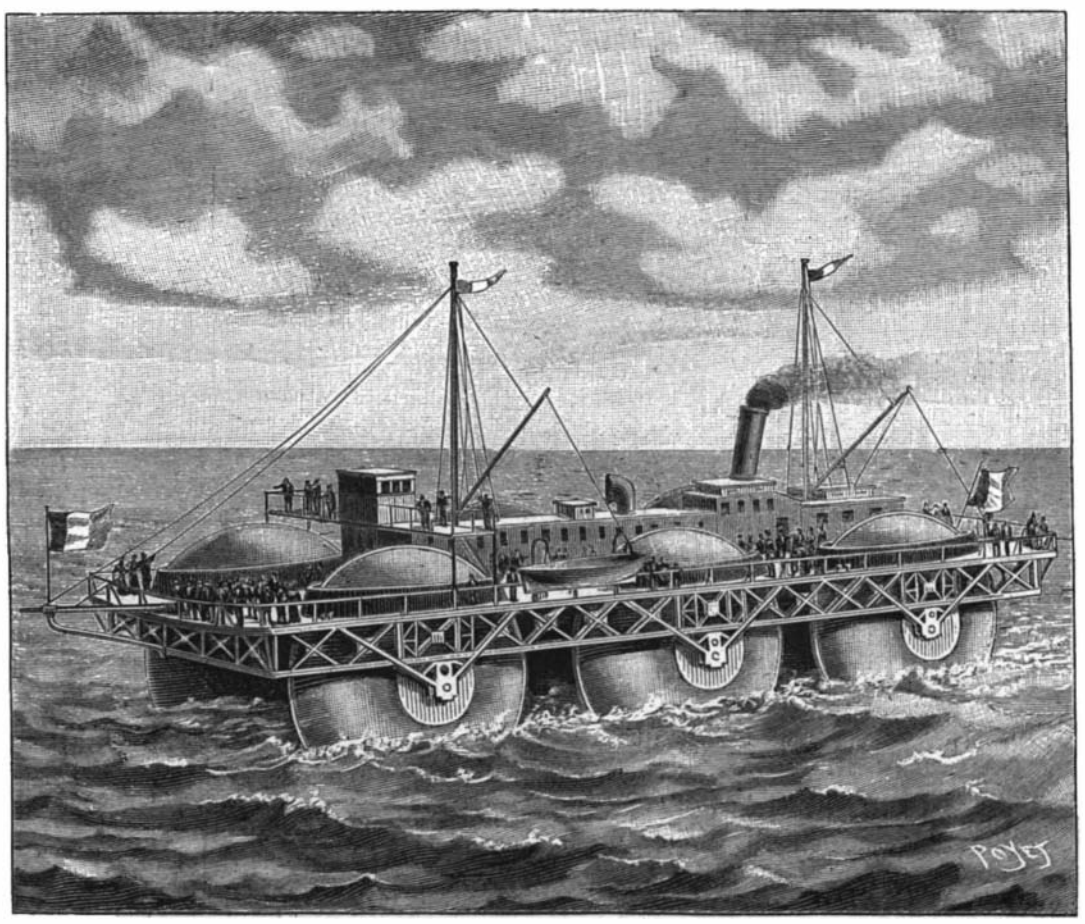
THE BAZIN ROLLER SHIP.

Shipbuilding and naval circles are interested in a new type of vessel which has recently been launched in France. The Bazin roller ship, according to newspaper accounts, tends to revolutionize modern shipbuilding practice by the phenomenal speed allowed. The extraordinary vessel shown in our engraving was launched at the Cail dockyards on the Seine at Saint Denis on August 19. It is called the Ernest-Bazin, and, in brief, it consists of a rectangular iron frame or platform (carrying deck houses) about 120 feet long and 40 feet wide, mounted on six hollow lenticular rollers, each some 39 feet in diameter. The thickness of these rollers is about 12 feet. The shell or skin of the rollers is applied to strongly braced skeleton work which will prove effective against the crushing force of the waves. Only one-third of the roller is submerged. A 550 horse power engine actuates the screw propeller, which rotates in an inclined plane between the pairs of rollers.

