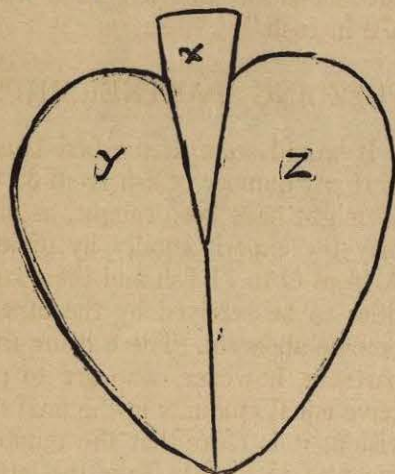


or triangular pyramid, the number of layers will be the same.

To find the number of eggs in a square pyramid multiply the number of eggs on one side of the base by that same number plus one, multiplied by twice the number plus one, and divide by 6. Mathematically expressed in would be $n(n+1)(2n+1)$ divided by 6. To calculate the number of eggs in a triangular pyramid it would be $n(n+1)(n+2)$ divided by 6.

THE RED SPADE may be changed into a heart by cutting into three pieces as shown, and insert the triangular piece below.



PLAYING THE SYSTEMS.

The conditions were according to Lord Rosslyn's system of playing seven times each upon the multiples of 7.

There are one or two ways of varying the answer, but the principle involved is always the same in producing the required result.

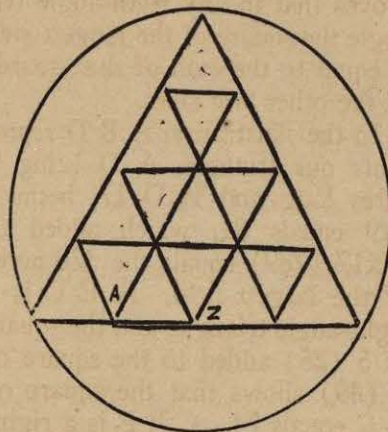
He loses seven single francs in succession, then loses three 7-franc bets and wins four 7-franc ventures, which makes his losses and gains equal.

He then wins twice on 49 and loses five times on the same number, and then wins seven times on 343.

He now loses three times on 2,401 and wins four times, then wins twice on 16,807 and loses five times, and finally wins seven times on the limit of 117,649, so that in all he has won 869,288 francs and lost 91,511, which leaves him just 777,777 francs ahead of the game.

IN ANCIENT GREECE they draw

the symbol in 14 strokes as follows: SOLUTION TO RENT PUZZLE.



THE BURIED CITY is Coblenz.

THE CRIMINAL CLASS buried city puzzle conceals the name Armenia.

THE BOY'S AGE PUZZLE.

The first girl was just 638 days old, and the boy twice as much, namely 1,276 days. The next day the youngest girl will be 639 days old, and her new recruit 1,915 days, total, 2,554 days, which doubles that of the first boy, who having gained one day, will be 1,277 days old. The next day the boy, being 1,278 days old, brings his big brother, who is 3,834 days old, so their combined ages amount to 5,112 days, which is just twice the ages of the girls, who will now be 640 and 1,916, or 2,556.

The next day, the girls gaining one day each, will represent 2,558 days, which added to 7,670 days of the last recruit, brings up their sum total to 10,228 days, which is just twice that of the two boys, which, with the two points added for the last day, would be increased to 5,114 days.

We arrive at the 7,670 days by saying, the young lady having reached her twenty-first birthday, 21 times 365 equals 7,665 plus 4 days for four leap years, and the extra one day, which comes with the twenty-first birthday (which is one day towards the twenty-second year, involving the twentieth century muddle).

In answer to the query how old was that youngest boy, the reply should be 1,276 days.

Those who gave the boy's age as 3 1-2 years entirely overlooked the feature of increasing the ages of the pupils from day to day.

THE MONASTERY TREASURY.

We practically absorb the leap year feature by saying that a year is 52 weeks, 1 day and 6 hours long, which is the same as 52 5-28 weeks long. Now, as it takes just 28 years to make that 5-28 run into even years, we will say $28 \times 52 \times 5 = 28 \times 280 = 7840$ weeks as a perfect circle of years ending with a Saturday. But as we must have a number of coins which can be divided by four or five or six we find that we must have a number of weeks divisible by 60, so we get such a number by multiplying 1416 by 20, which will give 28,320 as a series of weeks divisible by 4, 5 or 6 to suit the piles of coins, and divisible by 52 5-28 weeks, which converts it into 500 years, as representing the correct age of the monastery when the coins were counted.

