

be maintained at all times. The compensating gear consists of a curved wire, *d'*, one end of which rests upon the roll of paper, while the other is attached to a vertical sliding bar, at the center of which is carried a horizontal stop-piece, *c*. When the paper is to be drawn forward, the stop, *b*, is released and the stop, *a*, engaged, the amount of rotation of the escapement wheel, *d*, being determined by the distance between the inclined face, *f*, of the arm, *e*, which carries the escapement pin, *a*, and the opposing face of the stop-piece, *c*. By this arrangement it will be seen that as the roll decreases, there is an equivalent increase in the amount of rotation of the escapement wheel, *d*, at each release.

TYPE-WHEEL: The type-wheel is a small disk of brass with the alphabet cast in soft rubber around its periphery. This wheel is capable of rotation, oscillation and lateral or transverse motion, these movements being secured in the following manner: In the first place, there is a helical mainspring, 4, extending entirely across the machine, which is kept under tension by two pawls, *T* and 8, operated respectively by magnets, *B* and *C*, as already described. This mainspring is in frictional contact with the shaft on which the ratchet wheel, *K*, is keyed, and one end of it is attached to and actuates a gear wheel, 17 (Fig. 5), which in turn rotates the pinion, 18, and shaft, 19. The shaft, 19, is clutch-connected by coiled springs, 50, with a triangular shaft, 20, on which the type-wheels, 3, and carriage, 21, slide, and by which the type-wheel, 3, is rotated. The smaller triangular shaft, 22, just below serves as a guide, and is engaged by the lower elbow of the carriage. The ink roller, 23, is carried on an arm of the carriage, and is inked every time it passes the ink brush of the ink tank, 24 (Fig. 5). Under the constant tension of the mainspring, 4, operating as described, the type-wheel tends to rotate in a constant direction, but is controlled by the escapement wheel, 2, which is operated by the magnet, *A*. The escapement is so arranged that a single pulsation of the magnet causes the type-wheel to rotate through the space of two letters. Thus, if the type-wheel is to be rotated through the space of six letters, there will be three pulsations of the magnet, *A*, three teeth of the escapement being allowed to pass. When this has occurred, the wheel is brought up in its approximate position, or midway between any two letters, and it is now necessary to move the type-wheel to the right or left just half a space, or 1/72 of a revolution, in order to bring the desired letter to the exact position for printing. This small movement is accomplished by means of the V-shaped, reciprocating, tooth, 24 (Fig. 1), which is controlled by a magnet, *E*. This tooth is pivoted at 55 (Fig. 5) on a rocking arm, whose movement is derived from the magnet, *B*, as shown in Fig. 5. The V-shaped tooth engages a star wheel, 25, which is carried on the same triangular shaft, 20, as the type-wheel. After the escapement has brought the type-wheel to the mid-position between two letters, the magnet, *E*, by means of the forked arm, 26, throws a small tongue, 1, to the right or left of a guide pin, placing it in such a position that, as the tooth, 24, comes up, its right or left-hand face will engage the star wheel, turning it 1/72 of a revolution to the right or left, according as the right or left-hand letter is to be brought into the printing position. The movements involved in these operations, acting by means of catgut, 11, and vertical rod, 13, on the contact points, 12 (Fig. 5), cut in the current for magnet, *D* (Fig. 1), which, by means of a pawl, 30, and ratchet wheel, 51, brings the impression roller, 27, forward and prints the letter on the paper.

The transverse motion of the type-wheel across the machine is accomplished by means of a cord (Fig. 5) which is attached at its center to the type-wheel carriage, 21, and extends parallel with the guide bar, 22, passes over two small pulleys at the end of this bar, and is wound at each end on two drums, 28. The drums are rotated by means of the ratchet wheel, 29, and the pawl, 35, at every pulsation of the magnet, *B*, each movement of the ratchet causing the type-wheel to travel transversely the space of one letter. The ratchet also winds up the helical spring, 5, on the shaft that carries the ratchet wheel and drums, and when it is desired to return the type-wheel for the commencement of a new line the pawl is automatically released, and the tension of the helical spring, 5, draws the type-wheel sharply back to the starting point, ready to commence the next line.

The printing done by this most ingenious little machine is remarkably even, and in its spacing and general typographical excellence it compares favorably with the best work that is turned out on the type-writer. We are informed that during the past six months over one hundred and fifty of these printing telegraphs have been put in operation in New York and Chicago, the number being limited by the capacity of the shop in which the machines are constructed.

In 1900 applications for patents in the United Kingdom amounted to 23,909. In the previous year the number was 25,775, showing a decrease.

TRANSPORT SERVICE TO THE PHILIPPINES.—I.

