record and insert the record of another day. So proceed until the entire record has been passed through. It requires but a fraction of a minute to perform all of these operations upon a properly prepared day's record.

Forty-eight partial sums can be obtained by passing the record through twice, and 72 by passing it through three times.

In order to derive the full benefit from this mechanical treatment of the records, it is obvious that the instruments used in procuring the observation curves should trace the same upon tolerably strong boards, and not upon paper. Each sheet can then be cut in two along the curve; one portion of the sheet can be put away as an original record, and the other portion used upon the analyzer.

The advantage of this treatment depends largely upon the number of summations required for analysis. In the discussion of tidal observations, the number of periods used is about 20, and the saving of labor through mechanical additions should be much greater in this case than in the case of meteorological discussions.

TERMINATION OF THE NEW YORK-PITTSBURG AUTOMOBILE ENDURANCE TEST.

The 800-mile test of American-built automobiles, referred to in our issue of the 17th instant, was completed October 15. Of the 34 machines which started the first day, 20 succeeded in reaching Pittsburg on the date mentioned, and the following day 5 more concluded the run, thus making a total of 73½ per cent of the contestants who finally succeeded in getting their cars through. In view of the extremely bad weather encountered on the second and third days of the run, it is remarkable that such a large percentage succeeded in finishing. The very heavy rain storm which swept over New York city and a great part of New York State on October 8 and 9, and which was so heavy as to cause a precipitation of 10 inches, first came upon the automobilists about 10 A. M. during the second day of their journey, the second stage of which extended from Pine Hill to Binghamton; and the rain soon turned the roads into rivers of mud and water, through which the cars plowed as best they could, the majority of them doing so with considerable difficulty only by using their low speeds. The White steam tonneau, which acted as a pilot car, left Pine Hill at 6 A. M. for the purpose of scattering confetti along the route at all cross-roads, forks, or other places where the contestants were liable to miss the road. Being the leading car, it had a hard time, as the roads were soft from rain all the night before. The machine, however, overcame the adverse conditions, and reached Unadilla, 62 miles distant, in 7 hours. After its passengers had had dinner, they again started onward through the fast deepening mire, and finally arrived at Binghamton, 44 miles beyond, a little before 5 P. M. A Pierce "Arrow" machine, also acting as a pilot car, arrived just before the White.

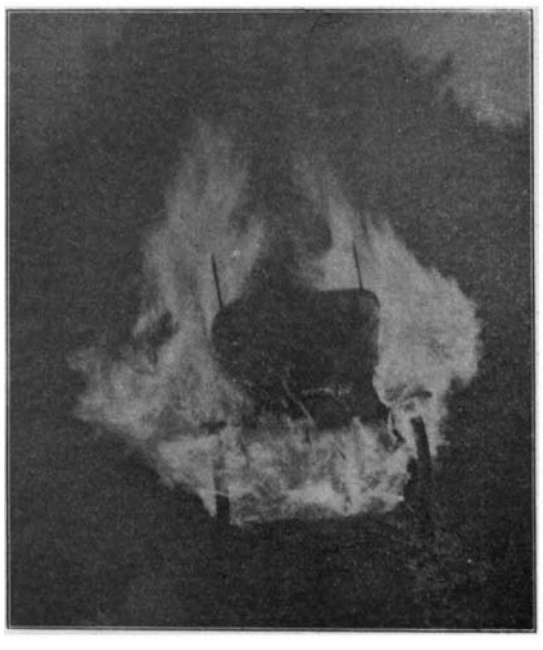
The first of the contestants to reach the noon stop, Unadilla, were the Stearns gasoline and the White steam tonneaus, neither of which had stopped throughout the morning's run. The third car, a double-cylinder Toledo tonneau, arrived at 1:54, and was followed at 2:18 by its mate, a four-cylinder car. The fifth to arrive was Oldsmobile No. 40, which also got in second at the night control at Binghamton. During the morning's run a Columbia touring car slid down a 7-foot embankment. A Toledo machine and a pair of horses, by their united efforts, pulled the car back on the road. The Phelps three-cylinder tonneau came to grief after covering about 30 miles of the day's run, due to the stripping of the driving pinion of the planetary gears used to produce the low speed; and the St. Louis single-cylinder tonneau sheared off a 1⅛-inch gear shaft while climbing a hill near Delhi. Its operator pluckily went to work and made a new shaft, which, with the facilities

The Automobiles Stored in the Official Garage at Pittsburg.