THE REBUS and CHARADE are Scamp and Decanter.

THE LONDON FOG teaches the moral that it is "vain to aspire."

INVERNESS TO GLASGOW.

Regarding the trip from Inverness to Glasgow, a distance of 189 miles, the difference between the two speeds being one mile per hour, we get x plus a half mile per hour for speed of the stage, and x minus one-half mile per hour for that of the train, which gives the equation $189 \text{ over } x - \text{one-half} - 189 \text{ over } x + \text{one-half} = 12$. Whence $192 \text{ equals } 12 \times \text{sq.}$ and $x \text{ equals } 4$. The speeds, therefore, are 4 1-2 miles and 3 1-2, which shows that the place of meeting was seven-sixteenths of 189, or 52 11-16 miles.

A REBUS.

ANSWER TO MISER PUZZLE.

In this problem it was told that a miser had a hoard of \$5, \$10 and \$20 gold pieces which he could divide into four, five and six parts, each containing similar coins. To do this it has been shown that he must have had not less than 60 coins of each denomination, which would make a total of \$2,100.

THE FOUR ELOPEMENTS.

Contrary to the published answers to the famous puzzle of the four couples who had to cross a river in a boat which would carry but two persons at a time, the feat can be performed in 17 trips, instead of 24. Utilizing the island in the middle of the stream and complying with the conditions that no young lady was to be in the company of any gentleman unless her fiance was present, and no man was to be alone in a boat, if any young lady was left alone, except the one to whom she was engaged.

Describing the young men as A B C D, and the young ladies as a b c d, the 17 trips of the boat can readily be followed.

| Shore | Island | Over. |
|-----------------|--------|-------|
| A B C D a b c d | o | o |
| A B C D c d | o | a b |
| A B C D b c d | o | a |
| A B C D d | b c | a |
| A B C D c d | b | a |

Now the men begin to do some rowing.

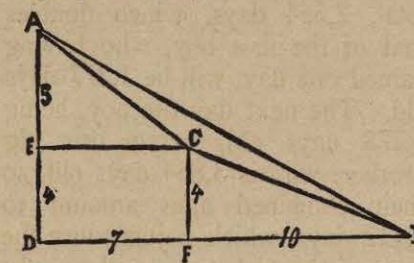
| | | |
|-----------|-------|-----------------|
| C D c d | b | A B a |
| B C D c d | b | A a |
| B C D | b c d | A a |
| B C D d | b c | A a |
| D d | b c | A B C a |
| D d | a b c | A B C |
| D d | b | A B C a c |
| B D d | b | A C a c |
| d | b | A B C D a c |
| d | b c | A B C D a |
| d | o | A B C D a b c |
| c d | o | A B C D a b |
| o | o | A B C D a b c d |

ANSWER TO THE LAKE PUZZLE.

In this remarkable problem we find that the lake contained exactly eleven acres, therefore the approximate answer of "nearly eleven acres" is not sufficiently correct. This definite answer is worked out

by the Pythagorean law, which proves that in any right-angle triangle the square of the longest side is equal to the sum of the squares of the other two sides.

In the illustration A B D represents our triangle, A D being 9 acres long and B D 17, because $9 \times 9 \text{ equals } 81$, which added to $17 \times 17 (289)$ equals the 370 acres of the largest field. A E C is a right-angle triangle, and the square of 5 (25) added to the square of 7 (49) shows that the square on A C equals 74. C B F is a right-angle triangle, which shows that the square of its sides 4 and 10 prove the square estate on B C to equal 11 acres. The area of our triangle A D B is clearly the half of 9×17 , which equals 76.5 acres, and as the areas of the oblong and two triangles can plainly be seen to be 65.5, we deduct the same from 76.5 to prove that the lake contains exactly 11 acres.



ANSWER TO BEATING THE RECORD.

In that trotting match puzzle it can be shown that the four quarters were trotted respectively in 27 1-4, 27, 27 1-8 and 27 1-8, made in the record time of 1 min-which proves the mile to have been ute and 48 1-2 seconds.

ANSWER TO THE HAM PUZZLE.

Many puzzlists and good mathematicians will be surprised to learn that he started off with fifty-five hams. Let us prove the answer and find out how much he received for them.

The first person he met purchased half his stock and half a ham, which disposed of twenty-eight hams for \$35. His next customer took half of his stock and half a ham (fourteen hams), and directed him to another place, where he disposed of half of what remained and half a ham, which

would be seven more, which leaves him with six hams and \$61.25 cash on hand.