It is unfortunate that a certain branch of the War Department, whose duties are in many respects more perplexing, arduous, and, at times, heartbreaking, than those of any other branch, should be the least in the public eye, and be apt to receive the smallest amount of credit for its services. We refer to what is known as the Quartermaster's Department. The efficiency of an army has, in every age, been measured largely by the effectiveness of its methods of transportation; and the modern developments in the art of war have been such as to render the work of the Quartermaster's Department of greater importance than at any previous period. Never, surely, have armies depended more absolutely for their success upon an efficient system of transport than those which, during the past two years, have been engaged in the mountains and swamps of the Philippines and on the broad veldt and among the rugged kopjes of South Africa.

The Quartermaster's Department is not merely charged with the duty of providing means of transportation of every character, either under contract or in kind, which may be needed in the movement of troops and material of war, but it has a great variety of other duties, incidental to the equipment, housing and supplying of an army. It furnishes all public animals employed in the service of the army, the forage consumed by them, wagons and all articles necessary for their use, except the equipment of cavalry and artillery. It furnishes clothing, camp and garrison equipage, barracks, storehouses and other buildings; constructs and repairs roads, railways and bridges; builds and charts ships, boats, docks and wharves needed for military purposes; and attends to all matters connected with military operations which are not expressly assigned to some other bureau of the War Department.

Beyond being aware of the fact that we have a considerable army in the Philippines, which is recruited and furnished with supplies from this country, the general public has but little knowledge of the vast amount of labor and expense entailed in the mere transportation of troops and supplies to those far-off islands of the Pacific. It is a fact that at one period of the war the fleet of army transports numbered no less than seventy large ocean-going ships, this being the number engaged at the time when the volunteers were being brought home and the regular army carried out to Manila. As this work was completed the transports were gradually discharged from service, until, at the present time, the fleet consists of twenty-six transports owned by the department, and eleven vessels which are employed under charter, making a total of thirty-seven vessels. The magnitude of the operations of the Quartermaster's Department may be judged from the fact that during the past fiscal year transportation was furnished by rail, water, wagon and stage, exclusive of the Army Transport Service, for 747,399 persons, 18,455 animals, and 328,801 tons of freight; while the army transports carried 104,422 passengers, 13,397 animals, 310,683 tons of freight, and 2,523,836 packages.

The army transports range in size from the "Ingalls" of 1,147 tons, and a carrying capacity of 26 officers and 260 men, up to the "Grant" of 5,658 tons, and the "Sheridan" of 5,673 tons, the former with accommodation for 68 officers and 1,836 men, and the latter accommodating 93 officers and 1,843 men. Six of the transports are of from 5,000 to 6,000 tons, these being the "Grant," "Hancock," "Logan," "Meade," "Sheridan" and "Sherman;" three, the "Crook," "Sedgwick" and the "Warren," are of between 4,000 and 5,000 tons burden; six vessels, the "Buford," "Kilpatrick," "Lawton," "Relief," "Sumner" and "McPherson," measure from 3,000 to 4,000 tons burden; while five vessels, the "Burnside," "Egbert," "McClellan," "Rawlins" and "Rosecrans," are of from 2,000 to 3,000 tons. Of the chartered ships, two, the "Indiana" of 2,484 tons, and the "Pennsylvania" of 3,166 tons, are used as troop ships, while the other nine, which are vessels of from 3,500 to 5,000 tons displacement, are used for the transportation of horses and mules, and live stock. The chartered vessels cost from \$650 to \$700 per day for charter alone.

The army transports are fine, seaworthy vessels, many of which like the "Meade," which was formerly the "City of Berlin," had previous to their purchase done duty for a considerable number of years in the transatlantic passenger trade. Others of the transports were vessels that, although they were built primarily as freighters, were furnished with a considerable amount of accommodation carried on superstructure decks amidships. When a transport is purchased she is sent to a shipyard where she is carefully surveyed and a very comprehensive specification is drawn up for her refitting and renovation. The special requirements of the transport service necessitate a large amount of structural refitting, which, together with the furnishings and accommodations for officers and men, bring the cost of reconstruction to a very high figure. In the first place, the hold of the vessel must be adapted to carry the class of cargo required for

army purposes, the hatches and holds being so rearranged that the stores necessary for the subsistence of from 1,000 to 1,500 officers and men, for seventy days, may be at all times accessible. This necessitates that about 175 tons of provisions be placed so that they can be drawn upon daily as required. Provision must be made for keeping a large amount of meat in storage; vegetables must be stored in special gratings under lock and key; and various other special fittings must be put in place. A complete system of ventilation has to be installed; for where such large numbers of men have to be confined between decks, much of the time in tropical climates, special appliances are necessary for drawing off the polluted air and supplying large volumes of fresh air. The ventilation usually consists of four fans carried on deck, which are capable of supplying from 75,000 to 100,000 cubic feet of air per minute. The air is delivered to fore and aft lines of galvanized iron conduits, which extend the whole length of each of the living spaces. From these mains, numerous branch lines extend athwartship. The foul air is carried off either by exhausting fans or by means of uptakes and ventilators. Steam coils are provided in the conduits by which the air can be warmed, as required, in the winter.