Knox Tonneau Arriving at Erie After an All-Night Run.

Helping Each Other up a Steep Hill.

Two Fredonia Machines Encountering the Flood Near Binghamton, N. Y.



A Franklin Machine Burning in the Rain.

TERMINATION OF THE NEW YORK-PITTSBURG AUTOMOBILE ENDURANCE TEST.

The report from the American consul at Tientsin describes the Chinese plow as very small and with but one handle and the mold-board having but a few inches of surface. It simply scratches the surface of the soil, and is frequently drawn by men and women. The Chinese have no conception of deep plowing, and it would be contrary to their traditional agricultural training to turn the valuable surface soil underneath.

afforded in a country town, was by no means an easy job; and, after a day's delay, the machine was under way again, keeping the road till it eventually finished at Pittsburg. This repair was one of the most noteworthy made during the run. About 20 miles from Pine Hill, in the vicinity of a place with the suggestive name of Andes, the automobiles experienced their first real hill-climbing test. Here between two and three miles of 6 to 8 and 8 to 15 per cent hills were encountered. Climbing these hills on the low gear at a speed of one to five miles an hour was tedious work, and here, as in many other places, the advantage of a three-speed gear became evident. The large percentage of low-speed work was especially wearing on the air-cooled motor machines having no mechanical cooling apparatus, while the Knox machines with fan-cooled (and, in this case, mud-and-water cooled) motors suffered especially from water and mud short-circuiting their spark plugs, which, though on top of the horizontal cylinders, were not, as they well might have been, waterproof. On account of these troubles, the three Knox machines did not reach Delhi, 35 miles from the start, till 2 P. M. They left there, preceded by a Franklin, two hours later; and, after 5 miles of hill climbing up 10, 12, and 15 per cent grades, the occupants of car 24 noticed smoke rising over the hillside where the road, curving, descended. A minute later they came upon the sight to be seen in the lower right-hand picture on the preceding page. The flames of the burning machine rose at first much higher in the air than the photograph shows, and made a great display in the dull light of the rainy afternoon. While all present were trying to extinguish the flames by splashing water from the ditch upon the burning wood, a rather faint explosion caused all to instinctively jump aside for the moment, until the discovery was made that a tire had been burned through and burst. As soon as the gasoline had been consumed, the burning wood was extinguished, and the machine was subsequently towed back to Delhi. The fire was one of those rare ones that sometimes occur on gasoline cars when the fuel tanks, carbureters, or piping are arranged over or near the muffler. Should a gasoline leak develop, the vapor or liquid is liable to come in contact with the burning exhaust gases. One of the surviving Franklin cars received its baptism of water just after leaving Bath. It broke through a bridge and was completely submerged, but its operator managed to get it hauled out again and to resume the journey.

The Knox tonneau and runabout spent the second night at Franklin, 17 miles from Delhi, to which place the former returned after experiencing a stuck transmission three miles beyond, and before reaching which the runabout stopped for the night with a bad rear tire. The Knox surrey returned to Delhi with a broken radius rod. It made an early start the next morning, and reached Unadilla in time to see the tonneau start from there the next noon. This machine and the runabout arrived at Binghamton the evening of the third day, just 24 hours behind time. The fourth day these two cars made only the 63 miles to Elmira, as they were detained by deep ponds over the road in two places. The machines were towed through one, and pushed up a rocky road on the side of a very steep hill in order to get around two others. Two Franklin machines caught up with them at this place, and all four cars entered Elmira together in a pouring rain, as usual, that evening. The Franklin cars were run all night and the following day (Sunday, the fifth day). They reached Buffalo Sunday night, and started for Erie the next morning with the rest of the contestants. Two Oldsmobiles reached Buffalo at 9:25 P. M. Sunday at the same time as one of the Franklins. The Oldsmobile Company was the only firm building machines of the runabout type, all of whose machines were on hand to start the morning of the third day, at Binghamton. Considering what they had gone through, this certainly speaks well for these light machines and the perseverance of their operators.

