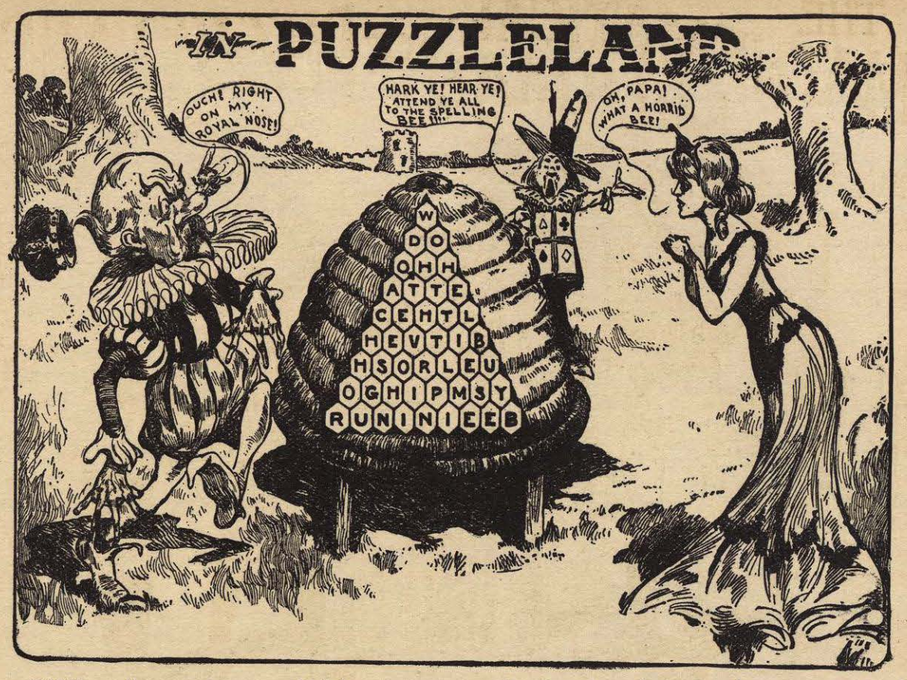


Tommy Riddles calls attention to a wonderful educated spelling bee, which has been trained to perform all sorts of interesting tricks. You will observe that each of the 45 cells contains a letter, so that the intelligent bee starting from a certain letter, can pass in a continuous line over the 45 letters and spell out a little couplet with which everybody is familiar. Can you figure out the route which spells out the hidden sentence?

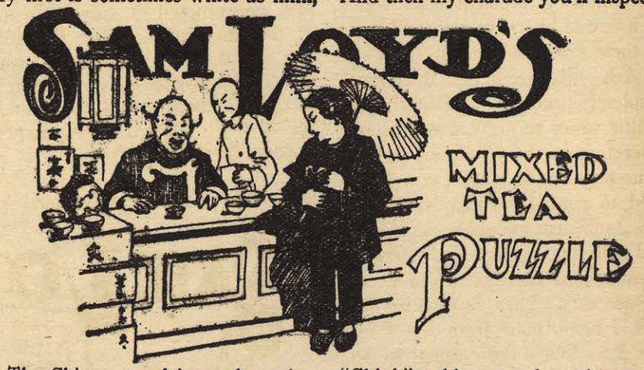
The second puzzle is somewhat different. The bee enters the door, and beginning at one of the lower cells, passes over all of the other cells in straight lines, ending up at the top cell, having followed a route which required the fewest possible number of turning points.

When Longfellow, the poet, held the professorship of modern languages at Harvard College, he frequently referred to the possibility of clothing mathematical problems in more attractive guise, so as to interest the students. He was fond of mathematical studies himself, and in pursuance of his plans suggested some very interesting and clever problems, which were afterward embodied in his work entitled "Kavanah." The few specimens of his mathematical skill introduced in the book named are the only problems which have been preserved. One elementary proposition which will interest our young puzzlists is as follows:

If one-fifth of a hive of bees flew to the ladamba flower, one-third flew to the slandbara; three times the difference of these two numbers flew to an arbor, and one bee continued to fly about, attracted on each side by the fragrant ketaki and the malati, What was the number of bees?

A Charade.

My first is sometimes white as milk,
And often is composed of silk;
And though it's somewhat like a fable,
Again its color is a sable.
To make the wonder still more rare,
I've often seen it made of hair.
So you'll find out without much pains
'Tis not far distant from the brains.
My second, I must now reveal,
Is formed my former to conceal;
My first and second now connect,
And then my charade you'll inspect.