The distribution of officers and men and supplies in two of the latest and best of the transports, the "Kilpatrick" and the "Buford," is as follows: The hold is devoted entirely to freight; the orlop deck above the hold contains the refrigerators and storerooms; the between deck is given up entirely to sleeping accommodation; the main deck contains two separate lavatories, two separate mess decks, and sleeping accommodation. The spar deck contains the hospital, officers' staterooms amidships, and spaces for the promenading and recreation of the troops; while the promenade deck contains other staterooms and is reserved entirely for the use of the officers.

One of our illustrations shows the sleeping accommodation on the between decks. The bunks are arranged in tiers of three. They are of a type which has been designed with a special view to ventilation and cleanliness. It was found that it was absolutely impossible to use the old mattress bunk, and at the same time keep the sleeping accommodations free from vermin. Moreover, in the hot and muggy atmosphere of the tropics the mattresses were stuffy and uncomfortable. The standard type of bunk herewith illustrated is known as the Lane-Irwin. It is carried on four standards of 1½-inch gas-pipe. The bed proper consists of a stout piece of canvas laced into a gas-pipe frame, the frame being in turn laced to the sides of the bunk. These bunks have been found cool and comfortable in the tropics, and they have the great advantage that the canvas bottom can be unlaced and washed. In the hospital the beds are, of course, provided with mattresses, and they are arranged only two deep. The floor, moreover, is carpeted with linoleum, and other measures are taken to provide special comfort. The mess deck is provided with tables and benches with folding legs, which are so constructed that they can be folded into a very small space and stacked away in racks at the side of the deck, leaving, as shown in our illustration, a large open space for promenading and recreation. The refitting of the transports necessitates the thorough overhauling of the plumbing and piping, and the provision of many thousands of feet of new lines. Much of this new piping is of copper and brass, and the lavatory fittings are of solid porcelain instead of porcelain-lined ware, which is found to give only indifferent service. By the time the transport has been thoroughly renovated and refitted the cost has run up to a pretty high figure, not far short, indeed, in the largest vessels, of half a million dollars, the actual cost of refitting the "Buford" at Newport News being \$397,637, while the cost of refitting the "Kilpatrick" at the docks of the J. N. Robins Shipbuilding Company, of New York, was \$408,000.

It is the aim of the Quartermaster's Department to run transports, if possible, with a full load of freight. Some of the larger vessels carry as much as 2,000 tons of cargo, in addition to a complement of 1,900 officers and men. It has been found that if the ship has a full complement and full cargo, transportation can be carried on very much cheaper by the Quartermaster's Department than it can be by shipping troops and supplies by the various steamship companies. Thus, one voyage of the "Crook" from New York to San Juan and return cost \$9,761.39, whereas the cost estimated at the current rates of civil lines of steamships would have been \$19,907, a saving of \$10,145.61. Another voyage of the "Crook" from New York to San Juan and back would have cost \$26,419.29 had the men and supplies been carried upon regular lines, whereas the actual cost by the transport was \$14,062.94, a saving of \$12,356.35. It is the opinion of Major Carroll A. Devol, the general superintendent of the Army Transport Service, to whom we are indebted for our illustrations and particulars, that although good results, as shown by these figures, are being obtained under the present system of purchase and reconstruction of ships, even better economy could be realized if the department

