to ask you to take charge of these two poor little children who are seeking their fortunes and of their good friend the black hen, who has come along to help them at the risk of her life.

"Reynard Fox has been dogging their steps and frightening them whenever he dared, but if you will be so good and kind as to protect them for the rest of the way he will not dare to come near them."

At this the Robber Kitten showed himself on the limb of the tree and stretched himself lazily.

"Say no more, my dear madam," said he. "The children and the black hen shall come safely through the woods, and that cowardly, boasting Reynard Fox shall have a lesson."

So the travellers sorrowfully said good-by to Mother Bear and started off. The Robber Kitten said:

"You go on and I'll keep pace with you in the branches above. That is the way I usually travel, and if Reynard Fox tries to bother you I'd like to surprise him a bit."

The children and the black hen walked along feeling rather lonesome, for all the sign they had of the presence of the Robber Kitten was an occasional swish of the pine branches above them. Pretty soon who should come sneaking through the tree trunks but Reynard Fox.

"Ha, ha!" said he. "Glad to meet you, my young friends. I really must have a little private talk with that nice plump black hen yonder."

But before he got quite close to the black hen there was a howl from above and down dropped the Robber Kitten right in front of Reynard Fox, snarling and spitting and with every claw bared.

THE ROBBER KITTEN.

THE PUZZLES OF PATSEY

One of the reasons that Patsey had such confidence in Mr. Pantoor's ability to solve anything in the way of a puzzle was that he knew that he belonged to a puzzle club that makes such things as much of a study as chess clubs make of chess or billiard players of billiards. But for all that he could not help thinking there must be something wrong about that last one and that Bill would win his dollar.

The proposition was that two fathers and two sons had paid $1515 for a business and that each had put in the same amount and that these amounts were in even dollars. Now Patsey knew enough about simple arithmetic to see that you cannot divide 1515 into four parts without a fraction.

On his way to Mr. Pantoor's that afternoon he met Bill, who wanted to know what Patsey had made of it, and the Irish lad had to use his wits to keep from committing himself, as he did not know whether it could be done or not; so he just gave a laugh and waved his hand at Bill, saying: "Ye'll be a rich man for sure, if ye keep on betting that way," and hurried on.

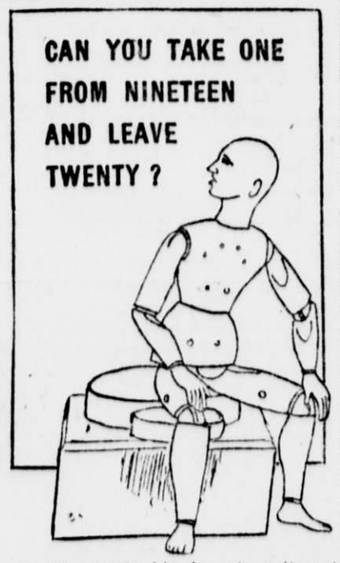
Mr. Pantoor never said anything when he handed Patsey the solutions, but if the puzzle had a good catch in it he would always smile, so when he gave Patsey the card Patsey knew at once that he had solved the riddle. This was what was written on the back:

"The amounts were $505 each. Call one father A. Jones and his son B. Jones, who has a son called C. Jones, and you have two fathers and two sons, but only three persons."

The idlers were inclined to quibble with this answer at first, especially Bill, who hated to lose his dollar, and who asked Patsey what he meant telling him he would get rich on the bet.

"Sure it's laughing at ye, I was," retorted Patsey. "Give me something easy this time and wait till I do be after insisting ye before ye bet good money on it."

"All right," they answered at once. "Take this one. It may be easy, but we can't do it," and they handed Patsey a nice short puzzle. On reaching his desk the next morning, Mr. Pantoor found a manikin sitting on his inkstand looking up at this question:



It did not take him long to write out the answer for this one. What was it?

Boy's Good Shot Kills Big Cougar.

Woodville correspondence Portland Oregonian

Eugene Moore, aged 12 years, who lives with his parents on Evans Creek, about twelve miles from Woodville, shot and instantly killed a full grown cougar Monday.

Young Moore and companion, Frank Hillis, aged 10 years, were coming home from school and as they neared the house they heard the dogs barking and made an investigation. To their consternation the dogs had treed a cougar, and Eugene, after bidding his companion to keep the dogs on guard, left for the house, some 200 yards away, in search of a rifle.