The Chinese revel in mathematics, and every merchant is an expert juggler in figures as well as weights and measures. Here is a puzzle in mixed tea which a Hong Kong shopkeeper sprung on a member of the Taft Party during its sojourn in the Flowery Kingdom. It seems that the "Chink" sold a popular mixture of two kinds of tea, one of which cost him five "bits" the pound and the other three "bits." He mixed up forty pounds, which he sold for six "bits" per pound, gaining a profit of 33 1-3 per cent. Now can you tell how many pounds of the five "bit" tea he used in the mixture?

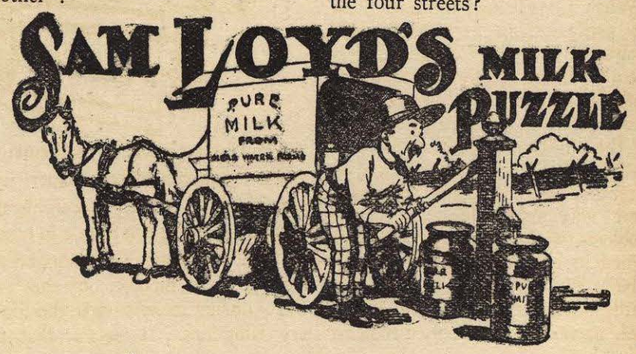
THE MATHEMATICAL MILKMAN OF PUZZLELAND

Our puzzlists are here treated to one of those every-day little problems with which all good citizens of Puzzleland are supposed to be familiar in that country of riddles and tricks where all business transactions are done upon a puzzling basis. The school children were returning to their homes when they met the mathematical milkman, who propounds the following problem with which he interests his customers: "In one of these cans there is milk which is so rich with cream that it becomes absolutely necessary to dilute it with a little water to make it wholesome. Therefore in the other can there is some pure spring water; now I proceed to pour from can No. 1 into No. 2 sufficient to double its contents, and then repour from No. 2 into No. 1 enough of the mixture to double the contents. Then, to equalize matters, I again pour from No. 1 into No. 2 to double the contents of No. 2, and find the same number of gallons in each can, although there is one more gallon of water in can No. 2 than there is milk, so I want you to tell me how much more water than milk is there in can No. 1?

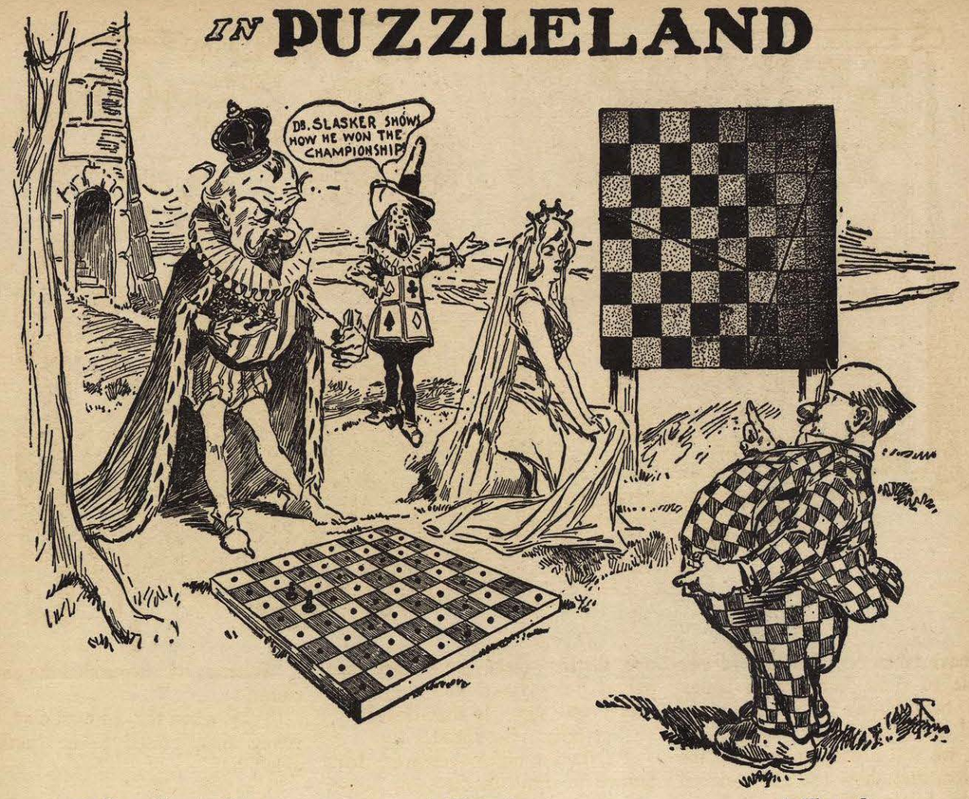
"That is a simple problem," exclaimed Harry, "but if you want a real clever little puzzle in proportion to work off on your patrons, just solve this: "Suppose you had ten gallons of milk in one can and ten gallons of water in the other and you should pour a quart of milk from the first can into the water can. The mixture would evidently be 40 to 1, but as that might be too rich for the blood of some of your patrons and you want each can to hold ten gallons, you proceed to pour one quart of the mixture back into the milk can. Now tell me; how much greater is the proportion of water to milk in one can than of milk to water in the other?" There is a study in proportion for you!