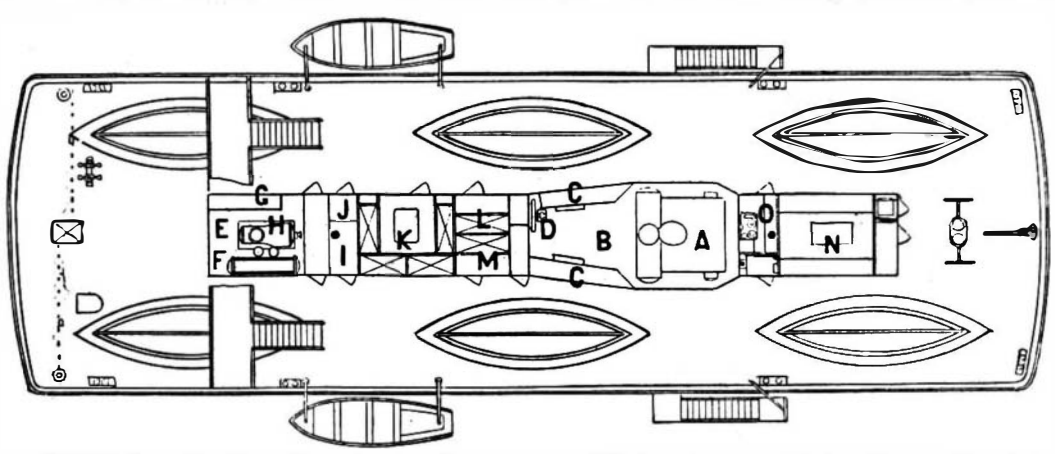
The rollers are connected together in pairs, each pair being actuated by a fifty horse power engine; so the entire set of rollers are actuated by engines aggregating 150 horse power. It is hoped that by the use of the rollers the friction of the water will be reduced to the minimum, it being the theory of the inventor that the boat should roll over the water without cutting through it. The strain is not longitudinal but vertical, and the inventor hopes that the "bite" of the roller on the water will be analogous to that of a car wheel on a sanded rail, only, of course, allowance being made for the mobility of the water.

The principle of the new boat may be readily understood by making a hollow lens-shaped roller out of tin, so that it will somewhat resemble two saucers fastened together. If this disk be plunged into the water and pushed forward, it will go ahead for some distance before being stopped by the resistance of the water; but if, before it is pushed along the water, it is given a sharp rotary movement by means of a spindle, it will be found that the disk will saw the water instead of beating it, and that it will cover several times the distance that the disk did when it was simply pushed through the water.

Speed is not the only advantage claimed for the new boat. It is said that the stability will be greater than in the present steamer, and in consequence the passengers will suffer less from seasickness, and it is claimed that the passengers will have more light and air. If the great speed is attained with these vessels that is anticipated, the length of voyages will be diminished, so that the consumption of coal may be lessened, and, as a natural result, passengers and freight will be transported at far less expense than heretofore. It is also expected that under the new system the coal economy will be very great, the inventor claiming that the use of his system will make a difference of one-half in the coal consumption. He expects that a transatlantic steamer built after his system can make 32 knots with a capacity of 10,000 horse power, and at the same time carry six hundred tons of merchandise more than the great ships Campania and Lucania, which make 20 knots per hour with engines which aggregate 30,000 horse power. The ordinary freight boats can, it is claimed, be run economically with a speed equal to our present fast transatlantic steamers. Of course, these views are not held by the average shipbuilder or owner. It is also asserted that the catastrophes at sea would be greatly decreased by the use of rollers. In case of collision or other accident, though some of the rollers might be damaged, some would almost certainly escape damage, and two would suffice to keep the vessel afloat and take her into port.



THE BAZIN ROLLER BOAT AT SEA.



A, boiler; B, boiler room; C, coal bunkers; D, ventilator; E, engine room; F, condenser; G, water tanks; H, engine; I, store room; J, lamp room; K, cabin; L, captain's stateroom; M, engineer's stateroom; N, saloon; O, galley.

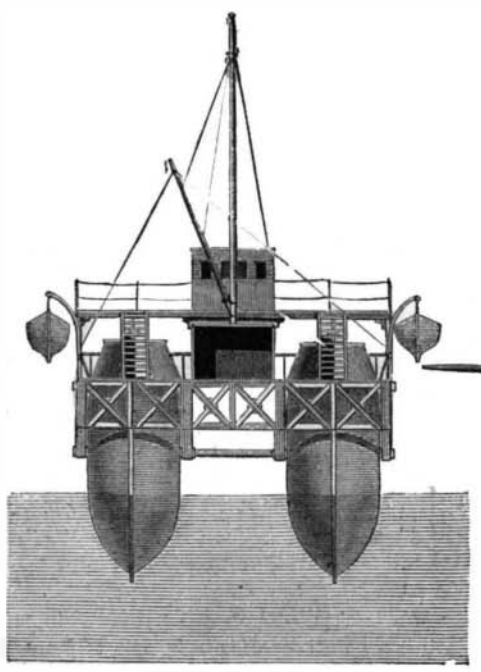
DECK PLAN OF THE ERNEST-BAZIN.