Mr. Moore, the father, was not at home, but the boy shouldered his father's 30-30 and started for the lair of the cougar. The first shot killed the animal.

ANSWERS TO LAST WEEK'S PUZZLES.

Here are the names of those that sent in good answers to the puzzles that were printed last week. Master Ned Devin and Raymond Hannon were the only two that answered all four.

AUNT MARY'S ANAGRAMS.

Dorothy Seymour, Helen Berg, Cory H. Ford, Jean Ross, Douglas Bruh, Huntington McLane, Ned Devin, Raymond Hannon, Grace C. Reed, Hugh William Carter, Bernice C. Heller, Jane Elkins, Ethel Elkins, Helen Beerbower, Edith Carolyn Brill, Mildred Marie Fitz, Lillian C. Amerman, Annie J. Clarke, Horace A. Lewis, Ethel Hart, Charles T. Emmett, Bessie M. Ray, Walter C. Bergland, Violet M. Holloway, Lillian Voorhees, Thomas Goodwin, Jr., Beatrice J. Foley and Mabel J. Elliott.

As an example of how this sentence might be twisted and still make sense here is one of the anagrams sent in, which made Aunt Mary laugh: "Was the barber with a shave trying to chop mutton with a razor, while an old man set himself down to eat whiskers?" This shows a praiseworthy effort to change the meaning of the words. Transpose the words "mutton" and "whiskers" and it would be all right.

NONSENSE RHYMES.

Alice Babcock, Helen Berg, Helen Reynolds, Anna D. Prevost, Cory E. Ford, H. Hanson Kimball, Elizabeth Alexandra Grant, Douglas Brush, Willie McNab, Ned Devin, Raymond Hannon, Grace C. Reed, Gordon McFarlane, Jane Elkins, Ethel Elkins, John P. Wise 3d, Charlotte Booth Burr, Emma Root Deacon, Annie J. Clarke, Josephine Kemmerling, Ethel Hart, Walter C. Bergland, Frances Allan, Bessie M. Ray, Violet M. HoHoway, George B. Parker, Dorothy M. Baldwin and Beatrice J. Foley.

There were three good readings of this to which no names were signed. Always remember to sign your name, or THE SUN cannot give you credit.

PATSEY'S PUZZLES.

Douglas Brush, Willie McNab, Ned Devin, Raymond Hannon, Horace A. Lewis, Charles T. Emmett, Frances Allan, George B. Parker a d Thomas Goodwin, Jr.

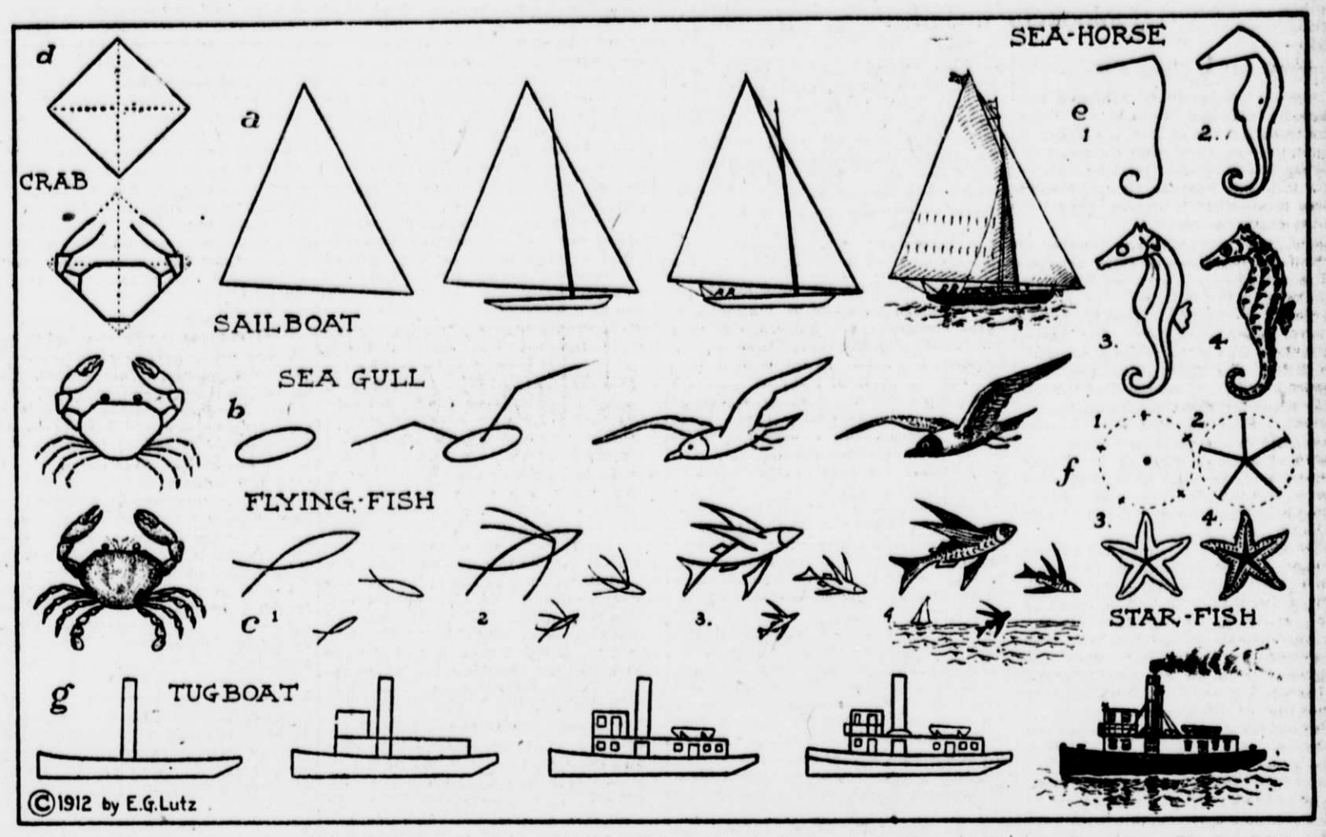
SAMMY'S CHARADE.