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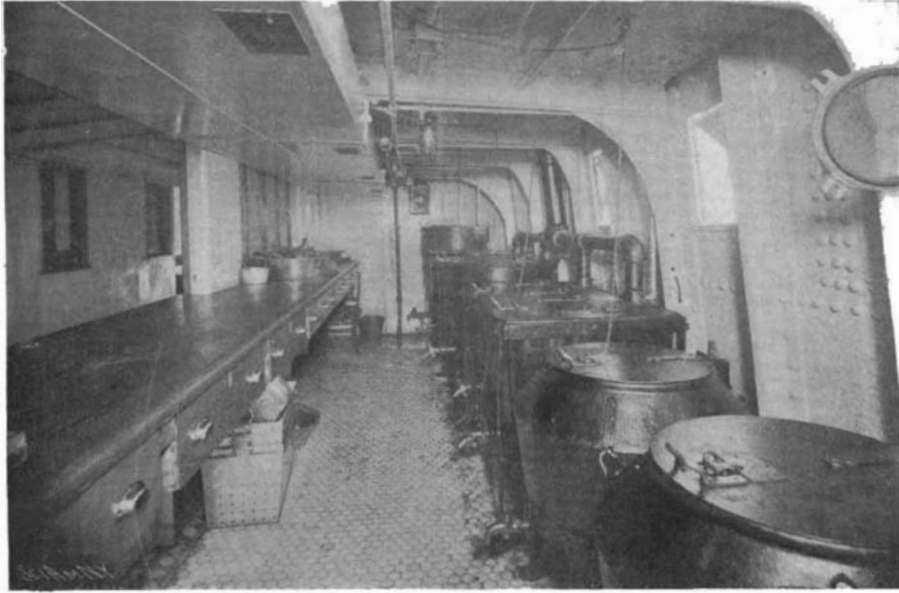
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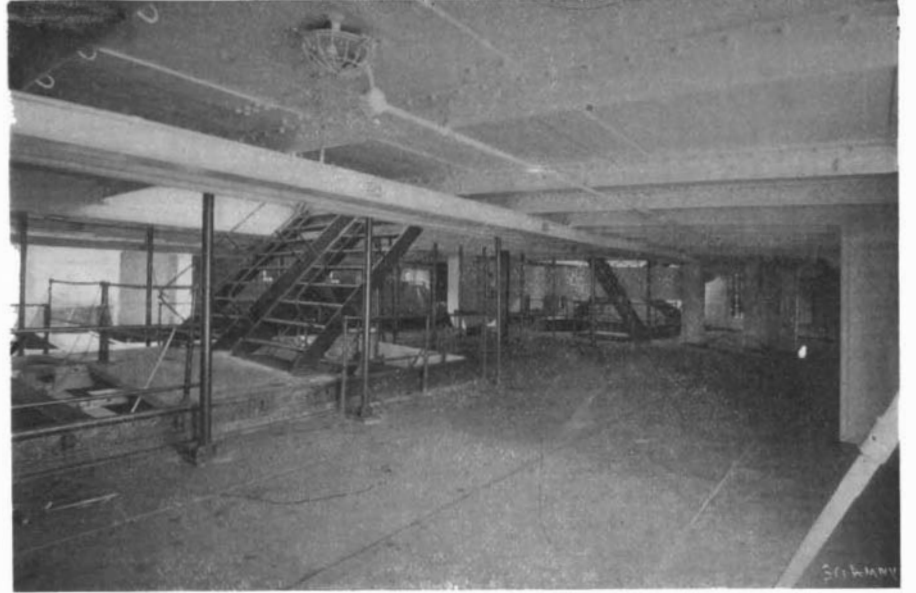
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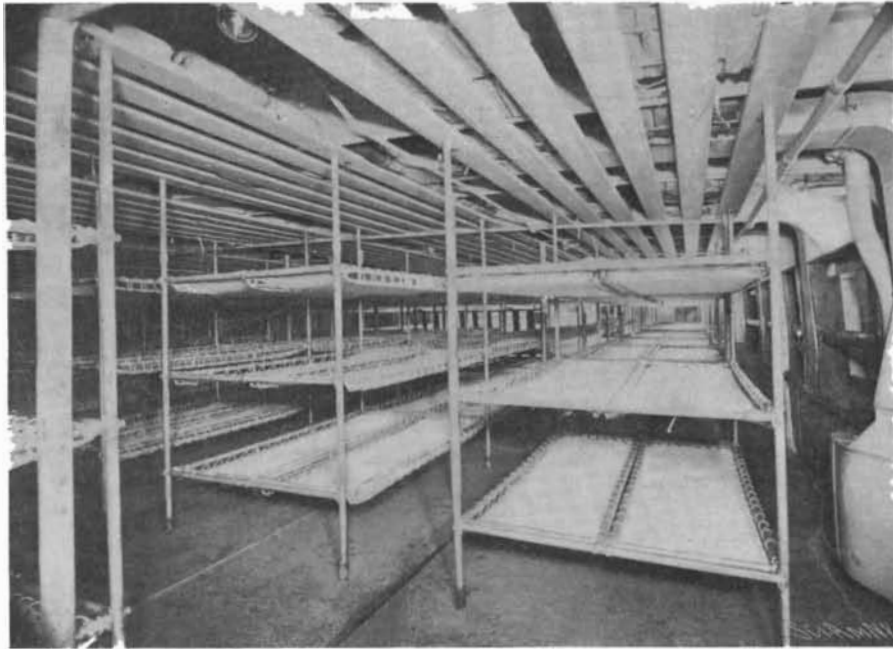
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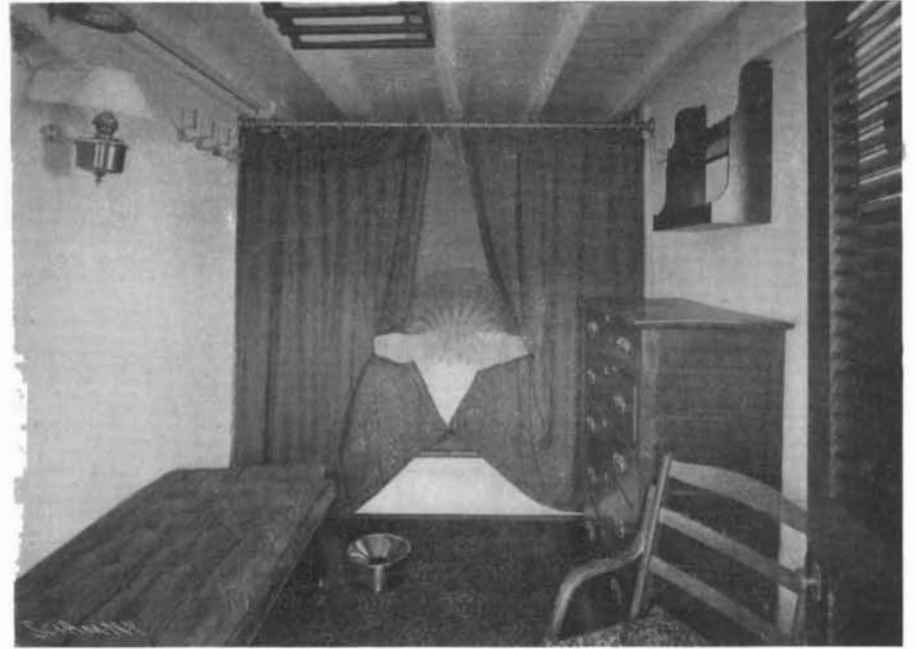
Kitchen with Steam Kettles.



