

FOUR DIMENSIONAL ROBBERIES

by Bob Olsen

Author of "Four Dimensional Surgery," etc:



WHEN you are told that more than a billion dollars worth of bonds and other valuables were stolen within a few weeks from safe deposit boxes throughout the United States, you will realize how imperative it was that the criminal responsible for these stupendous robberies should be apprehended as quickly as possible.

The true state of affairs never became generally known, of course. Had even the slightest inkling of the tremendous and far-reaching effects of the thefts leaked out to the public, it would undoubtedly have caused the most disastrous panic in the history of the world.

You can easily imagine what would happen if it were suddenly discovered that a safe deposit vault—which has always been universally accepted as the one and only place where valuables may be stored with absolute safety—was no longer immune from theft. Though this fact was known only to a few persons, that was exactly the situation that obtained at the time I learned the truth about the great safe deposit robberies.

That I happened to be drawn into this extraordinary case was as fortuitous as some of the other preposterous things which had happened to me within the preceding few months.

Possibly you already know about the Hyper-Forceps, which I constructed under the direction of Professor Banning, the eminent authority on Four Dimensional Mathematics.* With this device it was possible to grasp an object and, by moving it through the fourth dimension, lift it from inside a closed receptacle without in any way disturbing the container. It was designed specifically for removing gallstones and foreign substances from within a person's body without cutting the patient's skin.

You will recall that it was during an attempt to perform an operation of this sort that the Hyper-Forceps was caught by some mysterious cosmic force and was snatched into four dimensional space, drawing with it the bodies of Doctor Paul Mayer and his patient, Professor Banning. Thanks to quick thinking on the part of Doctor Mayer, with a slight amount of assistance from me, a tragedy was averted and the two wanderers into hyper-space were brought safely back to our three-dimensional world.

One might reasonably suppose that a harrowing ex-

perience like this would suffice to deter Professor Banning from any further inclination to experiment with the mysteries of four-dimensional phenomena, but such was not the case. He insisted that he was pledged to devote his entire sabbatical year to the development of four-dimensional surgery and other practical applications of hyper-spacial theory, and nothing—not even the risk of annihilation—could induce him to deviate from his plans.

However, he did consent to take a protracted vacation—an indulgence which he had not enjoyed for over six years. It was characteristic of the man that he chose to visit England, France, Austria and Norway, chiefly for the reason that in each of these countries there was an eminent scholar who had done original work in developing four-dimensional mathematics.

This left me with little to do, although I was still under contract to assist Professor Banning and Doctor Mayer for the remainder of the year. I offered to cancel the agreement and even urged them to release me, but this they declined to do. Professor Banning insisted that as soon as he returned from abroad he intended to resume his experiments in the practical applications of four-dimensional mathematics and that he would need me to help him carry out the mechanical details of his work.

I was told to take two months' leave of absence on full pay. Professor Banning gave me permission to use his books, including one of the most complete libraries on hyper-space that has ever been assembled, and suggested a course of reading for me, but he did not insist on my doing this. In fact, it was left entirely up to me to decide how I should occupy myself during his absence.

Up to this time, my experiences with four-dimensional devices had in some respects been rather unfortunate. Yet I could give them credit for putting me

in close touch with these internationally famous men, namely: William Sidelberg, Professor Banning and the two Mayer brothers.

It was about a month after Professor Banning's departure that Great Man Number Five appeared on the scene. He was none other than William Dern, head of the great detective agency that bears his name.

"Two gentlemen in the lobby to see you," was the phone message I received from the clerk in the Winchester Hotel.

Taking it for granted that they were reporters, I said, "Send them up."

*"Four Dimensional Surgery," published in the February issue of AMAZING STORIES.



With both hands, the man manipulated the handles of the instrument until the jaws seemed to melt right into the thick steel walls of the vault. After a few seconds of probing, he withdrew the jaws of the Hyper-Forceps. Between them dangled a tin box which had been drawn right through the locked door of one of the safe deposit compartments.

After introducing himself, Dern presented his companion, who turned out to be Timothy Clancy, one of Dern's most experienced lieutenants.