As most of those who solved this one probably guessed, all the talk of Sammy's chum about sparks was just a bluff ot throw Sammy off the track. The first picture was a car, which is a common name for an automobile. The other was a pet, which is what many cats are, so the whole word was

CARPET.

Those who guessed it right were Ned Devin, Raymond Hannon, Charlotte Booth Burr, Emma Root Deacon, Horace A. Lewis, Josephine Kemmerling, Walter C. Bergland, Bessie M. Ray, Lillian Voorhees and Beatrice J. Foley.

HOW DRAWING IS MADE EASY FOR EVERYBODY



The first thing you notice about a small sailboat is the triangular shape of the sails. Naturally, then, you will start a sketch of such a boat by drawing a triangle like figure A. Next you draw the hull and the mast. In the finished picture do not put much shading on the sails.

A sea gull is started by making a shape like figure B. You will observe next that the lines put in to mark the place and position of the wings give this simple preliminary sketch the appearance of an aeroplane. As you add to this aeroplane the head you at once put in as a counterbalance the feet and the tail.

The two simple curved lines that cross one another give at once the general idea of a fish. Figure C, 1 to 4, are pictures of the flying fish of the warm tropical waters. Note how all the lines, in the direction they take, give an idea of and aid in depicting a flying fish.

A square set up on one end with light lines drawn through it as in figure D will be the foundation on which you draw the crab. Nearly all the lower part of the square contains the body. The angular characteristic of the body is continued in the limbs. Notice that one set of legs has the parts broadened out. Be sure to indicate the two sets of feelers and the eyes.

The little seahorse you start by making what looks like a short handled, long lashed whip with a curl on the end. In sketching things try to notice the principal characteristic first. Get this down on your paper at once. See how in this case the simple lines of figure E give a general idea of a seahorse at once.

A starfish is drawn easily by following figure F, 1 to 4. You make the circle with a pencil compass. The five divisions into which it is divided need not be exactly equal, as the starfish, being a living form, does not grow on geometrical lines.

Figure G shows that the hull and the smokestack are the important things for the beginning of the picture of a tugboat. Next the straight lines are drawn that make the cabins and the pilot house. In the third stage the lower part of the smokestack is turned into a door and the other doors and windows are marked. When you finish the picture remember to indicate the gilded eagle that is perched over the pilot house of about every tugboat.

Problems in Astronomy for Young People

The weather has not been very well suited for studying the stars lately, but young people who take an occasional peep at the sky must have noticed that their old friends are still there. At 8 o'clock in the evening the Dipper is now up as high as the Pole Star, and Cassiopeia, or the Chair is just as high in the sky to the left. The Square of Pegasus is gone, having sunk below the horizon, but almost overhead is the second brightest star in the sky, the golden Capella.