The landlady then buys half of his stock and half a ham, which would be three and a half hams, for which she must pay \$5, as the half a ham cost as much as a whole ham.

He then met the hotel man, who, out of the remainder of two and a half hams, "took half a ham and the half of what remained, which would be a ham and a half, for \$2.50, leaving just one ham, which was purchased by the friend, who took half of what was left and half a ham, for \$1.25, which cleaned out his stock and left him with \$70 in cash."

PUZZLING PARTNERSHIPS.

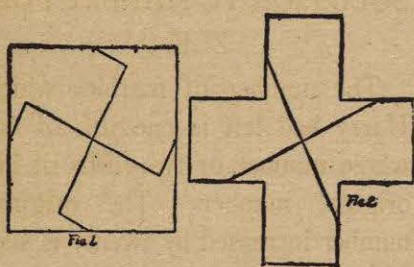
It would seem at the first blush as if any number of fish from 33 to 43 might have been caught, as one may try experimentally by giving A from O to 11 fish and the quantities to be received by the others become apparent. There being five partners, however, who are to receive equal amounts in the final division, it is clear that the number must be 35 or 40. Take the latter number and it readily solves and shows that A had 8, B 6, C 14, D 4 and E 8. Now if B, C and D pool their issues, making 24, each gets 8, after which no matter how many join and then divide their stocks, the shares remain 8, but if any number is experimented with, even if the fish could be chopped up, it resolves itself into an odd complication.

WEARY WILLIE PUZZLE.

Willie had traveled 72 miles and Dusty only 54 when they first met, so the distance from Joytown to Pleasantville was 126 miles.

ANSWER TO EASTER MORN.

In this pretty puzzle, which, as may be seen, is closely allied to the Red Cross problem, there are to be four pieces, which will fit together and form the symmetrical Greek cross. The following figures show the manner of cutting and placing the pieces together:

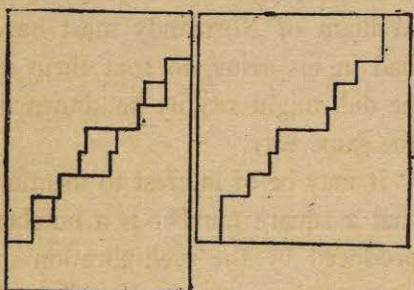


ANSWER TO THE MESSENGER BOYS PUZZLE.

It will be found that Harry started with 30 cents and Jimmy 48, and at one time had doubled his pile to 60, which left Jimmy with 18, who then plunged and had 36. It behooved Harry, therefore, to return Jimmy just 12 cents.

ANSWER TO CHINESE PUZZLE.

The following diagrams show the manner of cutting the prisoner's board into two pieces which can be fitted together so as to form a perfect square. The ingenious trick which was referred to as making it difficult to locate the exact position of the openings turns upon the odd niches which were hidden by his head.



UNCLE SAM'S FOB-CHAIN PUZZLE.

Mathematicians and puzzlists who revel in the mysteries of permutations and possible combinations, have computed that no less than 92,160 different fob chains could be made from four coins and the pendant eagle, so that no two could be exactly alike.

It is evident that the large coin could be suspended from any one of the five holes, and with either side toward you, which would make ten possible changes. As the five-

cent piece can be placed in eight positions, these two alone would represent eighty combinations, which, multiplied by the six positions of the cent piece, and again by the four changes of the dime, and by two positions of the eagle, would show that in the order of size in which they are now strung there could be 3,840 changes made, as there are twenty-four different strings of coins to be made, by merely changing the order of the coins according to their size, 3,840 x 24 gives 92,160 as the correct answer to the puzzle.

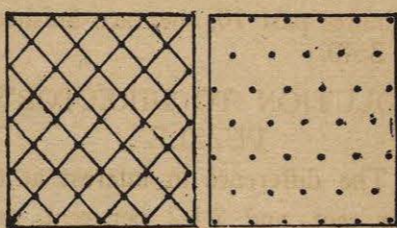
BANANA PUZZLE.

The amount of money was 336 shillings. This would buy 48 bunches each of red and yellow, 96 in all, but 168 shillings would buy 56 bunches of yellow and the other 168 would buy 42 bunches of red, 98 in all. The difference between three-sevenths and one-half which is one-fourteenth is an amount which would buy two more at three shillings than it would at four, which amount is twenty-four shillings.

Therefore, if one-fourteenth of the money is 24 shillings, the whole amount must be 336 shillings.