Dern, a polished gentleman of forty-five, dressed in faultless taste, did not look at all like the conventional detective of fiction and the movies. Clancy came much closer to the commonly accepted idea of "Stealthy Steve, the Six-Eyed Sleuth." He wore a derby hat tilted over one eye, and was constantly chewing on a long, black cigar. During the subsequent weeks that I associated with Clancy, I rarely saw him without his hat on and a cigar in his mouth, yet never once did I catch him with his stogie lighted. He was one of those "dry smokers" who chew an unlighted cigar until it looks as if it had been laundered in the family washing machine and run through the wringer. When it became too macerated to hold comfortably in his mouth, he would throw it away and start mangling a fresh one.

I must confess that I got quite a turn when I learned the identity of my visitors. Not that I had anything on my conscience, but I have heard so much about innocent persons being "framed" or otherwise caught in a net of circumstantial evidence, that I couldn't help wondering just what crime I was suspected of having committed.

Instead of setting me at ease, the opening words of the great detective only served to accentuate my anxiety.

"I suppose you know all about the big safe deposit robberies?" Dern began.

In an attempt to cover my nervousness with badinage, I answered, "I'm like Will Rogers—all I know about crime is what I read in the papers. To tell you the truth, I haven't been interested enough in these robberies you speak of to read more than the headlines."

"In that case I'd better give you some of the details. You'll need to know them in order to get what we're driving at. For instance, it may interest you to learn that the total value of property which we know has been stolen from safe deposit vaults during the past three weeks—probably by one person—amounts to over a billion dollars."

"A billion dollars stolen by one individual in three weeks!" I exclaimed. "Why, that's inconceivable!"

"Sure sounds fishy, I have to admit. But nevertheless it's true. And for all we know the amounts we have been able to check up may be only a small fraction of the sums that have been taken without the owners knowing about it. As you probably know, a lot of people don't go near their safe deposit boxes except two or three times a year when interest coupons on their bonds fall due. And since the banks can't open the boxes until the customers call in person, there's no way of knowing how much more may have been taken from boxes, which have not been opened recently."

"But what have I to do with all this?" I interposed.

"I'm coming to that in a minute. First let me give you the high lights of the case. So far as we know, the first of the safe deposit robberies happened at the Utility National Bank of Milwaukee. Not so far from here, you'll notice."

I STARTED to ask him if he meant that for an insinuation, but he hurried on.

"Except for an accident, it might not have become known for some time after it happened. We have reason to believe, however, that one of the robberies at the Milwaukee bank was discovered the same day it happened.

"It started with the finding of a life insurance policy for ten thousand dollars in the waste-basket inside the vault. The man whose duty it was to unlock the boxes for patrons, discovered it just before closing time. He took it immediately to the clerk in charge of the safe deposit counter, who went through his records and found that the man whose name was on the policy had not opened his box for over a month. He got the customer on the phone and told him his policy had been found in the basket. The next morning, the owner opened his safe deposit box and found it absolutely empty. Approximately twenty thousand dollars worth of bonds had been removed from the box.

"Within the next few days several other renters reported thefts aggregating about half a million dollars.

"We were called into the case at the very outset, so we were able to get a complete record of everything that had happened to date.

"At first it looked like an inside job. Maybe you've heard of a similar series of robberies that happened in Los Angeles about three years ago. We hung that on the bank employee who had the job of opening the customers' boxes.

"Of course you know how a safe deposit vault is run?" he digressed.

"To tell you the truth, I do not. Since I never owned a bond or anything else worth safeguarding, I haven't had occasion to familiarize myself with the procedure employed in a safe deposit vault."

"Maybe I'd better explain it then. When you rent a box, you get two keys which are duplicates and are the only ones in existence that will open your box. Even the company that installed the vault is not able to make a third key that will fit your lock. If you lose one key, you can have a duplicate made from the other one, but if both keys become lost at the same time, the only way to open your box is to force the door, which is a long hard job. This destroys the old door and necessitates installing a new door with a new set of keys.