Here is "another story about his brother":

It was the daily practice of a conscientious milkman to fill his two sixteen gallon cans with pure milk and start out to serve customers on four different streets, the same number of quarts being required on each street. After serving the first street he connected with the city water supply and lo, his cans were again filled to the brim. Then he served street number two and again backed up to the fount, which replenished his cans as before. And so he proceeded serving each street and diluting with water until all of his happy customers were served. If forty quarts and one pint of pure milk remained in the cans after all of his customers were attended to how much pure milk must have been delivered on each of the four streets?



IN PUZZLELAND



Tommy Riddles tells us that we need know nothing about checkers or chess to solve these puzzles. King Puzzlepate is trying to place the greatest number of men on a chess board without having three men in line in any possible direction. He has started by placing the first two men correctly; now it is up to you to assist him by adding as many men as possible without getting any three in line.

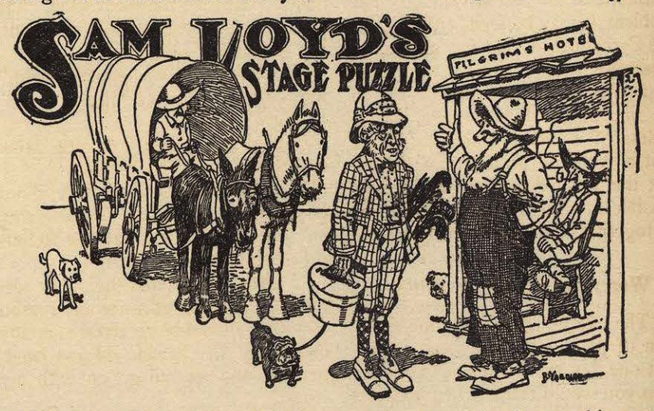
We are told that the first checkerboard ever constructed, which was made by a man by the name of Siesa, and is still preserved in the British Museum, is made of four pieces, as the one shown in the second puzzle. Now the four pieces of this board can be rearranged together so as to make three different puzzles: A square board of 64 squares, an oblong one of 65, or an odd-shaped one of but 63. It is said that Dr. Slasher won the championship by this marvelous coup of arranging the four pieces so as to reduce the board to 63 squares. See if you are able to do it. There has been so much discussion regarding this paradoxical problem that occasion is taken to say that Mr. Loyd presented it before the first American Chess Congress in 1858.

A Charade.