THE INQUISITIVE CHILD said because it is past your age.

Referring to the problem of Martha's Vineyard, wherein it was required to tell how many grape vines, not closer than nine feet apart, can be set out in a square plot just one-sixteenth of an acre in size, it may be assumed that all hands found that the plot would not be large enough to get more than 36 vines in the regular rows. By drawing a line on the bias, from one corner to another, and crossing and paralleling the same, it will be found that 41 vines can be planted, a little over nine feet apart, and well within the fence line, while on the other hand, to plant the first row of six vines on the base line, and a second row 7.77 feet above with but five vines, and the next with six, etc., arranged upon the pattern of an equilateral triangle, we could plant but thirty-nine vines.



COUNTING CHICKENS.

People who count their chickens before they are hatched are so reckless with figures that it was to be expected that out of the many answers received to that poultry problem very few of them would have seen the young couple through their wedding expenses, to say nothing about the \$3,000 mortgage which had to be met on the third year. To show, however, that their calculations were all right, we will explain that Claude started off with twelve chickens, of which ten were hens, so that with the spring came ten broods of a dozen little chicks, half of which being hens, he would have now altogether seventy hens and sixty-two gentleman chickens. He would sell off forty-eight broilers, so as to always keep the same ratio of the sexes. The second spring he would have seventy broods of a dozen each, which would add 420 hens to his poultry yard and give him 336 broilers to sell for household expenses. He would then have 490 hens and 98 roosters, so with the next hatching of 5,880 plus 490 hens and 98 roosters he would have the required 6,468 wherewith to pay off the mortgage.

It will be seen that twelve eggs represents the number furnished by each hen, and that at each hatching the number of male and female little chicks are equal, and enough of the young roosters are sold to maintain the ratio of 10 to 2.

IN THAT YACHT RACE it will be found that the first leg of the triangle was sailed in 80 minutes, the second in 90 and the last in 160, making in all five and a half

hours; so if the boats started at 9 minutes past 10, the race finished at 3:40.

SOLUTION TO DIRECTOR'S PUZZLE.

The difference in interest at 6 per cent. and 7 1-2 per cent. on \$4,000,000 is \$60,000, which is equal to 1 per cent. on the common stock. Therefore there must have been \$6,000,000 worth of common stock.

DROP LETTER PUZZLE, "To be wroth with one we love, doth work like madness in the brain."

THE EXPRESS PUZZLE.

The answer to this paradoxical problem is the shortest reply to the many correspondents who claim that it is impossible of solution.

It was told that the belle of the Mining Camp had received two square boxes by express. One of the boxes is visible and the other is concealed in the wagon; but we are told that they are both perfectly square and that one is just twice as high as the other. It was further explained that the expressman wished to collect according to the cubical contents of the boxes, but that the miners objected and proposed paying according to the length of the boxes per running foot.

The expressman had demanded the rate of \$5 per cubic foot, and when he compromised and accepted \$5 per running foot it was discovered that there was not the thousandth part of a cent difference in the two ways of charging. Hence the question of the puzzle: What were the sizes of the two boxes?

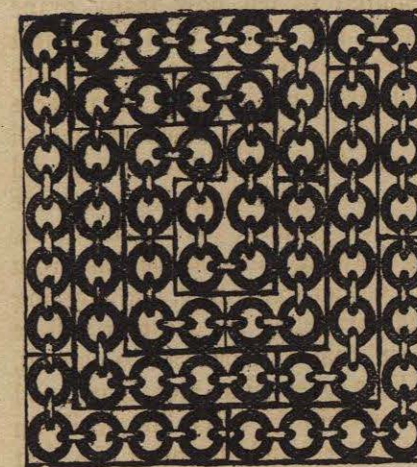
The larger box must be 13,856 inches square and the smaller one is 6,928 inches wide. The two together would measure 20,784 inches, which at \$5 per running foot would amount to \$8.66. We then ascertain that the two boxes would contain 2,992 cubic inches, which

equal 1.732 cubic feet, which, at the rate of \$5 per cubic foot, would also amount to \$8.66.

In that interesting problem of the reapers who cut a swath round and round a square field until half the crop was gathered, I find that they had a simple rule which can be applied practically without any knowledge of mathematics. They said that "one-quarter the difference between a short cut cross lots, and round by the road, gave the width of the strip round the lot which took half the field." All of which requires a little explanation to make clear to mathematicians, who will understand it better when we say: from the sum of the two sides subtract the diagonal and divide the remainder by 4.