"Ordinarily, when you first rent a box, you would put one of the keys on your key-ring and, if you happened to be married, you would hand the duplicate key to your wife, so if you got drowned at sea or disappeared, she could open the box. The bank keeps on file a card with your signature and that of your wife or other person authorized to open the box.

"Before you are allowed to enter the vault, you have to sign a slip in the presence of the attendant and this slip is compared with the signature on file. If someone happened to find or steal your key, the only way he could use it would be by forging your signature while the bank employee is watching him—a thing which is extremely difficult, if not impossible.

"As an additional precaution, each box has two key-holes, one for your private key and the other for a master key kept by the bank. Neither key alone will unlock the box, but when both the bank's key and yours

are turned in the lock, the door of the compartment opens. The valuables are contained in a tin box which may be removed and taken to a table in the middle of the vault, or, in case a customer wishes privacy, he may go into a small room or closed booth adjoining the vault.

"When the attendant unlocks your box, he immediately removes the bank's master key, but leaves your key in the lock. On replacing your box, you close the door and turn the key, thus locking the compartment. So you see that, while the bank's key is needed to unlock the door, only your own key is needed to lock it. Is all that clear?"

I assured him that it was. He continued thus:

"The method used by the bank employee in Los Angeles was so simple that it's funny no one ever had thought of it before. He would notice the customers that were in the habit of taking their valuables into one of the private booths and staying there for some time. When, as it frequently happened, the vault was unoccupied while one of these customers was going through his papers, the bank attendant would remove the customer's key, make a wax impression of it, and quickly put it back in the lock again.

"From this wax impression he would file out a duplicate key, and the next time he was alone in the vault, he would open the patron's box and rifle it of its contents, after which he would lock it. In this way he lifted about a hundred thousand dollars worth of bonds, but we set a trap for him and finally landed him in jail.

"A confidential report of this case was sent to the president of every bank in the country and practically all of them adopted the rule of requiring all customers who left the vault to take their keys with them. That rule was being enforced in the Milwaukee bank at the time the big robbery took place there, so the wax impression scheme could hardly have been used. Another thing that made us give up the idea that this was an inside job was the fact that the only person who was in a position to pull anything of this sort was the man who had reported finding the insurance policy. Naturally, if he were a thief, he would have known better than to throw the policy in the waste-basket and even if he had been such a dumb-bell, he certainly would not have reported it to the bank officials.

"At that, we put the poor guy through the third degree and checked up on his private life and the amount of money he had been spending, but we couldn't get anything on him.

"Just about this time, five other banks—four in Chicago and one in Detroit—reported similar robberies and we knew at once that the jobs were being pulled from the outside and that we had to deal with one of the cleverest and most dangerous crooks that ever lived."

"But surely, you don't suspect me!" I blurted out.

Dern grinned and Clancy laughed out loud.

"Say, kid," the latter chuckled, "didn't you hear the chief say that this guy is one of the cleverest and most dangerous crooks that ever lived? You don't think that picture fits you, do you?"

"Oh, I see what you are driving at. You don't think

I'm clever enough to be a crook," I said in rejoinder.

Clancy opened his mouth for a comeback, but Dern cut him short. "Shut up, Clancy, and let me do the talking."

To me he said, "Don't mind him. I'm sure he didn't mean anything by that crack." Then, with a twinkle in his eye, he again addressed his assistant. "You know, Clancy, sometimes these college guys are smarter than they look. Remember the D'Autremont case? If it hadn't been for the accurate description of the crooks which a California professor doped out of an old pair of overalls, we'd never have caught those birds.

"But to answer your question," he resumed. "Of course we don't suspect you. I don't mind telling you though that we did check up on you—just as a measure of precaution. But, since you have not been outside of Winchester for over three months, you have an iron-clad alibi and a clean bill of health. The reason we came to you is that you are an expert on the fourth dimension."

I protested: "I'm afraid you have been misinformed. I know a little bit about hyper-space, but hardly enough to be called an expert."

"But didn't you invent some kind of jigger for taking out a man's gizzard without opening him up?"