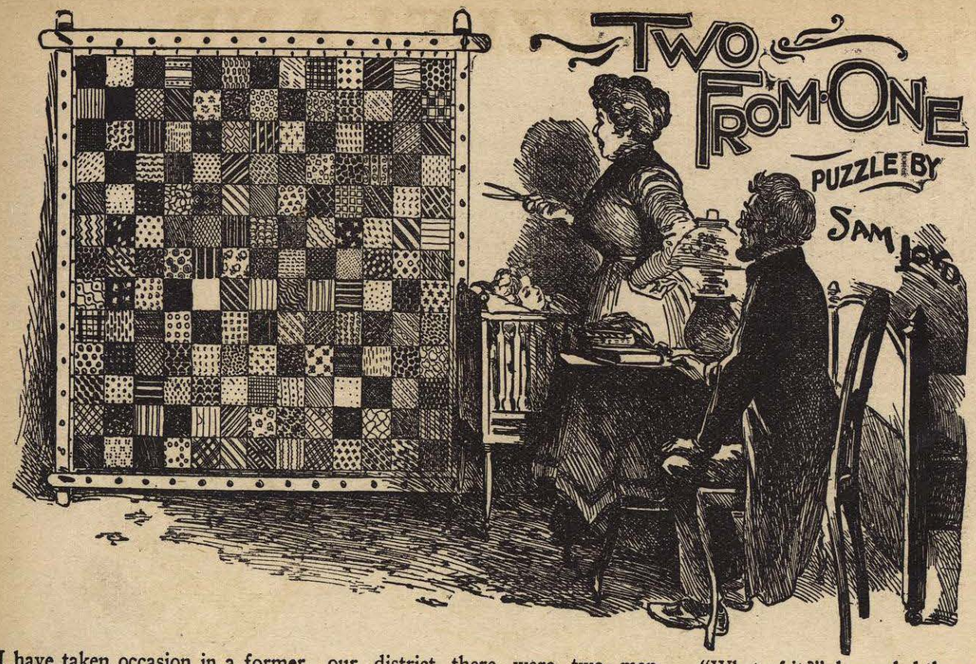
I am what I was, which is so much the worse,
I'm not what I was, but quite the reverse;
From morning till night I do nothing but fret,
And sigh to be what I never was yet.

A Charade.

My first, a substance hard and bright,
Is useful, morning, noon, and night;
My second, find it where you will,
Is of the same dimension still:
And by my whole, I often try,
Butchers' and grocers' honesty.



An English tourist in the wild and woolly West was informed that if he wished to walk on to Piketown the stage would only get there one mile ahead of him for although it would get to a certain wayhouse while you were walking four miles, it waits there 30 minutes, so you would catch up in time to ride on to Piketown if you wished. "But," as the host of the Pilgrim's hotel remarked, "from these facts there is a clever way of figuring out how to beat the stage by 15 minutes!" Can you tell how far it was from the hotel to Piketown?



I have taken occasion in a former puzzle to show how eleven ladies, each contributing a square piece, could make a 13x13 patch quilt. Now we will proceed to reverse the problem and show the good parson and his better half confronted by an ordinary problem in household economy. They have use for two quilts now, and as they have but one in stock, so they are compelled to draw upon their inventive resources. The sketch shows them discussing the ways and means of securing two from one to the best advantage. The problem, it may be seen, differs from the Pythagorean rule for uniting or separating squares, in that the checkered pattern prevents the bias cut on the line of the hypothenuse, nevertheless, it is closely allied to square root and the 47 problems of Euclid. Cut the 169 patches into the fewest possible number of pieces which will fit together and form two squares.

Worrying the Query Editor.

"The question, sir," said the chairman of the delegation, "is an important one, but more difficult to answer than you would think, when you first hear it. We have wagered a matter of three cigars on it, so there is a special reason why you should be very careful in answering it."

"Fire away," said the query editor, shortly.

"Well, you see, it's this way," explained the spokesman. "Over in our district there were two men named John Jinks, and they were father and son. Is that clear?"

"Perfectly. Go ahead."

"Well, last night they were both burned to death in the same house, and to-day, when we were making up a list of those who lost their lives, the boys insisted on putting down 'John Jinks, sen.,' and 'John Jinks, junr.'"

"Quite right," asserted the query editor.

"That's what we came to ask you about," returned the spokesman. "Of course, we all knew who was meant, but technically——"

"Technically it was exactly right," interrupted the query editor.

"Sure?"

"Sure! Of course, I'm sure. How else would you refer to them?"

"Oh, if you're so dead sure about it we're not going to dispute you, but you ought to take all the technicalities into consideration."

"I have," thundered the query editor. "If you can advance any reason why they should be referred to in any other way, fire ahead. If you can't, get out and let me go on with my work."

"Well," said the spokesman, slowly and deliberately, "I figured it out a little differently. You see, the old man lived downstairs and the boy lived on the floor above, and the fire started in the basement. Consequently, it stands to reason that the old man died first."

"What of it?" demanded the query editor.

"Why, when the old man died, the young man ceased to be 'junior,' didn't he?"

