THIRD ANNUAL MEETING AND RUN OF THE AUTOMOBILE ENGINEERS.

The third annual meeting and test run of the mechanical branch of the Association of Licensed Automobile Manufacturers was held last week at Hartford, Conn., in which city is located the testing laboratory of the association.

The previous meetings of the mechanical branch have resulted in the adoption of standard sizes of screws and screw threads for use in automobile construction as well as standard sizes of tires. At this latest meeting, arrangements were made looking toward the adoption of a standard rim for quickly detachable tires. A committee was also appointed to meet with the board of underwriters of the fire insurance companies and adopt regulations and specifications for garages that would not be so obnoxious and onerous to the owners as those now in force.

The resolution which will be most widely appreciated by all owners of cars and those in the automobile industry, however, was that adopting as a standard formula for the determination of horse-power the following:

$$\frac{D^2 \times N}{2.5}$$

in which D = diameter of cylinders in inches, and N the number of cylinders, 2.5 being a constant. This is the formula used by the Automobile Club of Great Britain and Ireland, and a thorough testing of it has shown it to be remarkably accurate. All licensed cars will be rated under this formula, and this will do away with the useless double rating, which, in some of the new State laws, is made use of for increasing the tax when the horse-power is used as a basis. The formula gives the horse-power that any standard engine will develop at a normal speed of around 1,000 revolutions per minute. The various makers decided to send engines to Hartford to be tested in the laboratory of the association.

A very interesting paper on "Radiation" was read by Mr. Edward R. Hewitt, who discussed this subject from both the theoretical and practical standpoint. Talks on "Lubrication" were also given by representatives of several companies that manufacture mechanical oilers.

The run on the 10th instant was for the purpose of giving the engineers an idea of what their competitors' cars could do on the road. A trip of 30 miles south along the Connecticut River on the west side was made, the cars being ferried across at East Haddam, and making the return journey on the east side. Some steep hills were encountered upon the return trip, but no difficulty was experienced by any of the cars in climbing them. A notable feature of the run, in contrast with what would have been the case as late probably as three years ago, was that nothing whatever had to be done to the cars when the stop was made for dinner. Neither were there any breakdowns on the road. There were four controls in the trip of 62 miles, and the engineers changed cars at each control. All types of present-day, high-grade American cars were found among the twenty-one cars that participated. Our Editor rode in the new 8-cylinder Hewitt machine over the most hilly part of the route, and he was much impressed with the smooth-running qualities of this new type of motor and the ease with which it pulled the car up the hills. A Franklin air-cooled touring car was the only representative of the 6-cylinder type. Altogether, some seventy-five engineers and technical men participated in the run.

From a 209-mile endurance test between Harrisburg and York, Pa., which was conducted on May 6 and 7 by the Motor Club of Harrisburg, but four cars emerged with perfect scores. These were a 35-horse-power Pierce Arrow, a 40-horse-power Pullman, a 60-horse-power Thomas, and a 30-horse-power White steam car. The cars were obliged to make an average speed of about 20 miles an hour, which was readily done in the first day's run of 93 miles, since the roads, although good, bad, and indifferent, were dry. The second day it rained, and many of the fifteen cars that made a perfect score the first day lost it in the 40-mile run to York, which had to be made over a very muddy road in two hours. Thirty-one cars participated in this test.

The New York Motor Club will hold a 200-mile endurance run in one day on June 6. This is the longest run for a single day ever made in any endurance test in this country.

On June 19 the Automobile Club of America will start a 600-mile endurance run extending over four days. This is to be known as a "sealed bonnet" contest. The bonnets, transmission gear cases, etc., will all be sealed, thus making it impossible to make any repairs without breaking a seal. If this is done, the car is out of the contest. There are to be three classes —A, B, and C, the first being for stock cars without tops listed at $3,000 and over, the second for cars listed at $1,500 and less than $3,000, and the third for those listed at $1,500 and under. The minimum average speeds that must be made by cars in the three classes are 18, 16, and 14 miles an hour respectively. The runabouts in class A will be required to cover a total distance of 700 miles.

NEW COMMISSIONER OF PATENTS.

It is with much regret that we have to announce the resignation of Mr. Frederick I. Allen, who has been the Commissioner of Patents since 1901.

During Mr. Allen's administration the work of reclassification has been persistently carried forward. The Commissioner has had many difficulties to contend with in the many changes which have occurred in the Patent Office force during his incumbency.

The inventors of the country are to be congratulated that his successor is a man who was raised to this most important post within the gift of our government, not through any political influence, but because he has been recognized as the man best fitted professionally and by training for the position. Mr. Edward B. Moore, the newly-appointed Commissioner of Patents, is neither a theorist nor a doctrinaire. He is a man whose schooling has been received within the walls of the Patent Office. He has risen through the grades of Assistant Examiner, Law Clerk, Primary Examiner, and Examiner-in-Chief.

He was at one time head of the Interference Division, and has for several years acted in the capacity of Assistant Commissioner of Patents. This splendid training eminently fits him for the higher post which he now occupies.

His dominant qualities are those of fair-mindedness, with a highly judicial mind and an understanding of the technical side of the profession which he has for a long time embellished. He has a full knowledge of

MR. EDWARD B. MOORE, THE NEW COMMISSIONER OF PATENTS.

the defects and shortcomings in our patent system and within the Patent Office. It would be difficult to find a more available candidate for carrying out the work of the Department.