If you turn to the south you will find that Orion with the belt is now high up in the sky, and at 8 o'clock the beautiful clear white Sirius is due south. This is the time of year to see the first magnitude stars at their best, and you can find seven of them and two planets all in front of you like this:

Although the weather is not suitable for sitting on the roof and studying the stars themselves, you may profitably study some of the facts connected with astronomy which touch our everyday lives at various points. Among the many things of absorbing interest probably none is more fascinating than the marvellous accuracy of the instruments that are used by astronomers and the patience and ingenuity that have been devoted to their construction. Without an understanding of these instruments it is impossible to believe some of the facts that are now known about stars that are so far off that it takes their light more than a hundred years to reach the earth.

The foundation on which modern astronomy rests is perfection in the measurement of minute angles. These are always expressed by degrees, minutes and seconds of arc, and the accuracy depends simply on how closely astronomers can read the seconds and decimals of seconds. Take an ordinary ruler, such as you use at school, and the smallest division on it is an eighth of an inch. If this were to represent 100th of a second of arc the circle on which it was inscribed would have to be eighty-two miles in diameter; but an astronomer can measure this in a little room ten feet square!

When it comes to the measurements of distances the accuracy of modern methods is amazing. A first class draftsman, using a ruler, can put 150 lines to the inch so that they can be counted. An astronomer can count 25,000 lines to the inch, which means that he can measure a thing that is only 1-25,000th of an inch thick!

The distance from New York to Chicago is expressed in miles; the length of a golf course in yards; the height of a building in feet; the width of a piece of cloth in inches, and the thickness of materials or the size of tools in sixteenths and thirty-seconds of inches. There is no unit below inches in common use; it is necessary to get down to decimals of inches for fine work.

In all these the accuracy of the measuring tape is the chief thing, but when we get down to finer measurements the human eye is no longer able to read the rule. If we want to know the diameter of a needle we must have some instrument which is not only more accurate than a foot rule but will present the result to the eye, so that it can read the units, even to the thousandth of an inch, just as easily as it can read the units when they go no lower than the eighths on a schoolboy's ruler.

All marks or lines on a rule have a certain width or thickness and must be placed a certain distance apart in order to count them. The finest scales made for common use divide ¼ of an inch into 12 parts, which gives us 96 to the inch, but no one can tell whether a thing is a 60th or a 75th of an inch thick by laying it on a rule.

There are two principal ways of making it easy for the eye to read minute measurements. One is called the vernier and the other the screw, and every one who wishes to grasp the great facts of astronomy should understand the principles on which they work.

Suppose you had a circle divided into 360 degrees, such as you find on the base of a surveyor's instrument for measuring angles, and that this circle turned freely within another, which was fixed, with an arrow upon it to mark zero, like this:

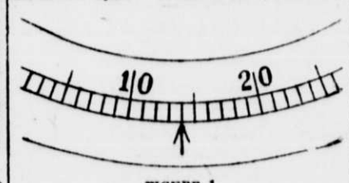


FIGURE 1.

If you have started with the inner circle at zero and then moved it to the position shown in figure 1 it reads 14, which shows that it has passed through 14 degrees of arc. In a circle of six or seven inches in diameter these degrees would not be more than one-twentieth of an inch, so that if we wished to read minutes as well as degrees we should have to divide each twentieth of an inch into 60 parts, or rule 1,200 lines to the inch, which would be both impossible and useless.

Pierre Vernier invented a small auxiliary scale which makes it unnecessary to make these fine subdivisions upon the main scale. To make a vernier we take any number of parts of the main scale and divide the space of one less into the same number of spaces as the whole. That is the rule. For example:

We take 10 degrees on the main scale, 1 less than which is 9 degrees, and divide this 9 degree space into 10 parts. This vernier scale we attach to the right of the zero mark on the fixed circle, like this:

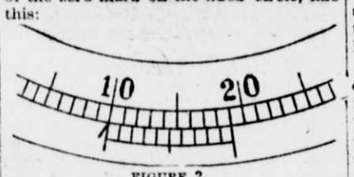


FIGURE 2.

Now let us suppose that we had moved the inner circle a trifle more than 14 degrees of arc we shall find that our zero mark no longer coincides with any of the marks on the main scale, but if we look carefully along the vernier we shall discover that there must be some one of its lines that exactly coincides with some line on the main scale, as in figure 3.