Including the White pilot car and a private White machine driven by Mr. Augustus Post, five White tonneaus completed the trying second day's run through the mud and rain. The White cars were the only steam machines in the run, and they entirely demonstrated their endurance and reliability.

The repairs made in Buffalo on the cars that rested there over Sunday were, in most instances, slight. A Columbia touring car skidded against the curb and broke its rear axle Saturday when a few blocks from the control. A new one was obtained from Hartford and put in place. One of the Franklin machines is said to have had a rear axle replaced also. The Toledo cars required new driving chains, on account of the excessive wear because of the mud.

Fifteen machines left Buffalo for Erie, Pa., the morning of the sixth day (Monday), and all arrived there safely shortly after noon. The Locomobile touring car, driven by its designer, Mr. A. L. Riker, who was accompanied by his wife, reached Erie at midnight. Mr. Riker had the misfortune to break his reverse gear about 12 miles east of Bath at 2 A. M. Saturday. He succeeded in obtaining new gears after a wait of 36 hours, and, although he lost two days, he succeeded in catching up with the run Monday night. The new reverse pinion of his machine broke just as he was backing out of the garage to start Tuesday morning, but he was able to remove the broken pinion and finish the run without further mishap, though minus a reverse. The Knox runabout and tonneau cars reached Bath Sunday afternoon. The latter replaced a broken radius rod at that town. It also ran out of cylinder oil, and, no supply being available, the operator was obliged to purchase and use, the following day, a poor grade of oil, which caused the pistons to bind and the cylinders to overheat, after which the machine worked poorly the rest of the trip, even though the proper cylinder oil was soon afterward obtained. These two cars reached Buffalo at 5:30 and 7:30 P. M. Monday, the tonneau breaking a second radius rod a few miles out. They were sent on the same night and arrived in Erie early Tuesday morning. The runabout's gasoline gave out 10 miles east of Erie, and the operator procured some kerosene and ran on that to the city. Bad luck still pursued the tonneau, as a roller bearing in the front wheel gave out at Painesville, 30 miles east of Cleveland, which put the machine behind again an entire day, while the runabout kept with the run. The Knox surrey caught up with the tonneau at Cleveland, and, although the two machines left there a day behind the other contestants, they finally reached Pittsburg only 4 hours after the control was declared closed, which was at 6 A. M. on Friday, the 16th instant, and the tenth day out. The way in which the double opposed cylinder surrey helped the similar tonneau car on some of the worst hills, thus relieving the mechanics from over-exertion, can be seen in one of the photographs, while another picture shows the latter car and its occupants after the all-night run to Erie. Decidedly the worst night run, however, was that experienced the last night, from Youngstown to Pittsburg. There were very steep clayey hills, made extremely slippery by thunder showers, and upon which it was next to impossible for the wheels to grip or a person to obtain a foothold. Both machines made a perilous descent down a steep, winding, and slippery hill into Beaver Falls, Pa., at 3 A. M., which thoroughly demonstrated the efficiency of lever steering aided by a good steering check and an equal distribution of weight, in preventing dangerous skidding. These two 2,500-pound machines completed the run without any tire trouble.

Among the last cars to reach Pittsburg were the two Fredonia machines, a tonneau and a runabout. A fair idea of what the cars that fell behind the second day of the run were obliged to encounter may be had from the photograph showing these two machines being towed through water, well over the hubs of the wheels, covering the road along a river bank. In an experience of this kind near Binghamton, the calcium carbide in a can in the tool box of the Knox surrey was attacked by the water so suddenly that the resulting heat ignited the acetylene gas generated, and the driver was badly burned when opening the tool box and throwing out the can of carbide. The machine in this instance, while being towed, ran off the road, and was submerged so that only the tops of the seats were above water. It was finally pulled out by a crowd of onlookers. New batteries and spark coil were obtained, and the car was run five miles on the railroad, across three bridges, in order to get around the pond.