"You mean the Hyper-Forceps. But it wasn't my invention. I merely helped Professor Banning work out the mechanical details of his idea. Furthermore, since it was just a forceps or device for picking up articles and had no cutting edges, it could be used only for removing unattached articles like foreign substances and gall-stones."

"Nevertheless, you may be able to help us. Perhaps we are on a wild goose chase, but we have learned that in tracking criminals, we can't overlook even the most insignificant clew or the most improbable possibility, if you know what I mean.

"Our coming to you was suggested by a newspaper story. In referring to the lack of any satisfactory explanation of the series of robberies, the reporter said, 'the robber must have worked through the fourth dimension.'

"All I want to find out from you is whether it would actually be possible for anyone to remove the contents from a safe deposit box without opening the door."

"As easy as shooting fish," I assured him. "I could do it myself with the Hyper-Forceps."

"The hell you could!"

This was from Clancy.

"Excuse me, Mister Clancy," said Dern in a sweet tone of voice, "but suppose you try keeping your ears open and your mouth shut." Then, turning to me. "Please pardon the interruption. You were just saying that with the Hyper-Forceps you could remove the contents of a safe deposit box without opening the door. Would you mind explaining just how this astonishing thing could be done?"

"Not at all. Simply by moving it through the fourth dimension. Are you familiar with the fundamental principles of hyper-space?"

"I'm afraid not, although I have read the two magazine stories which you wrote on the subject."

"So did I," the unsuppressible Clancy butted in.

"And when I got through reading them, I knew a darn sight less than when I started."

Both Dern and I got a huge kick out of that.

"I'm sorry my stories didn't get over, but perhaps I can explain the fourth dimension in simple, everyday language—so even Mister Clancy can understand it."

THIS brought a chuckle from Dern and a grunt from Clancy.

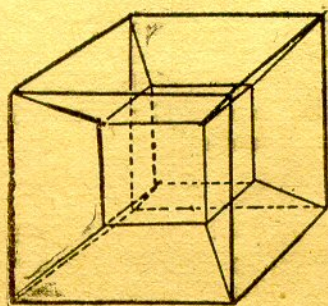
"Every object we know of has three dimensions," I went on. "We call these dimensions length, width and thickness. For purposes of measurement, we always consider these dimensions to be at right angles to each other, thus": I picked up my fountain pen and two pencils and held them in my hand in such a position that they intersected each other at right angles. "Now, if Mister Clancy will loan me one of those long cigars which he has in his pocket, I'll attempt to show you what is meant by the fourth dimension."

Clancy gave me a stogie and I placed the end of it at the intersection of the three other objects.

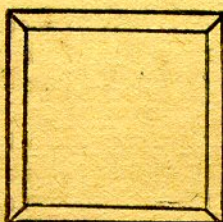
"All I have to do is place this cigar so it is at right angles to the pen and the two pencils, but is not in the same straight line with either of them, and the stogie will represent the fourth dimension."

"Let's see you do it!" challenged Clancy.

"I don't claim that I can do it. One reason why I can't is that neither of these objects comes anywhere near being like a line, which would have neither width nor thickness, but only length. However, I can draw a picture showing what a cube would look like if it were extended into four dimensions. Mathematicians call such an object a tesseract or hyper-cube. It is what you'd get if you moved a cube having a volume of one cubic inch for a distance of one inch in the direction of the fourth dimension. And while I'm about it, I'll illustrate my point still further by drawing a picture of a three-dimensional transparent glass cube, as it looks from a point directly above it." I picked up a piece of paper and drew these two sketches:



Four Dimensional Cube
or Tesseract.



Three Dimensional Glass
Cube as seen from directly
overhead.

"Of course you understand that this is drawn in perspective and for that reason it looks somewhat distorted to anyone who is not accustomed to looking at four-dimensional objects. To get the idea, you'll have to use your imagination. The small cube in the center is really exactly the same size as the outer cube. It's somewhat similar to the effect you get when you look straight down on a three-dimensional cube made out of

transparent glass. What you seem to see is a square with a smaller square inside it, and with the corners of the two squares connected with diagonal lines. Yet you know perfectly well that in reality both of the square faces are equal in size and the four lines which look diagonal are really perpendicular.