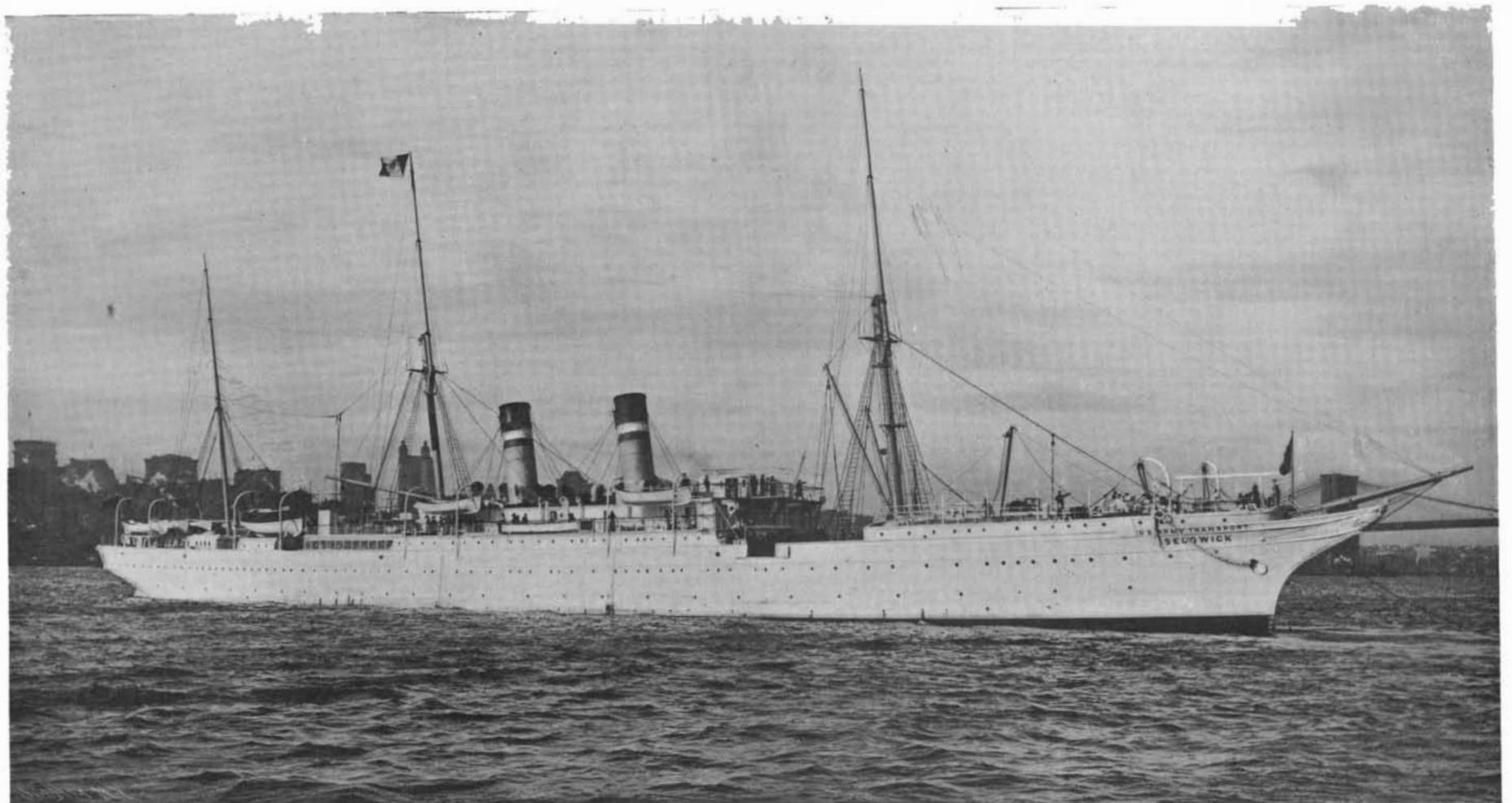
Mess Deck; Tables Cleared Away.