Mr. Moore was born at Grand Rapids, Mich., and entered the Patent Office in 1883.

FLIGHTS BY HOMING PIGEONS.

There exists in this country an association for racing homing pigeons, and races are frequently held throughout the summer months. The birds are shipped in crates by express to the various starting points, and there liberated at the appointed time. Each flies to its home, and, upon alighting, registers its time of arrival. The owner of the bird has to remove from its leg a small metal piece, and deposit it in a slot in the registering apparatus, thus unlocking it, before the registration can be made. Sometimes a long-distance race is won by a few seconds only. The distances are carefully measured from the starting point to each loft, and the average speeds of the birds are figured out very closely. The average speed of these birds in flights up to 500 miles in length is 46½ miles an hour. The following table gives the records for the different distances:

Distance. Miles.	Speed. Miles an hour.
100	85.63
200	64
300	63
400	58
500	54
600	44
700	52.73
836	17.38
1,000	4.14

The last two flights, the longest on record, were made in 2 days and 11 minutes and 5 days, 1 hour, 22 minutes, respectively.

About 20 per cent of the old birds that start in a 500-mile race never show up, while the loss of young birds in a 100-mile race is about 17 per cent. The birds are trained by taking them a certain distance away from home and releasing them. This is done a number of times, the distance being each time increased.

SCIENCE NOTES.

Intimation concerning two new species of animals, indigenous to Africa, has been conveyed to Europe by Mr. J. E. Speares, who has been spending several months in trapping and hunting big game in Portuguese East Africa in the regions surrounding Lake Nangadi and the Rovuma River. One of these refers to a new type of zebra, a whole herd of which the hunter observed near by, but a specimen of which he failed to secure. Many members of this herd were marked differently to the prevailing type of this animal, the heads and necks being brown, while the hindquarters were striped in the conventional manner peculiar to this quadruped. When the natives were questioned upon the point, they asserted that they were a variety of zebra, but that they were becoming very scarce. Although the hunter pursued the herd for several miles, owing to their agility and timidity, he was unable to approach them closely. Upon another occasion, however, he was more fortunate and secured a closer view of the animal. It resembles the zebra in shape, but the head, neck, fore-legs, and fore half of the body were quite dark brown in color, the hind part of the body, including the legs, being striped. He also discovered a peculiar type of antelope similar in size and shape to the Boer roebuck or impala, the distinctive difference being a black line down the center of the back and on either hind leg down to the foot. When the animal is startled it immediately takes to flight, the initial leap being fully ten feet through the air. This species of antelope is essentially gregarious, being found in herds ranging from ten to fifty in number, and is exceedingly wild and active. Mr. Speares also secured what is believed to be a new species of buck, which is perfectly hornless, about as large as a steenbuck, and possessing a brilliant red coat.

A discovery of remarkable Egyptological interest has been made by Mr. Theodore M. Davis at Thebes, by the excavation of the tomb of Queen Teie, one of the greatest names in ancient Egyptian history, since she was the mother of the famous Amen-hotep IV., the heretic king of the eighteenth dynasty. The tomb of this royal personage was found to bear the marks of the religious zealots, who carefully removed therefrom every trace of the peculiar pantheistic monotheism she endeavored to introduce into the country. The doorway, consisting of piled stones sealed with the royal seal, was found to have been broken down, the huge wooden doors torn from their hinges, the catafalque torn to pieces, and the mummified corpse itself turned over in order to erase the name of Amenhotep IV., which was originally inscribed on the sheet of gold upon which the body reposed. When excavated the tomb was found to still bear all these traces of the zeal of the religionists, effected during the period in which the country was in the throes of a religious revolution long before the time of Moses. The excavators found the tomb virtually lined with gold leaf, and fragments of gold were found on all sides. The coffin reposed upon a bier incrusted with gold, and was supported by four lions' paws, which were of the same precious metal. The coffin was perfectly intact, and is stated to be a magnificent specimen of the ancient Egyptian jeweler's handicraft. The wood of the coffin is entirely covered with a frame of gold inlaid with lapis lazuli, carnelian, and green glass. There is a hieroglyphic inscription upon the metal plate, to the effect that the coffin was prepared for Queen Teie by her son. The mummy itself was enwrapped from head to foot in sheets of gold, with bracelets on the arms and a necklace of gold beads and other ornaments executed in the same metal around the neck, while the head was encircled by a priceless object—the imperial crown of the queens of ancient Egypt. The crown, though of simple design, is of magnificent workmanship, depicting the royal vulture holding a signet ring in either talon, while its wings surround the head and by means of a pin are fastened at the tips, the whole article being fashioned in solid gold without any additional embellishment. This discovery is considered to be one of the most important from an archeological point of view that has been made in Egypt during recent years, affording as it does a priceless relic of the barbarous ornamentation and love of jewel embellishment which prevailed among the earliest Egyptians.

Waterproof Porcelain Cement.—Dissolve (I.) 10 parts of mastic in 60 parts of anhydrous (absolute) alcohol, (II.) 20 parts of isinglass in 100 parts of water and 10 parts of grain spirit, (III.) 5 parts of gum ammoniac in 25 parts of grain spirit. Thoroughly mix solutions I. and II., then add solution III. and boil the whole down to 180 parts.