You also know that the four figures grouped around the center square, which look like trapezoids, are in actuality squares.

"It's exactly the same sort of effect you get from my picture of a tesseract. You'll have to imagine that the lines connecting the corners of the inner cube with the corners of the outer cube are perpendicular to all three edges of each of the cubes which they intersect. These lines form the edges of four more cubes, exactly equal in size to each of the other two cubes and grouped around or *through* them.

"If you'll count the various parts of the tesseract, you'll see that it is bounded by six cubes, twenty-four square faces, thirty-two edges and sixteen corners. Simple enough, isn't it?"

"Simple as mud," grunted Clancy.

"You follow me, don't you, Mr. Dern?" I asked the great detective.

"Well, I may be a few jumps behind you, but if you'll travel a little more slowly and give me time, maybe I'll catch up with you."

"Let me try another line of attack," I suggested.

"One of the best ways to grasp the possibilities of four-dimensional space is to make comparisons between three-dimensional objects and those having only two dimensions.

"For instance, suppose I make a two-dimensional glove out of paper. Of course, paper has three dimensions, but the thickness is so small compared to the other two dimensions that we may consider the paper to be two-dimensional in character."

I picked up a pair of scissors and quickly clipped out a bit of paper shaped like a glove. Then I drew on another sheet, a crude figure of a paper doll with the palm of both hands showing.

"You'll notice that this paper glove fits only the right hand of the doll, and no matter how I slide it around on the paper, I can't make it fit the left hand. But if I pick it up and turn it over through the third dimension, it becomes a left glove and no longer fits the right hand. In the same manner, if your right-hand glove were turned over through the fourth dimension, it would fit your left hand. You mustn't confuse this with turning the glove inside out, which would expose the rough, unfinished inside part. When inverted through the fourth dimension, your glove would look just the same, with the smooth finished surface outside, but would have the thumb and fingers in such positions that they would fit the other hand.

"Here's another comparison. See this rubber band? It was cut from an old inner tube. Notice that it is rough on the inside and smooth on the outside. Without breaking or injuring it in any way, I can twist this circular band through the third dimension so that now the rough surface is outside and the smooth one is inside.

"The same thing can be done with a tennis ball,

by twisting it through the fourth dimension. Without breaking the ball in any way, it could be turned inside out, so that the outside surface would become the inside and vice versa. Do you comprehend what I mean?"

"I guess so," Dern hesitated.

"Sounds goofy to me," growled Clancy.

"As I understand it," I continued, "you are interested principally in knowing how the contents of a safe deposit box can be removed without opening the door."

"That's exactly what I would like to know."

"I can illustrate that with this plain rubber band or ring. To a two-dimensional being or Flatlander, this would be an impregnable safe deposit vault. In order to obtain access to it, he'd need a door in the side, since it would be impossible for him to climb over the edge of the ring. However, if he happened to get hold of a specially constructed pair of pliers he could, without leaving his two dimensional world, reach over the top of the ring, through the third dimension and remove all the contents.

"The Hyper-Forceps which Professor Banning and I made is nothing more nor less than a pair of pliers or tongs, that will operate through a fourth dimension. With it I could easily remove the contents of a safe or closed box without opening the door."

"And where is the Hyper-Forceps now?" Dern demanded.

"Locked in a drawer at our workshop on the hospital grounds."

"Would you mind letting me see it?"

"I'd be glad to."

The hospital was but a short distance from my hotel, so the three of us walked over to the workshop in which Doctor Banning and I had constructed the Hyper-Forceps.

We had always kept the instrument in a locked drawer of a cabinet where our delicate tools were stored. There were only two keys to this drawer. I had one and Professor Banning had the other.

When I placed my key in the lock I was surprised to find that the drawer was already unlocked. Knowing the extreme care which both Professor Banning and I exercised whenever we handled the Hyper-Forceps, I could not believe that either of us had neglected to lock the drawer. With a feeling of dreadful premonition, I opened the drawer.