Sleeping Accommodation, Showing New Army Bunks.



An Officer's Room, Hurricane Deck.



Transport "Sedgwick," 4,770 Tons. Formerly "City of Chester." Carries 69 Officers, 1,000 Men, and 1,180 Tons of Freight.
ARMY TRANSPORT SERVICE TO THE PHILIPPINES.—[See page 182.]

were to design its own ships and embody in them all the experience which has been gathered in the Spanish and Philippine wars. In conclusion, we are glad to be able to state that letters have been received by Major Devol from both officers and men on their arrival at Manila, stating that the system of accommodation as carried out on our transports is very successful, and that the spaces devoted to sleeping accommodations for the men had, indeed, been found to be, in the tropics at least, the best ventilated and most comfortable portions of the ship.

Automobile News.

After a two-year struggle with Chicago's bad streets the Illinois Electric Vehicle Company, operating a hundred auto cabs, has decided to go out of existence. Word to the effect that the directors of the cab company would recommend the winding up of the company early next month was given out. The directors say that at the present time Chicago is not ready for modern improvements in the way of electric cabs.

The road which has been in construction for some time past in Madagascar, from Tananarive to the coast, has recently been finished, and this will give a new impetus to affairs in the colony, especially in the matter of transportation, as formerly all the goods brought to the capital were taken across the country by native carriers. The opening of the road will no doubt be followed by the use of the bicycle and the automobile. A number of different transportation enterprises are now on foot, and several of these are to use automobile systems. It may be remarked that the last 40 miles of the road, which was laid through the forest, was finished in the space of three months by a force of 25,000 men.

The London Electric Omnibus Company, in its last council meeting, decided to adopt an electric omnibus system in preference to traction by electric tramway. The report concludes by demanding of the stockholders the amount necessary for the construction of three hundred omnibuses of small pattern, the price of each being estimated at \$2,200. The total of \$660,000 thus furnished will equip the system on a large scale. London is thus taking the lead in the question of electric omnibus traction, following the example of Berlin, the only city of Europe where the electric omnibus has come into use to any extent. The latter, it will be remembered, have been constructed by Siemens & Halske, and work with accumulators in most of the streets, using the trolley wire when they pass along the line of the tramway.

A number of automobile tours are being organized for the coming season. Among these may be mentioned the tours of England, Italy, and Belgium. The tour of Belgium, as organized by the Automobile Club, will consist of seven stages; it is to be held in the latter part of July. The seven days of the tour include the following routes: First day, Brussels—Malines—Antwerp, 26 miles; second day, Antwerp—Liège, 75 miles; third day, Liège—Spa, 30 miles; fourth day, Spa—Namur, 45 miles; fifth day, Namur—Charleroi, 25 miles; sixth day, Charleroi—Ghent, 66 miles; seventh day, Ghent—Ostend, *via* Bruges, 35 miles. The prizes will include gold, silver, and bronze medals, besides a prize of \$800. At Ostend, the terminal point of the excursion, will be organized a series of races, as well as an automobile exposition.