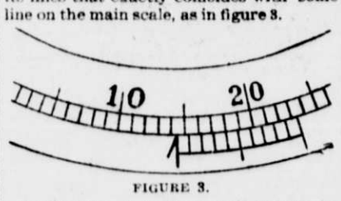


FIGURE 3.

In this case it is the fourth line of the vernier, so that the zero mark is exactly four-tenths of a degree past 14 degrees. What mark it is opposite on the main scale does not matter, as the vernier is the only scale to be read for fractions of a degree. As the tenth of a degree is 6 minutes the exact arc through which the inner circle has been moved is 14 degrees 24 minutes.

Now the best way for a boy to learn the exact use of a vernier is to make one himself and use it to measure things. To do this take an ordinary school ruler divided into eighths. Following the rule already given we take eight of these parts and divide the space of one less, which will be seven-eighths, into eight. Do this neatly on a piece of visiting card. This is your vernier for the eighths on the foot rule.

Suppose you want to measure the exact width of a piece of fine wood. Hold your foot rule upon it with your left hand and you will see that it is something over two and a quarter inches, but is not quite two and three-eighths. Now put your vernier on it like this:

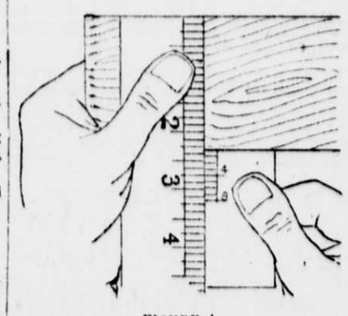


FIGURE 4

If you look over the lines of the vernier carefully, you will find that the fourth one exactly coincides with one of the marks on the foot rule—no matter which—so that the width of your piece of wood is four-eighths of an eighth of an inch more than two and a quarter inches. As this is four-sixty-fourths it can be reduced to one-sixteenth, and your wood is two inches and five-sixteenths exactly. This shows that you can measure down to a sixty-fourth of an inch with an ordinary foot rule which reads only to eighths. If it read to sixteenths, as many carpenters' rules do, you could measure as close as 1-128th of an inch with your vernier.

JEALOUS PETS.

I have a gray kitty and Twinkle's her name,
She follows me round and is cunning and tame.
But Dicky the poodle and Billy the pug
Jump on me and bark when I give her a hug;
And when I call, "Kitty, here kitty!" all three
Come running together as fast as can be.

Sometimes on an errand for Mother I go
And Twinkle trots after—I have to walk slow.
And Dicky and Billy just won't stay behind,
I scold them and scold them—they simply don't mind.
A funny procession the neighbors all see,
Dear Twinkle and Dicky and Billy and me!

When supper is ready and none of them near
I call very softly, "Here's meat, Kitty dear."
Then Billy comes running and after him Dick—
They snatch the best morsels if Kitty's not quick.
Such jealous old doggies you never did see!
It saves lots of trouble—one name does for three.

TEDDY'S TRICKS WITH FIGURES

There are a great many curious tricks with figures that will reveal certain things that a person thinks he is keeping a secret, such as his age, the date of his birth, or the last two numbers on a dollar bill that he has hidden in his pocket.

Teddy had a number of these, but the one that he thought the most of, because it was of practical everyday use, was to tell the day of the week on which any day of the year would fall in the years to come, or had fallen in the years past.

He had several ways of doing this, but some required a better memory or more mental dexterity than others, and the one that would probably be most useful to the boys and girls that read THE SUN was the one Teddy liked best, because if you cannot do it in your head you can always do it with pencil and paper. Here it is:

Some weeks ago THE SUN printed a little mental calendar for the year 1912 which gave the day of the week on which the first day of each month would fall after February. This is it:

Time Flies Fast,
Men Wisely Say
Mén THink Alas!
Time's Fooled Away.

The initials stand for the days of the week for each of the twelve months, three months in a line. The "TH" in THink stands for Thursday, to distinguish it from Tuesday, and the A stands for Sunday. It is only an accident that this little rhyme will do for the first day of each month in the present year; but the same verse will answer for every year if a change is made in the number of the day. Next year, for instance, it will give the day of the week on which the seventh of the month falls, not the first.