The automobiles, upon their arrival in Pittsburg, were all placed in a garage, where a thorough examination was made of their condition. The report of the committee will not be out till November, but from the information at present attainable it appears that the nine machines which fulfilled all the requirements are, in their order of merit, as follows: No. 10. Two-cylinder Toledo touring car. No. 15. Pierce Stanhope fitted with single-cylinder De Dion motor. No. 6. White steam tonneau. No. 14. Pierce "Arrow" tonneau, fitted with two-cylinder De Dion motor. No. 5. White tonneau. No. 18. Single-cylinder Rambler runabout. No. 16. Single-cylinder Packard car that crossed the continent. No. 2. Four-cylinder Columbia touring car. No. 35. Double-cylinder Stearns touring car.

No such severe endurance test will in all probability ever be held again, and it is an encouraging outlook that so many of the standard American machines have been so thoroughly tried under the most unusual conditions, and even then have not been found wanting.

Death of Gordon McKay.

Gordon McKay died October 19, 1903, at his home at Newport, R. I. His inventions had a most marked influence upon the boot and shoe industry of the world. They closed the doors of the cobbler; but they supported large American factories. Mr. McKay peddled the stock of his first corporation from door to door. From the payment of the very first dividend the stockholders considered themselves wealthy men. Everyone who made American-made shoes paid tribute to Mr. McKay in the form of royalties.

Unconsidered Facts in the Art of Flying.

In spite of the universal interest felt in the art of flying, and the number of articles that have been written upon the subject, the public, and it may be said most of the workers in this line, have neglected some of the most important facts connected with the art. There are several ideas prevalent and generally accepted as facts that have retarded invention and have influenced engineers to work in wrong directions. First of these is, that the power required is enormous. The second is, that artificial flight has not yet been accomplished, and the third is, a general wrong idea of the essentials in construction.

Flying, from the figures available, may be considered the easiest of all methods of progression, calling for less horse power than any other. As a proof of this, take for example the case of the storks, which, in their annual migrations, make a flight between Buda-Pesth, in Hungary, and Lahore, in India. This, in an air line, is perhaps 2,300 or 2,400 miles, and the distance is accomplished in about twenty-four hours without a rest. A horse driven in a sulky a hundred miles in a long summer day is not far from the limit of endurance. Six hundred miles in a week is near the limit of a man in heel and toe walking. One thousand two hundred miles is approaching the record of the "go as you please gait." Among wild animals, 100 miles is about as much as can be found in the records for twenty-four hours, but the bird weighing anywhere perhaps up to twenty pounds, makes the 2,500 miles in twenty-four hours with ease and certainty twice in a year. If the weight is put at ten pounds, this equals 25 ton miles. On the best and most level railroad, and with carriages operating with the least friction, a ten-pound animal would find it difficult to haul 25 tons one mile in twenty-four hours. These birds fly at great heights, undoubtedly to reduce the resistance of the air. There are many other examples that might be given of long distances covered by heavy birds, showing the small amount of power required in flight. The immense speed of many of our birds when in ordinary flight is another proof of the small amount of power required.

The figures commonly accepted for the horse-power needed for mechanical flight, per pound of weight supported, are absurd when applied to birds. Taking the most liberal of them, we find that a 13-pound goose must exert a small fraction over one horse power when on the wing. Other figures have been published by experimentalists which would double this power for the weight. The machines which have actually flown have to some extent confirmed these figures, notably those of Mr. F. H. Wenham and Sir Hiram Maxim. There would be no escape from this conclusion but for the experiments of Mr. Marey. He found that the muscles of birds are not more powerful than those of terrestrial animals per square inch of section. This shows at once that there must be a mistake in the calculations, and that flying requires a minimum rather than a maximum of power.

Recently some doubts have been thrown upon some of the statements in regard to the speed of birds on the wing. The figures which have been given in regard to birds found in the Western States were obtained under conditions which insured great accuracy. The observations were made by government engineers making current determinations during surveys of western rivers. While watching their floats pass over measured distances along the "slues" or straight stretches lined with towering forests, they were provided with stop-watches and signals from station to station. As the ducks invariably follow the stream, in their flight from point to point, the observations were made with great ease and accuracy. This was done in the intervals of the current observations, and much valuable data obtained which would have otherwise been beyond our reach.