The field was 2,000 yards long by 1,000 wide, so by the aid of a tape line the farmers found that diagonal line, cross lots, from one corner to another, was a little over 2,236 yards, while to go "round" by the road, of course, was 3,000 yards, so the difference would be a little less than 764 yards. One-quarter of which would be just a little shy of 191 yards. So the honest farmers staked off a swath all round the field that width (190.-9831) and found that it gave to each an equal share of the crop.

ENDLESS CHAIN PUZZLE.



CONCEALED GEOGRAPHY: Venice, Corinth, Malta, Newark, Salamanca, Balbec, Palmyra, Seringapatam, Bethsaida, Missolonghi, China, Rome, Athens, Hanover, Stow, Verona, Geneva, Gorham, Athol, Normandy, Chester, Colorado, Ebro, Rhine and Rhone.

SOLUTION TO MARBLE PUZZLE.

The number of marbles which Harry had left is one-fifth of the whole number or two-fifths of his original number. The original number increased by twenty is six-fifths and twenty is one-fifth of the original number. Therefore, each of the boys must have started with just one hundred marbles.

THE BATTLE OF HASTINGS PUZZLE.

There seems to be such a unanimity of opinion among our historian puzzlists regarding the number of men in the eventful battle of Hastings, which occurred Oct. 14, 1066, that I am inclined to accept their account of the deployment of troops as being correct. They estimate that Harold had thirteen squares of 180 men on each side, which would give 180x180x13=421,200 men. This number, with Harold added, would form one great square with 649 men on the sides. Just how many men William of Normandy must have had in his army, to rout them as he did, might readily be shown in the same way.

It may be of interest to mention that a square number is a number produced by the multiplication of any number into itself: Thus 4 multiplied by 4 is equal to 16, and 16 is consequently a square number, 4 being the square root from which it springs. The extraction of the square root of any number takes some time, and after all your labor you may perhaps find that the number is not a square number. To save this trouble, it is worth knowing that every square number ends either with 1, 4, 5, 6 or 9, or with two ciphers, preceded by one of these numbers.

Another property of a square number well worth mentioning is that if it be divided by 4, the re-

mainder, if any, will be 1. Thus, the square of 5 is 25, and divided by 4 leaves a remainder of 1; and, again, 16 being a square number, can be divided by 4 without having a remainder. It must be understood, however, that whereas square numbers show that peculiarity, other numbers, like 20 or 21, etc., are not square numbers, although divisible by 4, etc.

SOLUTION TO CHICKEN PUZZLE.

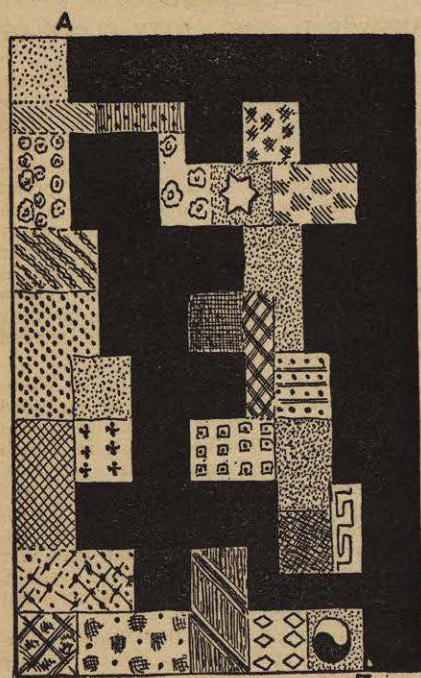
Josiah and Mariah must have had 300 chickens, with feed enough to last sixty days.

Multiplying 300 by 60 gives the number of individual daily chicken meals as 18,000. Should Mariah's suggestion be followed, and 75 chickens sold off, then 225 divided into 18,000 shows that the feed would last 80 days, whereas if Josiah purchased a hundred extra fowl, 400 divided into 18,000 gives 45 as the number of days the stock would last.

PUZZLELAND MOTHER GOOSE.

Twice 4 equals 8, and 20 equals 28, so if one-seventh, the four dead ones, remained, the rest flew away.