His first experiments were made with a small model, the rollers of which were moved by clockwork, the propeller being replaced by a weight, which was attached by a string passing over a pulley to the front of the boat. When the rollers were not working the miniature boat took 22 seconds to cross from one side of the large vessel in which it was placed to the other side. When they were working it took only 11 seconds. As the power necessary to keep the rollers at work is only one-quarter of the power that is required to keep the screw going, the mathematical result is that the speed of the vessel is doubled by an extra expenditure of power which amounts to only one-quarter.

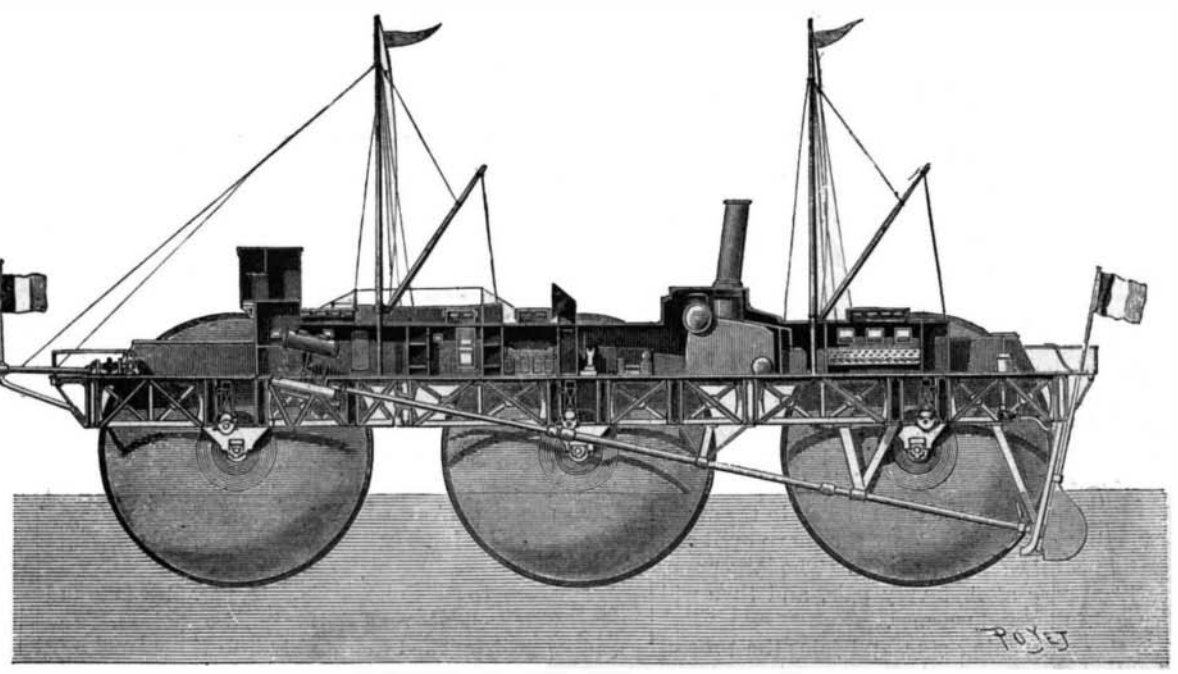
We are indebted to L'Illustration for several of our engravings. They present the leading features of the vessel and represent her before she was launched. It will be seen that the design of the vessel seems to be well adapted for the short, choppy sea of the English Channel, which is a classic spot for the trial of new types of vessels. The Ernest-Bazin will descend the Seine, cross the channel and go up the Thames to London. If the experiment is successful, a large transatlantic steamer, with probably eight rollers, may be constructed. At the present time the boat is chiefly interesting as a curiosity.