"Um—ah——"

"And if he did, he was not John Jinks, junr., when he died. Consequently, no John Jinks junr., died at all. That is the way I figured it out, but, of course, a query editor is always right, and if you say that——"

The chairman of the delegation dodged as an inkstand grazed his head and struck the wall, leaving a weird mark which looks like a sign of the black hand.

It may be because I was there and heard the editor's ejaculation, or, that being a puzzlist, such things come easy, or it may be sheer imagination, but when I look at that blotch I can read the editor's last remark just as plain as if it was written in black and white. And I should like to know if it is as clear to other palmists as it is to me.

X'MAS "ZOO" PUZZLE

Here is the famous Zoological Puzzle, which I perpetrated in my youthful days. It is merely a collection of all the birds, beasts, fishes, and creeping things that could be thought of. It is safe to say that every living thing you have ever seen can be found in the picture.

PUZZLE OF THE EDUCATED CATS.

These trained cats have arranged their slates so as to spell the word SPARKLING. One cat picks up its slate and runs away, and the slates then spell an eight-letter word; then another slate is carried away, and then another, and so on until but one is left, but in each and every case the remaining letters without any changing spell a correct word. What are the different words, and can you think of any other longer word with which to perform the same feat?

The above is a remarkable Rebus Puzzle, written by the late George du Maurier, author of "Trilby," to his friend, Shirley Brooks. On May 5 Shirley wrote: Mr. Layard, author of "The Life," found this letter in an Oxford street book seller's shop, and the "Heard from Kiki (du Maurier), a note of symbols—very clever." same has been published in London and is making quite a furore. I was cabled to from London for my views on the subject, and have this to say: "The puzzle deals in matters of such personal and private nature that it is difficult to attack it as one would a Rebus intended for the public at large; nevertheless it is safe to say that the following, which is the reply I cabled to England, is pretty close to the intended answer: "My Dear Brooks, I can not hand ewe by post a long letter to-day, but expect one before long, ewers Kick eye."

Not knowing the date or locality, which I assume to be represented by the sketch at the head of the letter that feature is omitted.

THE TRADER'S PROFIT.

A dealer sold a bicycle for $50, and then bought it back for $40, thereby clearly making $10, as he had the same bicycle back and $10 besides. Now having bought it for $40, he resold it for $45, and made $5 more, or $15 in all.

"But," says a bookkeeper, "the man starts off with a wheel worth $50, and at the end of the second sale has just $55! How then could he make more than $5? You see the selling of the wheel at $50 is a mere exchange which shows neither profit nor loss, but when he buys at $40 and sells at $45, he makes $5, and that is all there is to it."

"I claim," says an accountant, "that when he sells at $50 and buys back at $40, he has clearly and positively made $10, because he has the same wheel and $10, but when he now sells at $45 he makes that mere exchange referred to, which shows neither profit nor loss, and does not affect his first profit, and has made exactly $10."

It is a simple transaction, which any scholar in the primary class should be able to figure out mentally, and yet we are confronted by three different answers. The first shows a profit of $15, such as any bicycle dealer would; while the bookkeeper is clearly able to demonstrate that more than $5 could not be made, and yet the President of the New York Stock Erchange was bold enough to maintain over his own signature that the correct profit should be $10.

Here is a complimentary rebus which an old beau sent to a young lady:

The above little tale, told in eight tableaux, was given some time ago to see who could give the best reading of the same, as well as to originate some clever tales of the same kind.

I will take occasion to say that in my very early youth I developed a faculty for cutting silhouettes, and have had occasion to make likenesses of many of the crowned heads of Europe, as well as of distinguished personages from all parts of the world. I propose at some future day to give some illustrations which became quite noted, but will at present only refer to an amusing incident which befell me at Glasgow, Scotland.

We were discussing the greetings, or salutations, of the different nationalities, and I illustrated the subject with the portraits shown at the foot of the page.

Now let me tell you how the different people say "good-morning."

"How can you?" That's Swedish.

"How do you are?" That's Dutch.

"How do you stand?" That's Italian.

"Go with God, senor." That's Spanish.

"How do you live on?" That's Russian.

"How do you perspire?" That's Egyptian.

"How do you have yourself?" That's Polish.

"Thank God, how are you?" That's Arabian.

"May thy shadow never grow less." That's Persian.

"How do you carry yourself?" That's French.

"Be under the guard of God." That's Ottoman.

"How is your stomach? Have you eaten your rice?" That's Chinese.