No animal, whatever its weight, a bird only excepted, can make any such speed as 90 to 100 miles per hour. Among the birds there is a long list of those whose speeds are from 80 miles an hour upward, their weights all being under 15 pounds. Parenthetically it may be remarked that naturalists will give dimensions of birds to an eighth of an inch, carefully spreading their wings and arranging the feathers, but it never occurs to them to give weights. The eagle may weigh 5 or 50 pounds, so far as the records show. Hunters rarely speak of the weight of birds, though the weight of game is often estimated and the weight of fish given to the nearest ounce.

The facts just given, when taken together, show pretty conclusively that the power necessary for animal flight is extremely small rather than very great. It also seems to be proved that to fly successfully the speed must be high.

In looking over the history of the art of flying, one is struck at once by the great number of persons who have accomplished flights of anywhere from one quarter of a mile to a mile by means of apparatus not

connected with a balloon. In a word, if we take the history as we find it, we learn of a great number of methods by which flight can be accomplished. What we need to know in this art is not so much how to fly, as how to alight with ease and safety. Experimenter after experimenter has found that after he had succeeded in flying, the cost of the repairs due to the accidents of alighting have put an end to his experiments. In other words, what we want to know is not so much how to go up as how to steer and how to come down safely.

Inventors are troubling themselves greatly in regard to balance and power. Lilienthal came to his death because he placed the weight too near the wing surface. Had his machines been arranged so as to bring his body six or eight feet lower, his wings would never have been upset in the air. The bird finds it easy to balance itself with its body, which is but a few inches below the line of the wing, but in the most complex air currents it is often in a condition which would wreck any structure not animate in every part.

It is strange how mistaken ideas of strength relative to weight, among engineers as well as laymen, prevail. Pine is stronger than steel, weight for weight, both in tensile and transverse strength. The bamboo probably exceeds in stiffness anything of the same weight that could be made in metal. The calculations show these facts, and Prof. Thurston's experiments, which have been more than once alluded to in the pages of the SUPPLEMENT, have demonstrated it beyond a doubt. The weak points of wood structures are in the joints. With proper attention paid to this feature, the structure of wood and wire becomes lighter per foot of surface than can be produced with metal.

HARLEM RIVER TUNNEL OF THE RAPID TRANSIT SUBWAY.

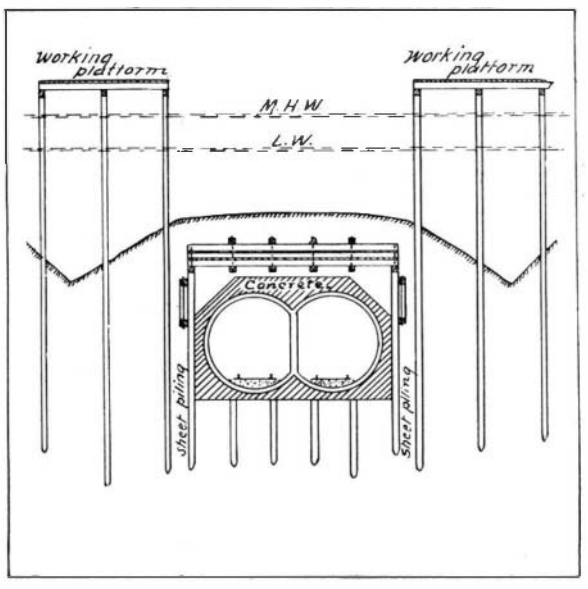
We present on the front page of this issue an illustration of a difficult piece of engineering work which has particular interest for two reasons: First, that it serves to carry the tracks of the new Rapid Transit Subway beneath the Harlem River; and second, that this tunneling has been carried out upon an entirely new system, and through about the most difficult material in which a tunnel could be built. The plans for the Subway called for a two-track tunnel at this point, and they left the character and method of construction of the tunnel open to the judgment of the contractor, the final decision as to whether the plan would be adopted being, of course, left to the Rapid Transit engineers. The work has been done by Messrs. McMullen and McBean, upon a plan devised by Mr. McBean, to whom we are indebted for courtesies in the preparation of the present article.