It would seem that if the present system were elaborated for more extended service that little space would be available for passengers or freight; but it is possible that the inventor intends to modify the design so as to meet these conditions. Whatever the outcome of the trial may be, the inventor deserves all credit for his perseverance and spirit in putting his ideas into practical shape for experiment, and the whole plan is so original that the results of the trial will be watched with the greatest interest.

A STEEL wire fly wheel, twenty-five feet in diameter and requiring two hundred and fifty miles of wire in its construction, has been made in Germany.



BOW VIEW.



SECTION FROM BOW TO STERN.

In the September Sky.

The September sky will be alive with clustering constellations that shine with renewed luster in the crisp and pure autumnal atmosphere. Among them may be noted the great square of Pegasus rising in the east, and low down in the northeast is the lovely cluster of the Pleiades. The three stars, Arcturus, Vega, and Capella, known as the northern brilliants, are especially worthy of observation, for they are all visible, and opinions differ as to which is the brightest of the trio. At the close of the first third of the month Arcturus is the brilliant red star near the northwest horizon, and is at the terminus of a line from the North Star through the end star in the handle of the Dipper. Vega, the superb star, high in the north, not far west of the meridian, and Capella will be found in the northeast, outshining its neighbors. The three stars form together an irregular triangle. But planets and stars will lose their luster when toward the latter part of the month the almost full face of the harvest moon shines in the eastern horizon, just a short while after the sunset glow has disappeared, and rises slowly to the zenith, putting out the light of the fainter stars.

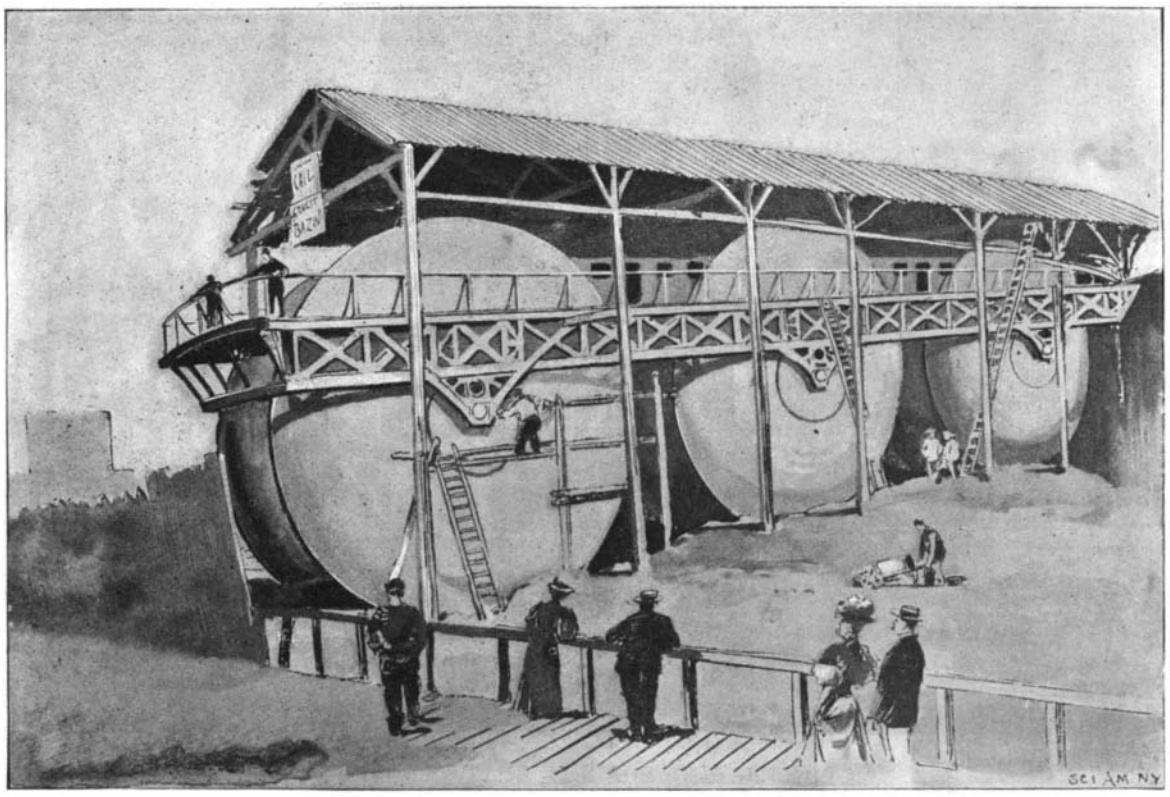
The September moon is new on the 7th and passes through the phase of quartering on the 13th. On the 21st it is full moon, a few hours in advance of the time the sun crosses the line, and astronomical autumn begins. The last quarter takes place on the 29th. The series of lunar conjunctions begins with Jupiter early on the 6th, and it is a very close meeting indeed, but the planet has been too recently in conjunction with the sun to admit of our seeing his face just at present, and so the human eye is not permitted to dwell upon what must be a beautiful picture. On the 8th Venus and the three days' old crescent are in line, but all too far apart to prove particularly attractive, although any tableau in which these two take a prominent part is well worthy our admiration. Mercury, on the 9th, is fairly close to the moon, and, as we can see this elusive planet on that night, it will be a somewhat rare spectacle, although there are more than two degrees of clear sky between the principal actors. Saturn's turn is next, on the 11th, and Uranus a few hours later the same day, but beyond a mere passing notice there is nothing to be said of these meetings. There is now quite a number of days intervening before the next meeting, which is with Neptune on the 28th, the list closing three hours later, with a meeting between the moon and the warlike planet.