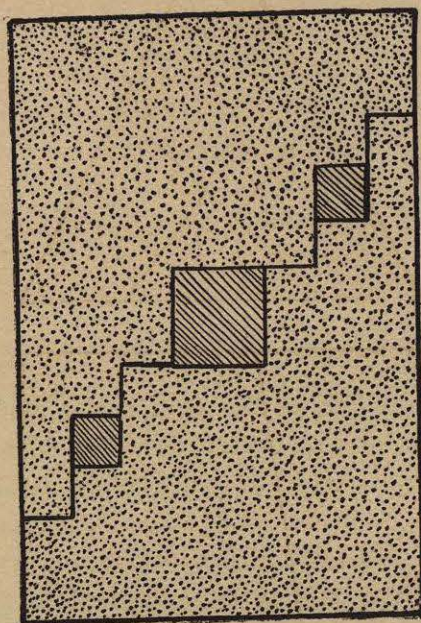
CHARADES, Sunlight, Looking Glass, PUZZLELAND cutting puzzles.



Cut on line from A to Z. THAT LOBSTER PROBLEM.

Lobsters are first sold for eight shillings a dozen, which would be the same as forty-eight shillings for six dozen, or thirty-two shillings for four dozen, as stated. Therefore, whether we are talking English or United States money,

the cost of a single lobster would be just two-thirds of a shilling.

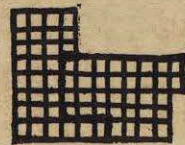


SUBSTITUTION PUZZLE, Shriek. CHARADE, Pageant. IN PUZZLELAND shows 31 Triangles. The answer to Solomon's Seal is given in Ancient Greece.

SOLUTION TO ENGINEER'S PUZZLE.

From the engineer's statement, we learn that had he gone 50 miles at full speed, instead of at three-fifths speed, he would have saved 40 minutes. He could have gone 83 1-3 miles at full speed in the same time that it required to go 50 miles at three-fifths speed. Thus he would have saved 33 1-3 miles. If at the same time he saves 40 minutes, then 33 1-3 divided into 40 gives 1 1-5 minutes as his time per mile going at full speed. It is clear that, being reduced to three-fifths of his speed, he would lose four-fifths of a minute every mile, and therefore would have to go 150 miles to lose 2 hours. Thus he went 50 miles at full speed and 150 miles at three-fifths speed, and his entire run was 200 miles.

CHARADE, CARMINE. Puzzleland Gingerbread cuts:



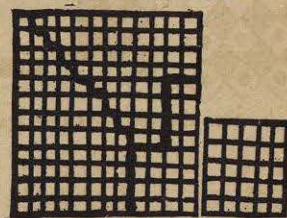
MIXED TEA PUZZLE.

If the Chinese merchant gave his customers a square deal he must have used 30 pounds of the five "bit" tea and 10 pounds of the three "bit" in his forty pounds of mix-

ture, which sold at six "bits" per pound. The cost price being 180 "bits" and the selling price 240 "bits," he gained 33 1-3 per cent. CHARADE IS HATBOX. CHARADES Old Maids, Steelyards. ANSWER TO STAGE PUZZLE.

From the hotel to the wayhouse was 6 miles and from there to Picketown 3 more, so, if the traveler took the stage to the wayhouse and then walked to Picketown he would beat the stage 15 minutes.

TWO FROM ONE.

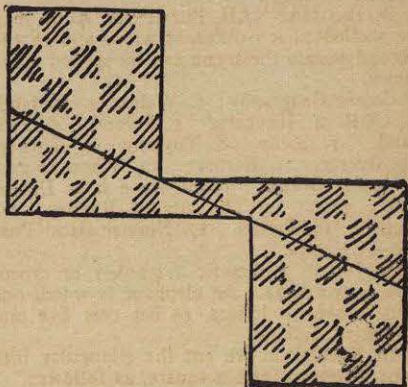
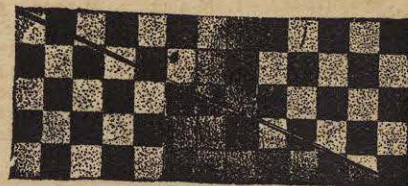


THE MATHEMATICAL MILKMAN started with five and a half gallons of water in Can No. 1, and two and a half gallons of milk in Can No. 2, after the manipulations described he had three gallons of water and one gallon of milk in Can No. 1 and one and a half gallons of milk and two and a half gallons of water in Can No. 2. In the second proposition the first mixture is 40 to one and the second one to 40.

ANSWER TO MILK PUZZLE.

The milkman delivered altogether 87 1/2 quarts of pure milk to his customers. Street No. 1 received 32 quarts; No. 2, 24 quarts; No. 3, 18 quarts, and the last street only 13 quarts and a pint.

PUZZLELAND CHESS BOARDS.