It was desirable, of course, in this tunnel, as in all tunnels passing below rivers, to keep the grade as near to the surface of the river bottom as possible, so as to avoid the use of heavy grades in the tunnel approaches. In the present case, however, the mud was so thin, weighing only about 80 pounds to the square foot and being of an almost liquid consistency, that the system of tunneling by means of a shield was practically out of the question. To have adopted it would have been to encounter the risks and accidents due to blowouts, which have made the present New York and New Jersey tunnel such a hazardous undertaking, and have rendered it impossible for the contractors to keep the tunnel in perfect line and level. The method used in the present case was to drive two lines of sheet piling parallel with the line of the tunnel, and wide enough to inclose the same; construct a strong roof of timber across from wall to wall of piling; and then, by means of pneumatic pressure and air locks, exclude the water and excavate the soft mud from within the tunnel caisson and build the tunnel structure, which is constructed, part of it of concrete and part of it of cast iron, within the working chamber thus provided. The construction of the caisson involved the driving of piling throughout the full length of the tunnel, and the piling, when cut off before commencing the construction of the tunnel proper, served to give a perfectly unyielding foundation upon which the completed work could rest, thus preventing the possibility of any future settlement.

In carrying out the work, the first step was to dredge out a channel to within about 6 feet of the sub-grade of the tunnel. Piling was then driven for two lines of working platform, one on each side of the tunnel. Next the supporting piles for the roof of the caisson were driven, each bent containing four piles, and the bents being spaced 8 feet from center to center. The duty of these piles was to support temporarily the timber roof; to assist in putting the transverse braces that held the side walls in line in place; and as we have said above, to give additional bearing to the finished tunnel. To preserve the two side walls of sheet piling accurately in alignment, a pair of continuous longitudinal trusses was used for each wall, the two trusses in each pair being spaced 12 inches apart, or the width of the sheet piling wall. To maintain the side trusses with their wall of piling at the proper distance apart, and preserve both walls in true line, a series of transverse trusses was constructed, which extended from wall to wall and reached almost to a contact with the longitudinal side trusses. Now, it can be seen that with the combination of these longitudinal and transverse trusses with the rigid line of piling, it was possible by the judicious use of wedges at the ends of the transverse trusses to keep the side trusses, and therefore the wall of piling, very accurately in line. The grade of the tunnel was also accurately determined by moving the cut-off circular saw upon a track supported on the working platforms, and giving this track the exact pitch or grade required for the tunnel. Then by moving the saw forward and maintaining always the same reach of the saw shaft, the cut-off of the piles necessarily presented the required grade for the finished tunnel.

The remarkable accuracy of the sheet piling and the tightness of the whole work is due very largely to the use of a compound pile which was designed especially for the work. This consists of three 12x12 sticks bolted together and driven as one pile, each three-fold pile being tongued and grooved to the next pile. The work was also greatly facilitated by the use of pilot piles, which were built of steel channels and plates and measured 12x12 inches in cross section. These were driven with the aid of the jet, and served to open the way for the wood piling. Moreover, by their use it was possible to detect the location and contour of bowlders, and when such bowlders were struck, it was only necessary to withdraw the pilot pile, blast out the obstruction, and drive the wooden pile.

The timber roof was built up, as shown in our drawing, of three transverse layers of 12 x 12 timber and two intermediate layers of 2-inch plank. The whole roof was well bolted and calked, so as to make it watertight. It was built in sections, varying from 40 to 130 feet in length, floated into place between the working platforms, and sunk until it rested upon the top of the sheet piling. The joint between the roof and the sheet



CROSS SECTION, SHOWING TUNNEL COMPLETED WITHIN THE CAISSON.

piling was closed by T-irons, and a very satisfactory air-tight joint was secured. About five feet of mud was then dumped upon the roof, to keep it down in place with a firm bearing.

It was necessary to maintain the Harlem River channel navigation during the prosecution of the work, and consequently, only half of the river was closed at one time. This involved the inclosing of the work by two air-tight coffer dams. In the portion of the work shown in our illustration, one bulkhead was placed at the city bulkhead line, and the other near the center of the river, the total length of the working timber thus formed being about 216 feet. Near the center of the roof of the caisson was built up a rectangular timber caisson with the usual air lock, and in this were placed the pumps for taking out the soft material of excavation. Cylindrical iron material shafts were also built in, as shown in our engraving, these being, of course, provided with the usual air locks. A pressure of 10 pounds to the square inch of air was sufficient for operation; but it can be seen that this method of tunneling would be available for any practicable depth at which it was desired to carry on excavation. The leakage of air from under the roof during the work has been very small, and it should be mentioned that a remarkable degree of accuracy was reached, considering the difficult and unprecedented method employed.