It was empty!

Dern examined the lock. "H-m-m-m! Just what I thought! The lock has been sprung with a screwdriver and the bolt pushed back in place. As crazy as this four-dimensional applesauce sounds, it looks as if we are on the right track after all."

IF anyone had suggested that I was to become an operative for the William Dern Detective Agency, I should have told him he was either drunk or out of his mind—but that's exactly what happened.

Dern talked me into it.

He pointed out to me that, since it was now quite apparent that the crook, who was perpetrating these stupendous robberies, was using the Hyper-Forceps, and since I was the only available person who knew how the instrument looked and was operated, my assist-

ance was indispensable. The tremendous seriousness of the crimes and the dangerous and far-reaching effects they were having were also imparted to me in terms that left me almost gasping for breath.

"The stuff that's been printed in the papers—bad as it sounds—doesn't come within a thousand miles of describing the real state of affairs," Dern told me. "They wouldn't dare to publish a tenth of the actual facts.

"Just think what it means to have the security of all the world's safe deposit vaults suddenly destroyed. A man might as well put his valuables in an open soap box and leave it on the street, with a 'Help Yourself' sign on it, as to put them into a safe deposit box these days.

"Did you know that all the insurance companies have already announced that they will no longer insure the contents of safe deposit vaults without charging rates that are far in excess of the income which a bond owner can get from his securities?"

"I tell you, the bankers and other financiers are desperate. They have their backs against a wall. It wouldn't take much to throw every bank and business house in the country into bankruptcy. That's how important it is, that we catch this crook before he does damage that can never be repaired."

The upshot of it all was that I agreed to coöperate with Dern in every possible way, with the understanding, however, that as soon as Professor Banning returned, I was to be released from duty.

In order that I might work in harmony with the rest of the organization, I was delegated to team with Clancy, who was in active charge of the case.

After we had become better acquainted, Clancy and I got along famously. He grudgingly admitted that in matters pertaining to science and mechanics, I had just a shade the better of him, but when it came to skill in tracking the elusive criminal to his lair, I couldn't help handing the solid gold handcuffs to Clancy.

His method was simple enough. As soon as it was established with reasonable likelihood, that the criminal was rifling the safe deposit boxes by means of the Hyper-Forceps, it was easy to figure out just how he would operate. His first move would be to rent a box for himself, since that would be the only way he could get inside the vault. He would make frequent visits to the vault until he happened to strike a time when he was all alone. Then, with the aid of the Hyper-Forceps, he would remove the contents of three or four boxes, putting the bonds and other valuables which could easily be converted into cash, into his own box, and carrying the worthless papers away in his pocket. On his first robbery he had made the mistake of throwing an insurance policy into the waste basket. This error was never repeated.

Since we knew that our quarry was numbered among the renters of safe deposit boxes in the various banks which had been robbed, the next logical step was to obtain from these banks copies of all new signature cards which had been made out between the last time I had seen the Hyper-Forceps and the date the robbery was discovered in each bank.

From this assortment of signatures, it didn't take a handwriting expert long to pick out the cards which had been signed by the same person. Naturally the crook had used different names in each of the places he had visited, but the tell-tale slant and shape of certain typical letters gave him away.

Facsimile copies of all these signatures were reproduced in large quantities and were sent to the safe deposit departments of every bank in the United States and Canada, with instructions to watch for signatures similar in character. One thing that helped us most was that the robber, for obvious reasons, had always rented one of the largest boxes available, which was sufficiently unusual to attract attention.

It wasn't long before we picked up a hot scent. We received a wire from one of the largest banks in Salt Lake City, stating that a box had just been rented to a man whose signature was identical with one of those on the warning sheet. Evidently he had become so careless and cocksure that he would never be discovered, that he had even used the same alias as on one of the previous robberies.

Without waiting even to pack a grip, Clancy and I boarded an airplane which had been kept in readiness for just such a call, and hopped off to the land of the Latter Day Saints.

We landed at Woodward Field at about two o'clock in the afternoon and immediately went to the bank. Upon presenting our credentials, we secured permission to keep the vault open after the regular business hours. Under Clancy's direction, two workmen made a few changes in the scenery.