The Automobile Club of France has finally decided upon the three champions who are to represent it in the International Cup race. These are Charron, Levegh and Girardot. Charron won the cup last year, and has besides made many notable records. In 1897 he won the Paris-Dieppe race, and in 1898 the Paris-Bordeaux over René de Knyff; he also gained the Paris-Amsterdam race of that year. In 1899 he was victor in the Paris-Bordeaux race, and made the record in two stages of the Tour de France. Last year he was second to René de Knyff in the Nice-Marseilles race, but won the Gordon Bennett Cup over the latter and Girardot. It will thus be seen that his career has been a successful one. Levegh commenced to make his record in 1898 in the Paris-Amsterdam race, where he was seventh, but in 1899, with a four-cylinder machine, he won the last stage of the Tour de France, from Nantes to Cobourg. Shortly after he came out first in the Bordeaux-Biarritz race. In September, 1899, he made a dead heat with Girardot for the first place in the Paris-Ostend, beating Charron and Lemaitre, and in the Paris-Boulogne was second to Girardot. Last year he won the coast race, Nice-Turbie, and the mile dash at Nice, and carried off the honors in the Paris-Toulouse, the great race of the year. Girardot was called for a long time the "eternal second," as, in fact, he was second in most of the 1898-1899 races. He carried off his first victory in the Paris-Ostend, and then in the Paris-Boulogne, after having been second in the Tour de France and the Paris-Amsterdam. He won the Périgord Cup and was second in the International Cup race. It will be seen that the Automobile Club has made a wise choice of the defenders of the cup for this year.

Correspondence.

The New Armored Cruisers.

To the Editor of the SCIENTIFIC AMERICAN:

During the past few years I have been greatly interested in naval matters, and of late I have been particularly interested in the correspondence relative to our new armored cruisers of the "California" and "Maryland" types which has been published in your issues of February 9 and 16 and March 2. It would certainly seem that, in view of their great size, these ships are deplorably weak in battery power. To remedy this defect, your correspondents have suggested the addition of four 8-inch guns to their present battery of four 8-inch and fourteen 6-inch rapid-firers. While the adoption of this plan would successfully overcome their inferiority in offensive power, it would also necessitate the entire re-arrangement of their 6-inch and secondary batteries, with the possible sacrifice of some of the 3-inch rapid-fire guns. This would occasion a re-apportionment of weights and changes in design which, on consideration of the fact that the contracts for these ships are already (or about to be) signed, might be undesirable.

Would it not be a better and simpler plan to substitute 7-inch rapid-fire guns in place of the 6-inch rapid-firers? This would involve slight modifications in the gun positions, a reduction in the number of rounds of ammunition per gun, and an increase in the total displacement of the ship, but the enormous increase in muzzle energy would more than offset these inconveniences. Although there is no 7-inch gun in existence in our navy at present, I notice by your issue of December 22, that there is an experimental gun in process of construction. As it will be two years and a half before the batteries can be installed on these new cruisers, there will be ample time for the Bureau of Ordnance to ascertain the merits of this gun by practical tests, and commence the construction of others.

The details of the 7-inch gun are unknown to the writer, but it would not be unfair, it seems to me, to assume that its projectile will weigh about 175 pounds, and that the combined weight of gun and mount will not exceed that of the 6-inch gun by more than 10 tons. These dimensions are adopted arbitrarily as a result of observing the data of the 7.5 Vickers-Maxim rapid-fire gun, a description of which was published in your issue of January 12. On our new cruisers, 140 tons is allowed for the 6-inch ammunition supply, at the rate of 200 rounds per gun. Thus, the substitution of 7-inch rapid-firers for the present battery of 6-inchers, with the reduction of the ammunition supply to 150 rounds per gun, would make an increase of about 44 tons in weight of ammunition, and 140 tons in the weight of the guns and mounts, or 184 tons in all, a comparatively small item in a 13,800-ton ship. Also, a gun firing a 175 pound projectile at a velocity of 2,900 foot-seconds, or more, would be as much superior to the 6-inch gun as the 6-inch rifle is to the 5-inch, both in penetrative and destructive power.

There is no cruiser afloat to-day which could stand up before the tremendous amount of energy concentrated in a battery of four 8-inch and fourteen 7-inch rapid-firers, and even the new Italian ships (whose design calls for a battery of twelve 8-inch rapid-firers) would find their match in the "California." At some time in the near future, the many improvements in the resisting qualities of armor of moderate thickness will render the 6-inch weapon useless at the ordinary battle ranges. Indeed, I understand that it is with a view of meeting such a contingency that the 7-inch and 7.5-inch guns have been designed. Why, then, do we not follow the principles of the old maxim, "An ounce of prevention is worth a pound of cure," by forestalling the contingency? Why do we not hold true to our traditions of the War of 1812 by placing our new cruisers in the same relative positions as our famous old frigates which carried 24-pounders where their opponents carried 18's? Why, in the name of common sense, do we not build ships which will carry heavier batteries than those of 4,000 or 6,000 tons less displacement which were designed three or four years ago? If fighting is the primary object of a warship, it would certainly seem that her offensive power should not be made of secondary importance to other qualities in her make-up.