In the Xmas "Zoo" puzzle there are 108 different animals!

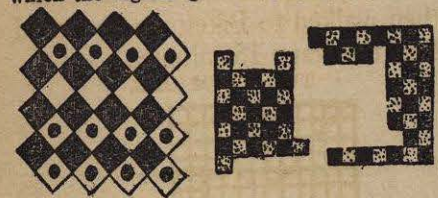
In the educated cat puzzle, the words are: Sparkling, sparkling, sparing, spring, sprig, prig, pig, pi, I.

The complimentary rebus which the old beau sent to the young lady reads: A chin well rounded is a charming feature.

In that silhouette puzzle of the checker players: The 7th is the French gentleman from Dunkirk, the 11th a Scotchman from Dundee and the 15th is from Dundalk, Ireland.

Here is the way of cutting the checkered pattern in two pieces which will fit together so as to form a square:

Here is the 32 squared checker board on which the regular game may be played:



Here is the shortest possible game of checkers:

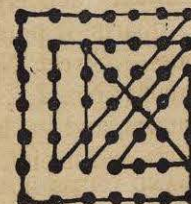
- 1. 24 to 20. 2. 28 to 24. 3. 22 to 19. 4. 21 to 17. 5. 19 to 15. 6. 26 to 22. 7. 22 to 19. 8. 29 to 26. 9. 26 to 21. 10. 30 to 26. 11. 32 to 28. 12. 26 to 22. 1. 12 to 16. 2. 9 to 13. 3. 11 to 14. 4. 14 to 18. 5. 5 to 9. 6. 7 to 12. 7. 3 to 7. 8. 7 to 11. 9. 11 to 14. 10. 1 to 5. 11. 4 to 7. 12. 7 to 11 wins.

Regarding the value of the letters of T. Owen, just number them consecutively T1, O2, W3, E5, and N6: then the T W and O are worth 6. TEN equals ten.

NONE is worth 16, while a TON amounts to 8.

In the Nomination Puzzle Taft jumps Knox, Johnson, LaFollette and Cannon in succession. Gray jumps Fairbanks. Hughes jumps Bryan. Gray jumps Hughes and Taft jumps to the centre.

Here is the answer to the Presidential Puzzle, which is a wonderfully difficult trick:



Decapitations.—1. M-abel. 2. M-anna. 3. B-louse. 4. C-hip. 5. H-air. 6. S-hovel. 7. F-rock. 8. C-lock. 9. S-pool. 10. S-kate. 11. M-arch. 12. H-arbor. 13. B-ear. 14. W-heel. 15. H-elm. 16. H-earth. 17. H-one. 18. S-hop. 19. H-owl. 20. M-adder. 21. P-lane. 22. L-ash. 23. M-ark. 24. S-table. 25. S-trap.

A buried proverb says: A rolling stone gathers no moss.

In the HANNAH Puzzle the name may be spelled 14,400 different ways, and in the second puzzle the name can be spelled 4,624 times.

Comic Geography: 1. Wales. 2. Ire-land. 3. Chili. 4. Hungary. 5. Poland. 6. Fin-land. 7. Sicily. 8. Tuscany. 9. Turkey. 10. Greece. 11. Barbary. 12. When he gets to lower Guinea. 13. Because it is Dublin every year. 14. The city of Rheims. 15. Rouen. 16. Berne. 17. Numismatical Puzzle.—Calcutta.

In Jungle arithmetic a monkey or crocodile is worth \$2. An elephant is worth one and one-third dollars, so bet cost five and one-third dollars.

In Puzzleland we cut the triangular into four pieces to form a square, as follows:

SOLUTION TO TROLLEY PUZZLE

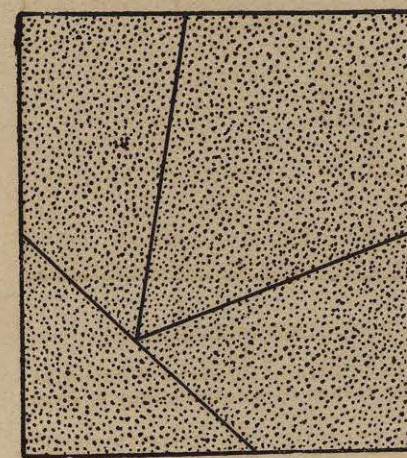
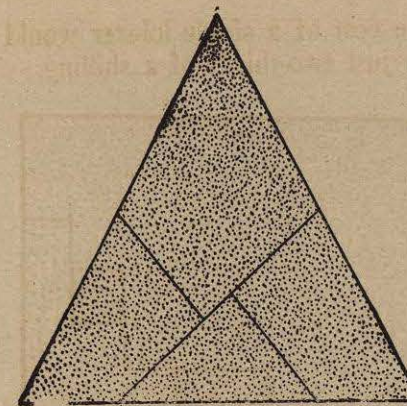
Charley Smallcash and his best girl could trolley three times as fast as they could walk. Therefore, three-quarters of their outing time was spent in walking, and but one-quarter in riding, since they had to walk back. They rode for two hours, going 18 miles, and walked back in six hours, thus consuming their eight hours.