He selected one of the small private booths, located almost directly opposite the entrance of the vault, and had two concealed peep holes put in the door. At the further end of the vault there were already two large mirrors. Clancy instructed the workmen to install four more mirrors on the portions of the walls not occupied by the doors of safe deposit compartments.

When this was done he went into the "doctored" booth and looked through each of the peep holes, while I moved from one part of the vault to another.

"O. K.," he finally said. "I can see you now, no matter where you stand, as long as you're inside the vault."

He also had wires run from the booth to the clerk's counter with a small signal light arranged in such a way that when the clerk pressed a button with his foot, the light would flash on inside the booth. This was to be our signal that the suspected person was about to enter the vault.

As soon as the bank opened on the following morning, Clancy and I took our positions inside the booth, but it was not until about fifteen minutes before closing time that the little light flashed on. Clancy and I immediately put our eyes to the peep holes and waited.

The man who accompanied the bank attendant into the vault was a tall, well-built, prosperous-looking man of about thirty-five. After going through the customary routine of inserting each of the two keys, opening the door and drawing the tin box part way out of the compartment, the bank attendant withdrew and left Mr. Suspect alone in the vault.

He took his box to the table in the center of the vault and pretended to examine a few papers. In reality he was stealthily looking around to see if anyone else was at the counter preparing to enter the vault. Apparently satisfied that he would not be interrupted, he picked up his box and carried it to his compartment.

It happened to be in a front corner, out of sight of anyone standing in front of the vault's entrance, but we could easily see his reflection in one of the mirrors.

Placing his box on the floor, he reached in his breast pocket and drew forth a peculiar-looking article resembling a physician's forceps with two sets of handles.

"The Hyper-Forceps!" I whispered to Clancy.

He nodded to indicate that he had understood me.

WITH both hands, the man manipulated the handles of the instrument until the jaws seemed to melt right into the thick steel walls of the vault. After a few seconds of probing, he withdrew the jaws of the Hyper-Forceps. Between them dangled a tin box which had been drawn right through the locked door of one of the safe deposit compartments.

Working with nervous haste, he removed the papers from the pilfered box and stuffed them into his own box. Then, by using the Hyper-Forceps again, he forced the empty box right through the closed door of the compartment into its place.

Once again he returned to the table in the center and, finding the space in front of the counter still unoccupied, he returned to the corner and started to perform the same operation on another box.

It was then that Clancy rose and signaled for me to follow him.

"Have you got your gun?" I whispered.

"Sure, but I won't need it with this bird." It turned out that his boast was a bit premature.

Without making a sound, we opened the door and tiptoed into the vault, just as the thief was removing the second box from its compartment.

Clancy laid his hand on the crook's shoulder and pronounced the conventional formula: "You're under arrest."

The Hyper-Forceps, together with the safe deposit box, clattered to the floor.

With the quickness of a rattlesnake, the criminal reached back and grasped Clancy's neck between his clasped hands, at the same time bending forward in such a way that he heaved the detective's body over his shoulder and threw him to the floor of the vault. Clancy passed out.

Then the thug turned to me.

Before I could make a move to defend myself, he dealt me a terrific blow in the pit of my stomach. I crumpled like a deflated balloon and sunk down on top of the stolen safe deposit box.

Though the pain was frightful, I still retained consciousness. I was horrified to see the thief take from his pocket a wicked-looking clasp knife, which snapped open with an ominous click.

He was quite close to me, and he must have thought that I was out of the picture completely, for he was

directing all his attention to Clancy, who was just coming to. As I tried to brace myself so I could sit up, my hand touched the Hyper-Forceps.

Singular, isn't it, how rapidly one's mind sometimes works in times of dire emergency? Almost instinctively, I grasped the handles and an instant later I had caught the robber's hand in its jaws. With equal rapidity, I manipulated the device for moving the jaws into the fourth dimension.

Though I had fully anticipated what would happen, the result was none the less astounding. The knife and the hand holding it instantly faded from sight, together with the upper portion of the man's body. From the waist down, however, he was still in plain sight.