Your correspondents complain, and justly, that a deplorable deficiency in offensive power is also to be found in the semi-armored cruisers of the "St. Louis" type. Could not their defect be remedied in the same manner as that suggested for the "California" and "Maryland" types? It is earnestly to be hoped that our naval constructors will see fit to bring these fine ships up to the superior standard of excellence which they have attained in the latest battleships.

The events of the last three years have heightened public interest in the navy to an unusual degree, and I am sure that a large number of your readers are keenly

interested in the naval information which appears in such generous quantities in your columns.

PAUL D. EMMONS.

East Boston, Mass.

Engineering Notes.

A controversy over the asphalt lakes in Venezuela has been adjusted and the case will be heard in the local courts.

The Metropolitan and District Railways of London have suffered severely owing to the competition of the omnibuses and the Central London Railway. They have been losing at the rate of \$7,000 a week for the last half year, and the District Railway has decided to adopt electric traction. The change can be effected at a moderate cost and in a short time. The directors have been given full power to raise additional capital.

There was a substantial increase in the traffic through the Suez Canal in 1899. Three thousand five hundred and three vessels passed through the canal in 1898; in 1899 the number was increased to 3,607, representing an increase of 104 vessels and a gain of 657,017 tons. The average time consumed in passing through the canal in 1899 was eighteen hours and thirty-eight minutes, about half an hour longer than was necessary during the previous year.

The consumption of ice in Brazil is constantly increasing. This is due principally to the demand for ice in restaurants, hotels and other public places. Foreigners are most insistent in their calls for ice. Our consul at Santos is of the opinion that an ice company would prove a profitable undertaking in that place, the use of ice being practically unknown in the fish, vegetable and meat markets. He also thinks the American refrigerator would sell well in Brazil.

The first stone bridge with ring stones built in the United States is claimed by the town of Ipswich, Mass. It was built by the town and county in 1764. The builder was Col. John Choate. There are two spans, each of 28 feet. When the time drew near for the falsework to be removed the inhabitants of the town became greatly excited, and people thought it would not stand its own weight. Col. Choate had his horse ready to take him out of the country if the bridge fell. The falsework was successfully removed, however, and the bridge still stands, although it trembles a little with a heavy team. It was widened in 1838.

It is proposed to renovate London Bridge at a cost of \$500,000. The footways are to be widened from their present width of nine feet to fourteen feet. A new granite corbeling is to be provided; the parapet will be reconstructed upon an open design so that the dust may escape into the river below; and the center of the bridge is to be brilliantly illuminated. The question arose as to whether the existing foundations of the structure would be sufficiently strong to support the suggested additions, but the report of Sir Benjamin Baker, who made a careful survey of the bridge, is affirmative. It is proposed to carry out the work immediately. When the Tower Bridge was opened, it was generally considered that the new means of communication between the north and south sides of the river would considerably relieve the stress of traffic over London Bridge, but the decrease in the traffic over the latter bridge is scarcely appreciable.

A new English port of call is to be established at Dover for the transatlantic liners plying between New York, Germany and Holland. The scheme has been in embryo for several years, but the construction of necessary accommodation for the vessels, in which the port is at present deficient, would have entailed such a heavy expenditure that it was abandoned. Since the Admiralty Department commenced operations upon an immense national harbor, the contract for which amounts to \$20,000,000; and have notified the municipal authorities that the Admiralty pier, which is at present used as a landing stage for the steamers plying across the Channel, will be required for national purposes; and that there was considerable danger of the shipping trade of Dover being transferred to another port containing better accommodation, it has been decided to carry out immediately the construction of docks, piers, warehouses, etc. A new pier for the berthing of the steamers is to be erected and will be completed in about four and a half years' time. It will extend parallel with the present Admiralty pier, and will be 1,600 feet in length, and 350 feet in width. There will be eight sets of railway tracks to provide accommodation for ten or twelve trains at a time, and there will also be four landing stages for the steamers. The pier for its entire length will be covered, thus converting it into an immense railway station. The building of this part of the work alone will amount to \$1,110,000. A pier has just been completed at a cost of \$2,750,000. An extensive commercial dock with quay space extending to 14 acres, which is in course of construction, and which will provide berthing accommodation for vessels of the proportions of the "Oceanic," will cost \$6,250,000.