Here is the little trick with figures that Teddy used to find out on which day of the month the days of the week indicated by the verse would fall in any year. Of course, he began by asking some one to name a date, such as his birthday, promising to tell him what day of the week it was.

If the date asked for is in the last century, such as, "What day of the week was the Fourth of July in 1876?" the Centennial year, the first thing to do is to divide the last two figures by four, to see if it is a leap year. As 4 goes into 76 just 19 times, 1876 was a leap year.

The next step is to take half the leap year and then divide this half by seven, so as to get a remainder, thus:

76÷2=38÷7, 3 remains.

This remainder gives the day of the month upon which the days of the week indicated by our little verse will fall. As July is the seventh month, we take the seventh word, at the beginning of the third line, in which the initial letter is M for Monday, so that the first Monday in July, 1876, was the 3d, so the Fourth of July in that year must have been on a Tuesday.

If the day is further along in the month you simply add sevens to find the dates for the same days of the week for the whole month, or until you reach the date you want.

Suppose the date asked for was Christmas instead of the Fourth of July for 1876. As December is the twelfth month and A is the initial of the twelfth word, the remainder 3, which we have already found, must mean that the 3d of December, 1876, fell on a Sunday. Then the succeeding Sundays were the 10th, 17th and 24th, so that Christmas Day, the 25th, must have fallen on a Monday in 1876.

If the year is not a leap year you must deduct one for each year since the last leap year. You begin in the same way, dividing by 4 to find if it is a leap year, or what the last leap year was, and then you take half the leap year, not half the year you want.

Suppose you are asked for the Fourth of July, 1895. The last leap year, found by dividing by 4, was 1892, so we deduct the 3 years past before dividing by 7, thus:

92÷2=46÷3=43÷7, 1 over.

As the initial letters in the little verse never change, July is still Monday, but now you get 1 as a remainder, so that in 1895 the 1st of July was a Monday and the Fourth fell on Thursday.

When it comes to dates in the present century, which is called the twentieth, you must add 2 after the final divison by seven. Otherwise the calculations are the same as for the nineteenth century.

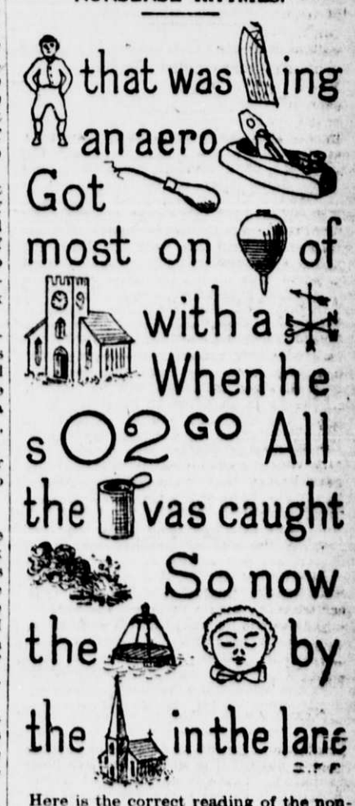
For example. On what day of the week will the Fourth of July fall in 1912? This being a leap year we get:

12÷2=6÷7, 6+2=8 over.

As you cannot divide 6 by 7 you have the whole 6 left, to which you add 2 for the twentieth century. As we still have Monday from our verse for July, the 8th will fall on a Monday, so the previous Monday will be the 1st, and the Fourth of July will fall on Thursday.

It requires only a little practice to make these calculations in your head, and with a little patter to cover it up it seems as if you were not doing anything but just remembering. Teddy could do it so fast that he always pretended he had committed all the calendars to memory for all the years and simply called up the image of the one required, just as a blindfold chess player calls up the image of each board and pieces when it comes to his turn to move on that board in a simultaneous contest.

NONSENSE RHYMES.



Here is the correct reading of the nonsense rhyme that was printed last week, the words or syllables indicated by a device of any kind being placed in brackets:

[Little] Tommy was [watch] ing a [float]
That would bob [up] and [down] in the [moat].
But the [fish] [would] [not] [bite],
Tho' he stayed there [till] [night]
And con [trac] ted a [cold] in his [throat].

Judging from the attempts at reading this that were sent to THE SUN, several parts of it require a little explanation. A bight is the proper term for a loop of any kind made in a piece of rope. A cash register is really a till, with a registering apparatus attached to it. A knight is one of the pieces used by chess players. Throat is the name of the upper corner of a sail that is nearer the mast.