Jupiter having been in conjunction with the sun about the middle of the last month, has now become a morning star, and will shortly assert himself as the most conspicuous object in the early morning sky, although just at present his whereabouts are not disclosed to the unaided human vision, owing to a too close proximity to the sun.

Venus has taken her familiar place in the western sky, where she can be seen shining among the ever changing sunset glow, not too brightly perhaps just at present, but giving promise of better things to come and cheering us with the assurance that she has come to stay as long as 1896 remains on the calendar. She wrested the sovereignty of the evening sky from Jupiter, whom she drove entirely out of her realm, and who will not again attempt to rival her this year.

Mercury on the 9th is in conjunction with the moon, and soon after the autumn sunbeams have ceased to dart their gay delights about the western horizon we can see the planet shining for a while above the line where earth and sky seem to meet. On the 13th the planet reaches his point of greatest distance to the eastward of the sun, which is 26 degrees 43 minutes away from that body. This is the last time for this year that the Mercurial pendulum will swing to the far eastward, so those caring to have a look at the planet will have to do so very soon or give it up until after the new year arrives. On the 24th Mercury, moving to the westward, is in line with Venus on her way in the opposite direction, but at that time only the sharp eyed can readily distinguish the smaller planet. The larger one, however, will appear at first very pale, and then will grow fuller and fuller and warmer.

Saturn is also an evening star, and joins the procession of brilliants that majestically move toward the west. The conjunction with Luna on the 11th is not deserving of more than passing notice, as there are almost eight degrees of clear blue between the two. Saturn is moving with accustomed dignity toward conjunction with the sun, where he will arrive in the early part of November, and after which he will be a morning star. In size and brilliancy, the wonderful ringed planet is gradually fading, and will continue so to do until after his period of transition from evening to morning star. Neptune is in quadrature, or 90 degrees away from the sun, on the 12th, on his way toward opposition, where he will be due in December.



LAUNCH OF THE ERNEST-BAZIN ROLLER VESSEL.

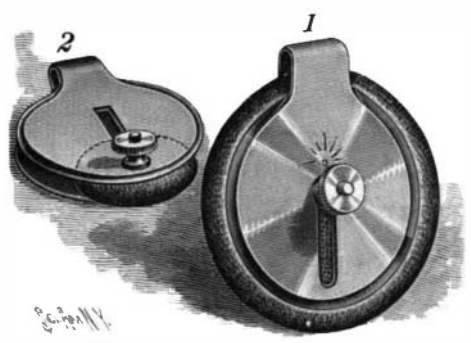
On the 24th Mars and Neptune are in conjunction, an extremely close meeting, which we are not permitted to see without instrumental assistance. Neptune is to be found in 5 hours 18 minutes right ascension and 21 degrees 42 minutes north declination, in the constellation of Taurus.

Mars is now about in quadrature with the sun, and is one of the morning stars. His size is on the increase, and in December, when he is in opposition, and we have him in sight throughout the evening, he will be a most striking and pleasing object to gaze upon. During September, beyond the minor events already alluded to, Mars is not very conspicuous.

Uranus may also be included in the last portion of the remarks upon Mars, as he is quite out of the running for the month, and is held in the grip of the Scorpion. —New York Times.