And the most ridiculous of all is American: "How do you do?" It does not say what you are expected to do, but just simple, How do you do?"

We were discussing games of skill and chance, when a gentleman from Glasgow said that the Scotch could beat the world at checkers. I accepted the challenge, and played one game with each of the sixteen personages shown below. I lost to the gentleman from Dundee, the one from Dundalk and the one from Dunkirk, but won from all the others.

Now examine the faces carefully, and see if you can pick out the three who beat me!

But speaking about checkers reminds me of another little puzzle connected with the same incident: The discussion of the prowess of the several nationalities resolved itself into a wordy battle which, for lack of a checker board, could not be brought to a practical test, when a solution to the problem was suddenly discovered. A woman was observed in one of the seats wearing a plaid shawl which had been repaired by a remarkable patch!

A shilling was offered to the good woman for the privilege of playing a few games of checkers on this patch, which offer was not only readily accepted, but she cut out and presented us with the piece. But right here comes a most remarkable puzzle. She cut that irregular patch in two pieces, which fitted together so as to form a perfect eight-by-eight checker board! Can you perform the feat?

To prove that the good woman was endowed with her full quota of brains, I will give another puzzle which she proposed.

Observing that we played only on the black squares, she suggested that two more players might engage in a game on the white squares. When we remarked that it would be somewhat inconvenient, she remarked, "Then I would construct a checker board with only thirty-two squares, so that they would all be used."

This is the puzzle: Construct a thirty-two-square checker board which gives every possible combination of the game as it is now played, but do away with those useless extra thirty-two squares.

Then there was another puzzle which I would call to your attention: One game was played and brought to an absolute finish in just twelve moves! If I am not mistaken, it holds the record for brevity of checker play. Can you produce the game?

MR. OWEN'S VALUATIONS.

I leave it to the ingenuity of our puzzlists to figure out a reasonable reply to the following query from a collector of rare old manuscripts. He is not a man who is accustomed to expressing himself in the ordinary, understandable way that most of us choose. He says:

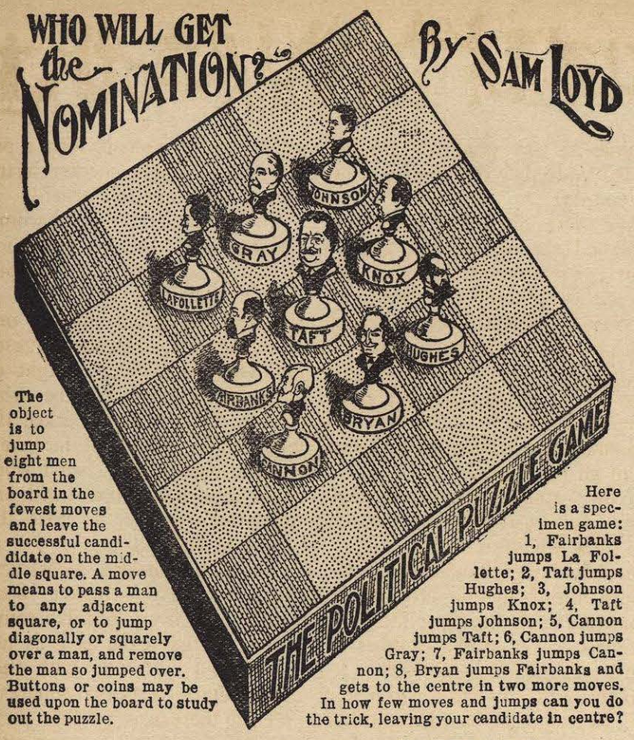
"Regarding the value of all of my letters shown, I would say that two are worth six dollars, ten are worth ten dollars, while none is worth sixteen dollars, while one being worth eleven dollars, I would like you to estimate the value of a TON upon the same basis!

"Respectfully,

"T. OWEN."

WHO WILL GET the NOMINATION?

By SAM LOYD



The object is to jump eight men from the board in the fewest moves and leave the successful candidate on the middle square. A move means to pass a man to any adjacent square, or to jump diagonally or squarely over a man, and remove the man so jumped over. Buttons or coins may be used upon the board to study out the puzzle.