On that "no smoking allowed" sign we read the words: nose, mow, noon, no, one, nod, don, noose, ogle, owed, sled, smell, smoke, smile, soil, sing, singe, skin, singe, sin, snow, saw, sow, snowed, soiled, soil, sill, mow, mill, mile, mired, mire, mood, old, male, me, mad, mew, mired, slow, sole, skill, do, single, sad, sod, ill, glowed, gibe, called, gad, God, gale, know, awe, noll, we, wed, mingled, and many others.

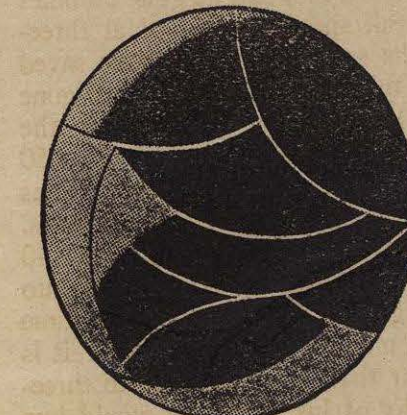
The Perfect Numbers below 10,000 are 6, 28, 496, and 8128.

The precocious little chicken gets one worm out of every thirty-six. Papa keeps twenty-four, the mamma keeps six and gives six to the sixteen chicks; but as that little broiler is equal to three, he represents three-eighths of six, which equals one.

Here is the way the little chicken is divided to make a perfect egg:



Here is the way to fit the sun spots together:



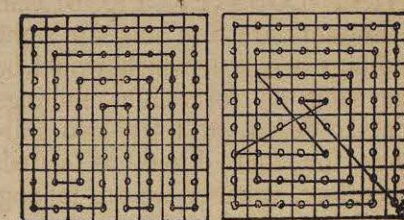
ANSWER TO THE CRAZY CLOCK OF ZURICH.

It calls for a very pretty bit of calculation to prove that if the hands of a clock are started at 6 o'clock, with the hour hand running upon the pinion of the minute hand, as explained in the story of the crazy clock of Zurich, that the dial will show the correct time of the day at 5 minutes, 27 and 3-11th seconds past 7. The problem yields readily to mathematics after one has mastered the principle upon which it is based, but it would be a difficult, if not impossible, task to obtain a correct answer by experimenting with a watch, according to the method which naturally suggests itself.

In regard to that freak bill in the Washington store window, it may be explained that the face of a bill is the promise to pay; the back of a bill—like the curl in a pig's tail—is purely for ornamental purposes. Not unfrequently a person gives a note and afterward gets additional loans until the paper becomes covered with promises to pay. The government has ruled that there are two promises to pay on the bill in question, and has offered to pay both the twenty-dollar and ten-dollar claims.

Some good advice by the Bishop of Oxford says: Watch over your heart to keep out all vice.

Peter the Postman followed the following route:



THE BOTANICAL TREE-TICE.

- 1. The Tea tree. 2. Hop vine. 3. Beech. 4. Bee. 5. India-rubber. 6. Bay. 7. Pine. 8. Yew (You, not I). 9. Fig. 10. Date. 11. Bass. 12. Honeysuckle. 13. Judas. 14. Peach. 15. Fir. 16. Bon Chretien. 17. Broom. 18. Cypress. 19. Nightshade. 20. Breadfruit. 21. Orange. 22. Olive (O-live). 23. Hound. 24. Lime. 25. Linden. 26. Box. 27. Dogwood. 28. Aspen. 29. Rose. 30. Sloe. 31. Plane. 32. Tulip. 33. Spruce. 34. Tiller-tree or elm (helm). 35. Sycamore. 36. Poplar. 37. Southernwood. 38. Ivy. 39. Scrub oak. 40. Burning bush. 41. Hazel. 42. Lilac.

GEOGRAPHICAL REBUSES.

Coneord, Madagascar, Marblehead and Salem.