After the water had been lowered in the working chamber, the work of throwing out the mud and other material proceeded without any difficulties whatever, and when the excavation had been carried down to the desired level, the concreting of the floor was begun and carried up around the head of the piles. These were then cut off, and spikes were driven into them, so as to give them a good grip upon the concrete foundation. After several feet of concreting had been laid, the cast-iron lining was put in place, the concrete carried up around it, and the tunnel completed. There now remained nothing more to do but cut out the upper length of the sheet piling, remove the working platforms, and leave the river unobstructed for navigation.

It is claimed by Mr. McBean that the present system would be perfectly applicable to the North River tunnel; and that because of the fact that it would be possible to open the work at several points at once, the tunnel could be constructed more rapidly than by the shield method.

Reorganization Succeeds Organization.

Judging from the number of reorganization plans that have made their appearance within the last few months, the period of organization appears to have given way to the period of reorganization, in so far as it applies to industrial companies. Among the concerns that are going through plans of reorganization are the United States Shipbuilding Company, United States Leather Company, American Bicycle Company, American Ice Company and American Grass Twine Company. Other concerns are considering the question of reorganization, the plans of practically all of which provide for a radical scaling down of capitalization.

Commenting upon this situation, the Bankers' Monthly remarks that promoters admit the period of mushroom corporations is practically over. They say that any attempt to float a company with an overabundance of water in its stock would meet with dismal failure. Four years ago it was an easy matter for consolidations to sell their stock. The public, with enormous profits in view, was willing and eager to buy it, but the heavy shrinkage in values that the majority of the securities of new consolidations have experienced has resulted in a decided change in the attitude of the people. Most of the recent consolidations have been carried through by means of an exchange of the stocks of the constituent properties for that of the consolidated corporation. No new stock to speak of has been offered to the public for subscription.

If there were any lingering doubt of this change in the attitude of financial interests toward new enterprises, the recent low record prices established by the stocks of some very reputable companies would bring conviction. The troubles of the underwriting syndicate of the International Mercantile Marine Company is a case in point. Here is a company including such thoroughly established concerns as the White Star Line, the American Line, the Red Star Line and several other important shipping companies.

It does not appear that the capitalization of this consolidation is excessive, although every man has his own opinion as to that. The only cause for apprehension on this point is the failure of the company to furnish the public with any sort of information on which an estimate of the worth of the securities may be intelligently made. Brokers admit that to buy the shipping securities is much like the business of school boys when they trade pocket knives, "sight unseen."

And this, it should be remembered, is a consolidation of going concerns, owning property of immense, though uncertain, value. Its creation was the work of the very highest order of financial and legal talent, not to call it genius, which America has to offer. In other times new enterprises backed by the same interests have been received by the public with open arms and have poured millions into the coffers of their sponsors. And the public has not always known any more about these earlier projects than it does now about this one.

To see the public in a violently contrasting mood, it is only necessary to go back a year, to the International Power episode. That a company in the hands of speculators, pure and simple, with a very limited foundation of demonstrated earning power, should have been able to put its stock to 200 with ease looks now like a verdict of insanity against a whole community. It is with reason that the question is asked in Wall Street, Where are the lambs? Not half a dozen are to be found in a day's search, which fact alone is pretty good proof that they have developed into comparatively intelligent mutton.

One Hundred and Thirty Miles an Hour.

Amid the intense excitement of a vast crowd, consisting largely of experts, the Siemens electric train on October 23 achieved the record speed of 207 kilometers, or about 129¾ miles per hour, beating the record of the last previous trial by six kilometers.

After the recent trial on the experimental Marienfelde-Zossen line, near Berlin, when a speed of 125 miles an hour was attained, the engineers declared that this would be exceeded, and that a speed of even 140 miles an hour was practicable. The tests have been going on for several weeks, and are being watched with great interest by the Emperor William. The Reichstag has devoted the sum of 280,000 marks toward the cost.