Clancy was just struggling to his knees. His eyes opened so wide that I could see fully half an inch of white eyeball on all sides of the pupils. With a limp and bedraggled cigar still hanging from his blue lips and his mashed derby cocked over one eye, he certainly was a remarkable sight.

"My Gawd!" he gasped. "There's nothing left of him but a pair of pants!"

"Don't worry," I assured him. "His legs are inside the pants and I've got the rest of him on the end of the Hyper-Forceps. He sure is a tough egg. Maybe you'd better tie his legs together, before I pull the top part of him back again."

Clancy got up and approached the weird-looking half-body. He had no sooner come within range, than one of the legs shot out and dealt him a resounding kick on his shin.

"You blankety-blank son of a blank!" Clancy swore. "No pair of pants can kick me in the shin and get away with it." Whereupon he brought one of his square-toed shoes in vigorous contact with the seat of the aforementioned pair of pants.

I felt a tug on the Hyper-Forceps which almost pulled me off my feet.

"Go easy, Clancy," I yelled. "If you don't want me to get jerked into the fourth dimension, you'd better lay off those trousers. And as for you, you dirty crook, I don't know whether you can hear me or not, but unless you want to commit suicide, you'd better quit struggling and give up. If you once get loose from the grip of this instrument you'll never be able to get back to earth again."

He must have heard and understood, because he immediately quieted down and submitted to having his feet tied together with Clancy's suspenders. As soon as this was accomplished, I pulled steadily on the hyper-forceps and when the right hand came into view, Clancy slipped his handcuffs over the wrist and wrenched the knife from its grasp. A moment later, we had drawn the rest of the thief's body back into three-dimensional space.

He turned out to be a former assistant in the X-Ray Laboratory at the Mayer Brothers' Hospital. Evidently he had learned about the Hyper-Forceps from snatches of conversation he had overheard at Winchester, and had conceived the idea of stealing it and using it for criminal purposes.

In his pockets and his luggage we found over a hundred safe deposit keys, all conveniently labeled with the names and locations of the banks to which they belonged. With the aid of these keys, we recovered all the stolen property except for a few thousand dollars in cash, which he had spent for expenses.

The four-dimensional thief is now in the penitentiary. He has been found guilty on enough counts to keep him in jail for the next thousand years.

As for the Hyper-Forceps, we decided it was too dangerous an instrument to leave in a flimsily locked drawer. It now reposes in one of the most modern, theft-proof, non-pickable safe deposit boxes in a bank known only to three persons. Doctor Paul Mayer has one of the keys and I am holding the other to give to Professor Banning as soon as he returns from abroad.

THE END.

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a textbook. Moreover, most of the stories are written in a popular vein, making it possible for any one to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge.

1. What is the scientific treatment of the private box system in safe deposit vaults for securing the contents? (See pages 104 and 105.)
2. Can you give an illustration of the fourth dimension with four straight strips of wood? (See page 106.)
3. What is the name of the solid with four equal axes symmetrically placed? (See page 106.)
4. What is a tesseract? (See page 106.)
5. What hypothetical process would produce a tesseract? (See page 106.)
6. What would the drawing of a four dimensional cube look like? (See page 107.)
7. Give some examples of "life in a two dimensional world and of its limitations, (See pages 106 and 107.)
8. What is a Flatlander? Describe his limitations. (See page 107.)
9. Name two characteristic and widely differing members of the Mollusk family. (See page 115.)
10. How many tentacles has the octopus? (See page 115.)
11. How are the tentacles of the octopus armed? (See page 115.)
12. What do the syllables *octo* and *pus* in octopus tell us? (See page 117.)
13. What is a chromatophore? (See page 142.)
14. What are the distances of Mars and of the Moon from the earth? (See page 148.)
15. How would these distances affect the time required for transmission of radio messages? (See page 148.)
16. How can you hear without using the auditory system of the ears? (See pages 154 and 155.)
17. What is the general direction followed by the majority of the Martian Canals? (See page 155.)