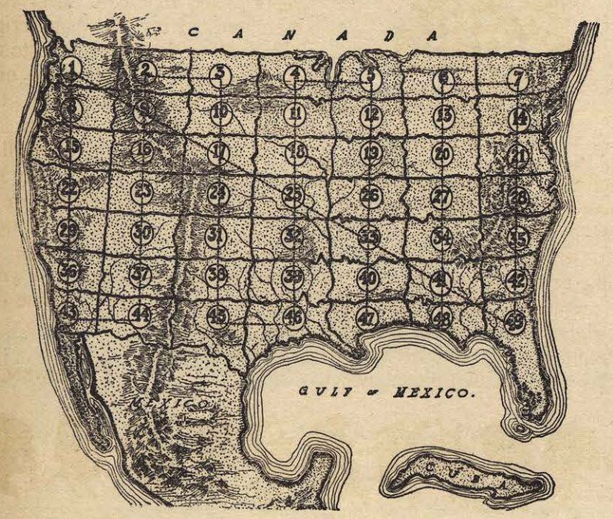
Here is a specimen game: 1, Fairbanks jumps La Follette; 2, Taft jumps Hughes; 3, Johnson jumps Knox; 4, Taft jumps Johnson; 5, Cannon jumps Taft; 6, Cannon jumps Gray; 7, Fairbanks jumps Cannon; 8, Bryan jumps Fairbanks and gets to the centre in two more moves. In how few moves and jumps can you do the trick, leaving your candidate in centre?

During every Presidential election I have issued puzzles for campaign purposes, large quantities of which have scattered all over the country. The above is a souvenir of 1908, which created somewhat of a furor.

Then, after the nominations were made, I gave the Presidential Puzzle which shows the candidate going through the forty-nine states and territories on a stumping tour. The puzzle is to start from any point selected and pass through all the numbers and back to the place of the beginning in the fewest number of straight strokes. The route marked on the map shows how to perform the feat in 14 trips, but it can be done in fewer, and will prove to be a remarkably clever and difficult puzzle.

DECAPITATIONS.

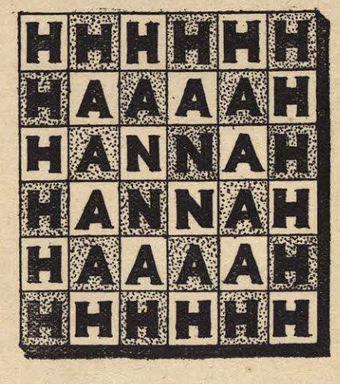
1. Behead a girl's name and leave a boy's name.
2. Behead a kind of gum and leave a girl's name.
3. Behead a garment and leave an insect.
4. Behead a piece of wood and leave part of the body.
5. Behead what all wish to have and leave what we can't live without.
6. Behead a farming tool and leave a small house.
7. Behead a garment and leave a mass of stone.
8. Behead an instrument to show time and leave part of a gun.
9. Behead a weaver's quill and leave a collection of water.



HANNAH

Here is an odd little puzzle in the form of a monogram, as shown, we also discover that we may begin and end at any point, and from that fact of each monogram being susceptible of being read upside down, as well as backwards, the puzzle becomes very confusing to determine just how many ways it can be read so that no two ways will be exactly alike, the only stipulation being that the letters must be adjacent, so that one is not permitted to slip across the diagram.

Here is a similar puzzle:



10. Behead what many like to do and leave a girl's name.
11. Behead one of the months and leave part of a circle.
12. Behead a port, or haven, and leave a bower.
13. Behead an animal and leave part of the head.
14. Behead a part of a chaise and leave part of the foot.
15. Behead a ship instrument and leave a kind of tree.
16. Behead a place for a fire and leave what we live on.
17. Behead a kind of stone and leave a number.
18. Behead a building and leave a vine.
19. Behead the cry of a dog and leave a bird.
20. Behead a plant and leave a reptile.
21. Behead a carpenter's tool and leave a road.
22. Behead a part of a whip and leave a kind of tree.
23. Behead a man's name and leave a vessel.
24. Behead a building and leave a household article.
25. Behead a piece of leather and leave a snare.

BURIED PROVERB.

In each of the following sentences a word is concealed. When the words are guessed, and read in the order here given, they will form a familiar proverb.

1. A naughty cat ran away. 2. They found a closely written roll in gathering up the rubbish. 3. It is the best one that I have ever seen. 4. The rug at her stairway is not a valuable one. 5. He is an old acquaintance of mine. 6. Amos soon saw through the strategem.