A RUBBER ERASER HOLDER.

A simple device for holding circular rubber erasers, by which the eraser may be securely and firmly held



HENKEL'S ERASER HOLDER.

even when worn to a very small size, is represented in the engraving, and has been patented by Charles V. Henkel, of No. 590 East 136th Street, New York City. Fig. 1 shows the device in position when the eraser is new and of full size, and Fig. 2 when the eraser is greatly reduced in size, or nearly worn out. The holder has circular thin metal side plates in which are opposing radial slots adapted to carry a head or pin on whose other end is a screw clamping nut. The eraser has axial movement on the pin, and by moving the latter outward the center of the eraser is brought correspondingly near the edge of the side plates. The eraser may be freely turned on the pin and expose every portion of its periphery.

ACCORDING to the Cologne Gazette, paraffine is found to be an excellent remedy for snake poison. The paraffine oil is worked thoroughly into the wound and then allowed to stand on it in a pool or the bitten part poulticed with paraffine.

The Products of Hawaii.

The island of Hawaii is the largest of the Hawaiian group, having an area of 4,216 statute square miles, an acreage of 2,500,000, and a population exceeding 27,000. It is situated between 20° 30' 19" north latitude. Its relative size to the entire group is five-eighths of all. Its population is about one-third that of all the islands, and probably more than that of Honolulu and the island of Oahu. In its natural resources, it has more than that of all the other islands of the group combined, having twenty-five sugar plantations in active operation, controlling over 100,000 acres of land, of which over 40,000 are in actual cultivation for sugar growing purposes. These plantations give employment to over 10,000 men and women, and produce an average of over 73,000 tons of sugar annually, of the average value of $3,500,000.

This sugar product is not far from one-half of the entire product of all the islands of the group. In addition to the raising and manufacture of sugar, some of the plantations have large stock and dairy interests, one, the Hutchinson Plantation Company, having over 3,000 head of stock; and the Kukaian Plantation Company, which breeds and raises the best of horses, mules, jacks, cattle, sheep, goats, hogs, etc., having a large herd now on its place. It also has a large dairy in connection with its other interests, in which are 500 cows, 150 of which are milked daily. This plantation has about 80 acres of coffee growing. The crop this year from 40 acres is estimated at 91,530 pounds of berries.—Hawaiian Commercial Journal.

Recent Patent and Trade Mark Decisions.

Houston E. & W. T. R. W. Company v. Stern (U. S. C. C. A. 5th Cir.) 74 Fed. Rep. 636.

Damages for Infringement.—In action at law for infringement of a patent the damages recoverable are not restricted to actual damages, but evidence may be given of sales made to other parties and license fees collected as royalty. In such case a witness cannot be permitted to give his opinion as to what would be the fair, reasonable value of the right to use the invention. Where the evidence shows only three sales made more than ten years before the infringement complained of, while the device has been on the market during all the intervening time, it is not a sufficient basis to establish any market value for the patent, and hence nominal damages only can be given.

Excelsior Elevator Cord and Hatch Cover Company v. Foote (U. S. C. C. N. Y.) 74 Fed. Rep. 772.

Hatchway Covers.—The Fraser patent No. 278,528 for a combination of a number of doors, cords, or chains, a number of catches, and a connection between the catch of one door and the adjacent door, so that the closing of the latter will release the former and permit it to close, is held void as showing only mechanical skill in modifying and adapting pre-existing devices.

American Graphophone Company v. Amet (U. S. C. C. Ill.) 74 Fed. Rep. 789.

Graphophone.—The Bell and Taintor patent No. 341,214 for the combination with a grooved tablet having a sound record formed therein of a reproducer having a rubbing style loosely mounted so as to be laterally movable to adjust itself to the groove, is not void for want of invention.

Partial Infringement.—The above claim is infringed by a device having a loose joint that enables the style to follow in the groove of the record, which is used only with a sound record made by the patentee, because in the use of such device all the elements of the patented combination are employed and therefore the independent sale of such reproducer will be prevented.

Ex Parte Lunken (Com. Dec.) 76 O. G. 785.

Mechanical Patent no Bar to Design Patent.—A design patent may be procured on a thing that has been the subject of a mechanical patent, as the two patents relate to different features of a thing which could not be claimed in a single patent.

Utility of a Design.—The word "useful" in the statute relating to designs has reference to mechanical rather than purely æsthetic features in designs relating to machinery.